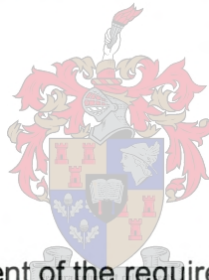


An exploratory study in the Western Cape on game meat as a consumer product

KARLIEN CRAFFORD, B in Consumer Science



Thesis presented in partial fulfilment of the requirements for the degree of Master in
Consumer Science at the University of Stellenbosch

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

ABSTRACT

The purpose of this research was to study the current purchasing and marketing behaviour of game meat by supermarkets, butcheries and restaurants in the Western Cape Province, and to investigate perceptions on, purchasing and consumption of game meat by South African consumers and overseas tourists visiting South Africa. Research was done by the survey method with the aid of structured, self-administered questionnaires. Chi-squared frequencies were used to test for significant influences of data.

The research showed that South African consumers are poorly educated regarding the nutritional benefits and cooking methods of game meat. Consumers indicated that they would buy game meat if they were better informed on its qualities. Just over 73% of the respondents indicated that they have eaten game meat, whilst 66% of the respondents indicated that they would eat game meat again. South African consumers, however, indicated that they are not willing to pay more for game meat than other meat types. Race and educational level were the only two socio-demographical variables that showed significant differences. White respondents and respondents that were in the "post-High school diploma/degree" educational group, were better informed on game meat and were also more likely to buy game meat than either the black or coloured racial groups. The respondents indicated the leanness of meat as one of the most important quality considerations when they buy meat. This provides an opportunity for game meat marketers to market game meat as a low-fat meat product.

This research succeeded in identifying target markets for game meat. Restaurants should market game meat for European tourists, whilst supermarkets and butcheries should focus on marketing game meat to white consumers and consumers with higher educational qualifications, but also target coloured and black consumers. This research confirmed that the South African game meat industry is plagued by numerous misconceptions and contradictions. It is evident that both consumers and marketers of game meat have contradictory beliefs regarding the seasonal availability of game meat. Consumers as well as some of the supermarket, butchery and restaurant meat buyers, are ill-informed regarding the sensory qualities, health benefits and preparation and cooking methods of game meat. Ironically, the research showed that tourists visiting South Africa were the respondent group that were the most knowledgeable regarding the sensory qualities and health benefits of game meat. This research provides a valuable pilot-study into the marketing possibilities of game meat.

OPSOMMING

Die doel van hierdie navorsing was om die huidige aankoop en bemarkingsgedrag vir wildsvleis deur supermarket, slaghuise en restaurante in die Wes-Kaap gebied, en persepsies oor en aankoop van wild deur Suid-Afrikaanse verbruikers en oorsese toeriste wat Suid-Afrika besoek, te ondersoek. Gestruktureerde vraelyste is ontwerp om die navorsing volgens die opname metode uit te voer. Chi-kwadraat frekwensies is gebruik om beduidende invloede te meet.

Die navorsing het gewys dat Suid-Afrikaanse verbruikers oningelig is aangaande die gesondheidsvoordele en gaarmaakmetodes van wildsvleis. Verbruikers het aangedui dat hulle wildsvleis meer gereeld sou koop indien hulle beter ingelig word oor wildsvleis se kwaliteite. Die navorsing het bewys dat toeriste wat Suid-Afrika besoek, beter ingelig is oor die sensoriese kwaliteite en gesondheidsvoordele van wildsvleis as Suid-Afrikaners. Net meer as 73% van die Suid-Afrikaanse respondente het aangedui dat hulle al voorheen wildsvleis geëet het, terwyl 66% aangedui het dat hulle weer wildsvleis sal eet. Suid-Afrikaanse verbruikers het egter genoem dat hulle nie bereid is om meer vir wildsvleis te betaal as vir ander vleis nie. Ras en opvoedkundige vlak is die enigste sosio-demografiese veranderlikes wat 'n beduidende invloed gehad het. Blanke respondente en respondente in die "post-hoërskool diploma/graad" opvoedkundige vlak, was beter ingelig oor wildsvleis en ook meer geneig om wildsvleis te koop. Die vetinhoud van vleis was vir meest respondente 'n belangrike maatstaf by die keuse en aankoop van vleis. Aangesien wildsvleis 'n lae-vet produk is, is daar dus geleentheid vir vleisbemarkers om wildsvleis as 'n lae-vet produk te bemark.

Hierdie navorsing het daarin geslaag om teikenmarkte vir wildsvleis te identifiseer. Restaurante moet fokus op oorsese toeriste wat Suid-Afrika besoek, terwyl supermarkte en slaghuise bemarking moet rig op verbruikers met 'n hoër opvoedkundige vlak en blanke verbruikers. Hierdie navorsing het bevestig dat die Suid-Afrikaanse wildbedryf geknel word deur verskeie wanpersepsies en teenstellings. Dit is duidelik dat sowel verbruikers as bemarkers van wildsvleis, teenstellende persepsies het aangaande seisoenale beskikbaarheid van wildsvleis. Hierdie navorsing verskaf 'n waardevolle voorloperstudie vir verdere navorsing oor die bemarkingsmoontlikhede van wildsvleis.

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“Minds are like parachutes, they work best when open”

-Thomas Dewar

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CHAPTER 1

Introduction

It is believed that consumers are becoming less predictable in their behaviour, resulting in fragmented and inconsistent consumer demands, and therefore leaving producers with an ever-increasing challenge of identifying these demands (Grunert, Harmsen, Larsen, Sørensen & Bisp, 1997). Consumer behaviour cannot only be explained in terms of what consumers prefer to buy, but also in terms of what is available. According to Dransfield, Zamora and Bayle (1998), the consumer's perception of meat and other food not only depends on their inherent properties, but also on the way in which these properties interact with immediate external factors and on the previous experiences of the consumer.

A number of universal trends in consumer attitudes to health and food can, however, be identified. According to Armitstead (1998), today's consumer sees health as a macro concept and prefers to lead a balanced lifestyle. Convenience foods have become a permanent part of most consumers' lives. Due to the spread of foot-and-mouth disease, the occurrence of dioxin in poultry, and BSE (*Bovine Spongiform Encephalopathy*/mad-cow disease) in the 1990s, consumers are concerned about the safety and quality of meat products. This has brought about a considerable decrease in meat consumption around the world. Younger consumers tend to consume less red meat and more chicken and pork, because of the negative publicity surrounding red meat and health. Nutritional guidelines place increasing emphasis on reducing the ratio of n-6/n-3 poly-unsaturated fatty acids in the diet (Dransfield, 2001). These growing health concerns have led to the demand for low kilojoule and low cholesterol products. Consumers are increasingly concerned about the environment and are therefore interested in free-range and organic products, as well as products produced by natural production methods (Steenkamp, 1997).

Around the world, meat from all game animals is referred to as venison. It is, however, advisable that South Africa should distinguish game meat from venison, as game animals farmed for meat in Australia, New Zealand, Europe and America are predominantly domesticated animals, whereas South African game meat originates from wild, free-running animals. For the purpose of this study the term game meat will be used when referring to meat from game antelope in Africa, whereas the term venison will be used when referring to meat from domesticated game animals such as deer.

According to Hoffman and Bigalke (1999) game meat can be seen as an organic product, as it is free of chemical fertilisers and growth hormones. Game meat is lower in fat than beef, mutton/lamb or pork. Von La Chevallerie (1972) documented the moisture content and fat content of certain game species and reported an average moisture content of 75.5% and an average fat content below 2.5% for game meat in general. According to Schönfeldt (1993) and Hoffman (2000), game meat has a fat content of between two and three percent and is therefore lower in fat than other domestic meat species. Game meat is also lower in saturated fat and higher in poly-unsaturated fatty acids than beef. Decreased intakes of saturated fatty acids are associated with lower blood serum cholesterol and therefore diminish the risk of cardiovascular disease development (Elliot, 1993). Viljoen (1999) studied the fatty acid components of springbok meat

compared to that of beef and found that springbok (*Antidorcas marsupialis*) meat has less saturated fatty acids than beef. The total fat content of springbok was also found to be four times less than that of beef. A high percentage of arachidonic acid (C20:4), a highly poly-unsaturated fatty acid with serum cholesterol lowering properties, was found in springbok meat. Springbok meat was found to have lower palmitoleic acid (C16:1), a fatty acid with cholesterol increasing properties, than beef does. Furthermore, Viljoen (1999) identified two poly-unsaturated fatty acids in springbok meat that were not present in beef (C20:5; C22:4,6).

Although the fat content of meat is said to contribute to its taste and juiciness, health considerations nowadays override an overall appreciation of the quality of meat (Dransfield, 2001). Juiciness of meat is directly related to the intramuscular lipids and moisture content of the meat. The lipids in meat function as lubrication and ensure juiciness. The water remaining in the cooked meat product is, however, mainly responsible for the juiciness of meat (Jansen van Rensburg, 1997). Although game meat is less succulent than beef because of the low fat content, the moisture content of game meat compares favourably with that of beef. According to Higgs (2000), modern eating practices positively influence the way meat is consumed, and further reduces meat fat levels. Products like pre-marinated steaks, strips for stir-fry, kebabs and cubes for casseroles, all reduce added fat needed in the cooking process, while resulting in a moist end product.

South Africa differs considerably from other game meat/venison-producing countries in that utilisation of game is a private industry, operated as a free-market enterprise. International venison production and marketing is usually organised by a central organisation (Conroy & Gaigher, 1982). In South Africa few large production plants exist and there is no central organisation to market and control the cropping and production of game meat. It is very difficult for individual farmers to market and sell their game meat profitably, because the volume of meat a single farmer can supply is not sufficient to interest wholesalers.

As the game meat industry is still growing in South Africa, it is important to obtain as high a financial return as possible for game meat. Game meat is considered a luxury product and therefore fetches high prices. Individual farmers' sale of game carcasses is not subject to any regulation (Conroy & Gaigher, 1982). According to Hoffman (2001), the major game meat processing plants in South Africa seldom sell more than 5-8% of their production locally. Eloff (2002) studied the extent of the game industry in South Africa and calculated that the gross income of the South African game industry in the year 2000 amounted to R843 million.

Furthermore, Eloff (2002) indicated that the prices of some game animals (e.g. springbok/*Antidorcas marsupialis* and warthog/*Phacochoerus aethiopicus*) at live game auctions are decreasing. Game ranchers will therefore need to find different utilisation methods to increase profit margins. The worldwide tendency towards natural food products and the fact that the South African game industry operates as a free-market enterprise can create lucrative opportunities for the game meat industry. According to Meisinger (2001) selling and marketing are two very distinct and different concepts, as selling is simply defined as taking orders for a product, whilst marketing can be defined as "generating a profit by managing the resources and activities which will ascertain and fulfil the needs and desires of people who buy products and services". The marketing of game meat on a larger and more organised scale and with greater sophistication than has been the case to date could increase profit margins on game meat (Hoffman, 2001).

Research done by the Australian crocodile industry recommended the following strategies that can also be applied to the marketing of game meat in South Africa (Warfield, Ford & Mitchell, 1996):

- Promotional campaigns must be conducted in order to promote products as an exciting food type;
- Target markets should at first be travellers, regular restaurant diners and wholesalers, and then be extended to retail consumers;
- Information and training should be provided;
- Tender and tougher cuts ought to be sold separately and priced accordingly to their level of tenderness;
- Promotional activities should be concentrated around point of sale activities and public relations (e.g. news articles in food publications).

It is virtually impossible to obtain reliable data on game meat production, marketing, consumption and consumer perceptions of game meat in South Africa. Apart from the research of Jansen van Rensburg (1992), no other research on the game meat market in South Africa could be found. Verbeke and Vieane (1999) studied Belgian consumers' perceptions on meat and identified a drastic decline in beef consumption in Belgium. Verbeke (2001) revisited the research of Verbeke and Vieane (1999) and found that two years after their research consumer perception of beef improved in such a way that consumption of beef increased significantly, whilst the consumption of pork and poultry decreased. This could be ascribed to the "image restoration campaigns" the beef industry adopted to market beef. Rhee, Oltman and Han (2000) studied consumer perceptions and knowledge of goat meat. The respondents were questioned on their perceptions of goat meat. An information sheet on the nutritional value of goat meat was then given to them and 61.5% of them indicated that the information they received changed their perception of goat meat. Fifty percent (50%) of the respondents in this research indicated that they would be more inclined to purchase goat meat after acknowledging the information supplied. The respondents also indicated that they would be more likely to buy goat meat if they were provided with cooking instructions and promotional offers. It is apparent that consumer perceptions of meat quality can be changed in order to increase consumption. To achieve this, it is important that the marketing of game meat and the purchase behaviour and perceptions of consumers be researched.

1. AIMS OF THE RESEARCH

This study was undertaken in collaboration with the Departments of Animal Sciences and Consumer Science at the University of Stellenbosch.

This research is a pilot study on game meat as a consumer product in the Western Cape. The purpose of this research was to study the current purchasing and marketing behaviour for game meat by supermarkets, butcheries and restaurants in the Cape Metropolitan area, and to investigate perceptions on and purchasing of game meat by South African consumers and tourists visiting South Africa. Structured questionnaires were designed for the five different research groups (Fig. 1). The specific aims for each research group were as follows:

1. South African consumers:
 - Identifying consumers' buying behaviour for game meat;
 - Explaining consumer buying behaviour by identifying consumer behaviour that influences buying of game meat;
 - Studying consumer traits that influence eating patterns and habits of meat, and that establish perceptions of food.
2. Foreign tourists visiting South Africa
 - Identifying tourists' buying behaviour for game meat;
 - Explaining tourist buying behaviour by identifying consumer behaviour that influences buying of game meat;
 - Studying tourists' consumer traits that influence eating patterns and habits of meat, and that establish perceptions of food.
3. Supermarkets:
 - Studying supermarkets' purchasing and marketing behaviour for game meat and identifying what influences it;
 - Identifying who the consumer is that buys game meat.
4. Butcheries:
 - Studying butcheries' purchasing and marketing behaviour for game meat and identifying what influences it;
 - Identifying who the consumer is that buys game meat.
5. Restaurants:
 - Studying restaurants' purchasing and marketing behaviour for game meat and identifying what influences it;
 - Identifying who the consumer is that buys game meat.

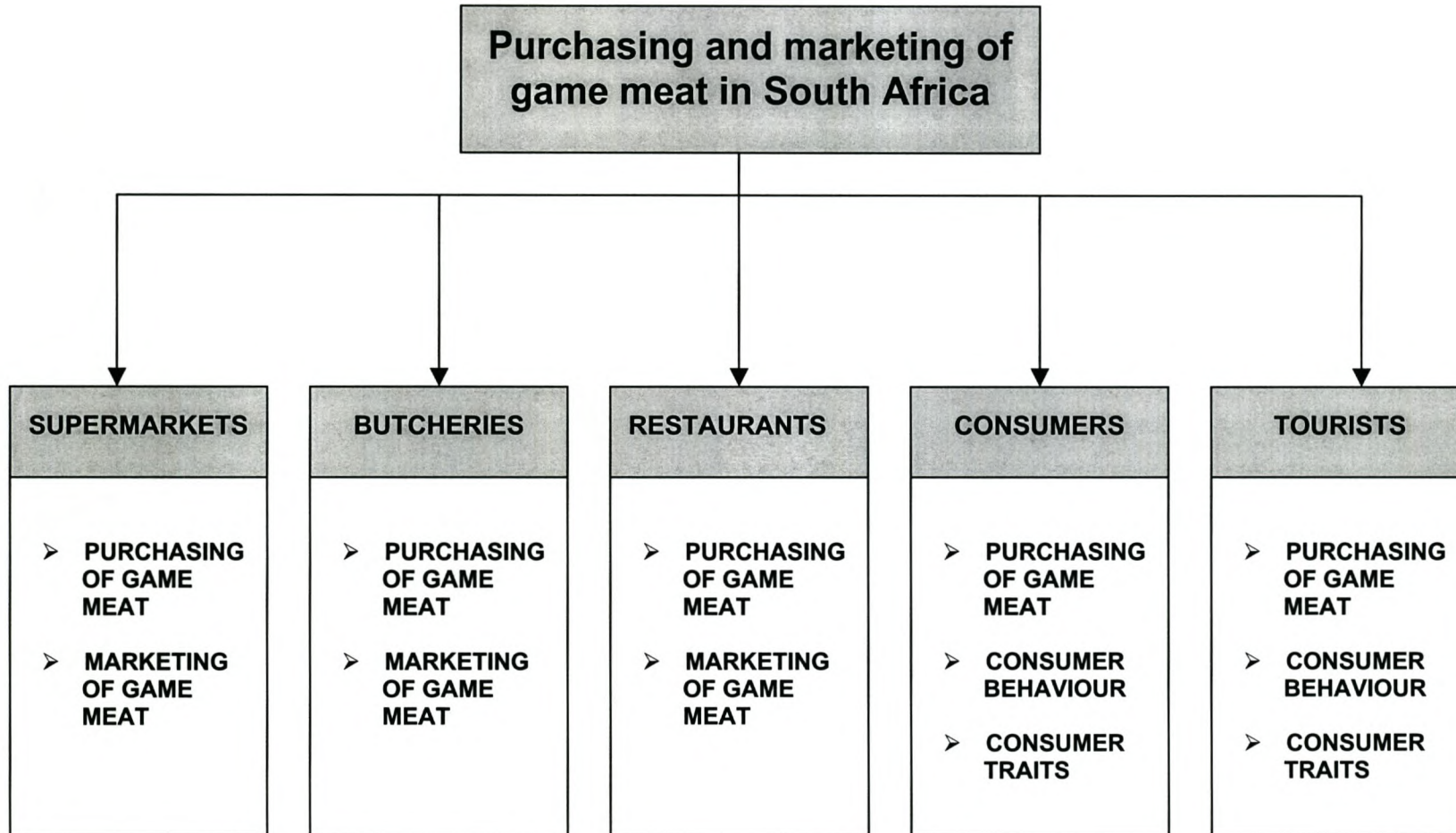


Figure 1
Conceptual framework of the research aims

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CHAPTER 2

Literature review

This chapter provides an overview of the research that has been done on game meat up to the present. This chapter commences with the distinctions between game meat, venison and bush meat and this is followed by a discussion on the attributes of game meat. Factors contributing to game meat quality are subsequently discussed, followed by the role of consumer behaviour in food marketing. This chapter concludes with an analysis of the research discussed in this chapter.

1. CLASSIFICATION OF GAME MEAT, VENISON AND BUSH MEAT

For the purposes of this study, it is crucial to differentiate between the following definitions of game meat, venison and bush meat.

- **Venison:** According to the *Concise Oxford Dictionary* (Sykes, 1984) venison means the flesh of deer as food. The word originates from the Latin word *vesnisun*, which means “to hunt”. It is also described as the meat from several species of ungulates, which may be raised commercially or hunted as game (Jansen van Rensburg, 1997).
- **Game meat:** Flesh of wild animals or birds, used for food. Flesh obtained from wild animals suitable for human consumption (Jansen van Rensburg, 1997).
- **Bush meat:** Wildlife, illegally killed for meat (WWF, 2000).

According to these definitions, venison and game meat have the same meaning. Meat from all game animals is referred to as venison around the world. It is, however, advisable that South Africa should distinguish game meat from venison, as game animals farmed for meat in Australia, New Zealand, Europe and America are domesticated animals (usually deer), whereas South African game meat originates from wild, free-running animals. For the purpose of this study the term “game meat” will be used when referring to meat from game antelope in Africa, whereas the term “venison” will be used when referring to meat from domesticated game animals.

2. ATTRIBUTES OF GAME MEAT

The various attributes of game meat that contribute towards distinguishing it from other meat types will be discussed in this section.

2.1 Game species

In South Africa game species mostly consist of the order of *Artiodactyla* and family *Bovidae*: *Antelope*, and include eight subfamilies, illustrated in Table 1.

Table 1**Subfamily names and species of South African game (Smithers, 1983)**

Subfamily	Species
<i>Aepycerotinae</i>	Impala
<i>Alcelaphinae</i>	Blesbok, bontebok, hartebeest, tsessebe, wildebeest
<i>Antilopinae</i>	Dik-dik, grysbok, klipspringer, oribi, springbok, steenbok, suni
<i>Bovinae</i>	Buffalo, bushbuck, eland, kudu, nyala
<i>Cephalophinae</i>	Duiker
<i>Hippotraginae</i>	Gemsbok, roan antelope, sable antelope
<i>Pelinae</i>	Grey rhebok, red rhebok
<i>Reduncinae</i>	Lechwe, puku, reedbuck, waterbuck

Apart from the above species, deer and warthog from the *artiodactyla* (soliped) and zebra from the *perissodactyla* (even cloven) order are also considered as game species (Smithers, 1983).

All the above species can further be divided into small (Table 2) and large (Table 3) antelope (Smithers, 1983).

Table 2

Small game animals with English, Afrikaans and scientific names and average live weight of males as defined by Smithers (1983)

English name	Afrikaans name	Scientific name	Weight (kg)
Blue Duiker	Blou duiker	<i>Cephalophus monticola</i>	4
Damara dik-dik	Damara dik-dik	<i>Madoqua kirkii</i>	5
Suni	Soeni	<i>Neotragus moschatus</i>	5
Sharpe's grysbok	Sharp se grysbok	<i>Raphicerus sharpei</i>	7.5
Klipspringer	Klipspringer	<i>Oreotragus oreotragus</i>	10
Grysbok	Grysbok	<i>Raphicerus melanotis</i>	10
Steenbok	Steenbok	<i>Raphicerus campestris</i>	11
Red duiker	Rooi duiker	<i>Cephalophus natalensis</i>	14
Oribi	Oorbietjie	<i>Ourebia ourebi</i>	14
Common duiker	Gewone duiker	<i>Sylvicapra grimmia</i>	17
Grey rhebok	Vaalribbok	<i>Pelea capreolus</i>	20
Mountain reedbuck	Rooiribbok	<i>Redunca fulvorufula</i>	30
Bushbuck	Bosbok	<i>Tragelaphus scriptus</i>	40
Springbok	Springbok	<i>Antidorcas marsupialis</i>	41
Impala	Rooibok	<i>Aepyceros melampus</i>	50
Warthog	Vlakvark	<i>Phacochoerus aethiopicus</i>	100

Table 3

Large game animals with English, Afrikaans and scientific names and average live weight of males as defined by Smithers (1983)

Species name			
English name	Afrikaans name	Scientific name	Weight (kg)
Bontebok	Bontebok	<i>Damaliscus dorcas dorcas</i>	61
Blesbok	Blesbok	<i>Damaliscus dorcas phillipsi</i>	70
Puku	Poekoe	<i>Kobus vardonii</i>	74
Reedbuck	Rietbok	<i>Redunca arudinum</i>	80
Red lechwe	Rooilechwe	<i>Kobus leche</i>	103
Nyala	Njala	<i>Tragelaphus angasii</i>	108
Deer	Takbok	<i>Cervus dama</i>	110
Tsessebe	Tsessebe	<i>Damaliscus lunatus</i>	140
Red hartebeest	Rooihartbees	<i>Alcelaphus buselaphus</i>	150
Hartebeest	Hartbees	<i>Alcelaphus lichtensteinii</i>	177
Black Wildebeest	Swartwildebees	<i>Connochaetes gnou</i>	180
Sable	Swartwitpens	<i>Hippotragus niger</i>	230
Gemsbok	Gemsbok	<i>Oryx gazella</i>	240
Cape mountain zebra	Kaapse bergsebra	<i>Equus zebra</i>	250
Blue Wildebeest	Blouwildebees	<i>Connochaetes taurinus</i>	250
Kudu	Koedoe	<i>Tragelaphus strepsiceros</i>	250
Waterbuck	Waterbok	<i>Kobus ellipsiprymnus</i>	270
Roan	Baster gemsbok	<i>Hippotragus equinus</i>	270
Hartmann's mountain zebra	Hartmann se bergsebra	<i>Equus zebra hartmannae</i>	290
Purcell's zebra	Bontsebra	<i>Equus burchelli</i>	320
Eland	Eland	<i>Taurotragus oryx</i>	700
Buffalo	Buffel	<i>Syncerus caffer</i>	800

Not all of the above species are available for consumption. Apart from the oribi, which is considered endangered, all animals in Table 2 and Table 3 are protected species, subject to specific cropping legislation (Nature Conservation Ordinance, 1974). The size of a game animal is measured as the live weight of the animal.

2.2 Carcass yields and live weight

The carcass yields of wild ungulates usually vary between 56-66% of the live weight (Hoffman & Bigalke, 1999). Von La Chevallerie (1970) did extensive research on the yields of different ungulates and concluded that the live weight of any species does not necessarily reflect its production potential. Mature weight is important when game is kept primarily for conservation and aesthetic reasons. The rate of growth and efficiency of feed conversion should rather be prioritised where meat production is concerned.

The quality and quantity of vegetation available influences the live weight of animals. Maximum carcass yield is supposedly obtained when species graze on all available plant species (Conroy & Gaigher, 1982). Conroy and Gaigher (1982) summarised live weight and carcass yields of game species frequently hunted and cropped (Table 4).

Table 4

Average live weight and carcass yields of selected game species compared to that of sheep (Conroy & Gaigher, 1982; Van Zyl, Von La Chevallerie & Skinner, 1969)

Species	Live weight (kg)	Carcass yield (kg)	Carcass yield (%)
Impala	41.0	23.8	58.0
Springbok	33.0	19.1	58.0
Blesbok	55.0	30.3	55.0
Wildebeest	182.0	105.6	58.0
Gemsbok	135.0	77.0	57.0
Kudu	170.0	99.8	58.7
Warthog	43.8	20.6	47.0
Eland	300.0	183.0	61.0
Sheep*	54.2	24.9	46.0

* Van Zyl, Von La Chevallerie and Skinner (1969)

Van Zyl *et al.* (1969) compared the dressing percentages of springbok and impala with that of sheep and found that both springbok and impala had a higher dressing percentage than that of sheep. The carcass yield of game animals can, however, be influenced by several factors that can lead to varying yield results.

2.2.1 Factors influencing carcass yield

Van Zyl *et al.* (1969), Huntley (1971) and Van Zyl and Ferreira (2002) all noted that there are several factors that influence the carcass yield when studying dressing percentages and body component distribution in game animals. It is important that these factors be considered in conducting research on game animals.

The first of these factors is the placing of the shot when the animal is cropped. Head or neck shots will result in a minimum loss of yield (Hoffman & Bigalke, 1999). Secondly, the stomach fill and the intestines of an animal have an effect on the carcass yield. A blesbok, for instance, has a stomach fill and intestine content almost twice that of the springbok. Furthermore, the content of the alimentary tract of game animals is higher in the morning than the late afternoon. Seasonal variations also occur with regard to alimentary tract fill, as grazing habits differ from season to season (Van Zyl *et al.*, 1969). According to Van Zyl and Ferreira, (2002), the stomach content of an animal can amount to ten percent (10%) of its live weight. It is therefore more accurate to calculate carcass yield in terms of empty (excluding stomach and intestine fill) body weight.

Another factor to consider is whether the carcass blood is included or excluded from the yield weight. According to Van Zyl *et al.* (1969), the amount of blood lost before weighing is influenced by the location of the bullet wound. If an animal is shot through the heart, blood will be retained in the thoracic cavity, whereas a shot through the jugular vein will result in a great loss of blood.

The age and sex of game animals also influence carcass yield. Mature animals are naturally heavier than young animals. In most species males are heavier than females and will thus have a higher carcass yield (Smithers, 1983).

2.3 Sex

Mature males of most game species are heavier than mature females. Weight differences between male and female only become apparent from the age of two years onwards. Thus meat production is only influenced by sex when adult animals are concerned. In most species more male than female animals are cropped because of the possibility of endangering population dynamics (Von La Chevallerie, 1970). Animal sex ratios can be controlled in order to improve productivity (Fairall, 1984).

Hoffman (2001a) studied the physical meat quality attributes of night-cropped impala and found that pH values of the meat differed between the sexes. This could, however, be accounted for by the fact that males cropped were finishing the rutting season and are then usually in a more excitable state than females. MacDougall, Shaw, Nute and Rhodes (1979) studied the effect of pre-slaughter handling on venison from farmed red deer and also found a difference in pH values between males and females. Meat from female animals had a lower pH value than that of males. Lewis, Pinchin and Kestin (1997) found that female animals show less active responses to disturbances than males and males show an increased response when in breeding herds, as opposed to bachelor (all-male) herds.

2.4 Season

A misconception exists about the influence of seasonality on the cropping and production of game meat. Game is perceived as a seasonal product, because the hunting season is normally during wintertime. It is furthermore apparent that misconceptions exist surrounding the feeding habits and mating patterns of game animals, which leads to the belief that game meat is a product that can only be acquired during wintertime.

Most game animals mate and calf throughout the year. According to Smithers (1983) buffalo, kudu and blesbok are the only game species that mate and calf only once per year. Other species mate and calf throughout the year at different times of the year. Calving often takes place in winter, the traditional hunting time. It is thus incorrect to assume that seasonality depends on animal mating and calving time.

According to Jangle (Personal communication, R. Jangle, Western Cape Nature Conservation, 10 May 2002), animals are better fed in winter as more water is available and the veld is in a good condition. This could, however, only be said of the Western Cape region, as the Karoo and the Northern parts of the country are dry during wintertime and water is then scarce. Cropping in winter will thus not necessarily result in better-fed animals, as feeding conditions will depend on the rainfall of the region in which animals reside. Furthermore, Kroon, Van Rensburg and Hofmeyer (1972) found that no apparent variation in body weight of blesbok (*Damaliscus dorcas philiipsi*) exists during the different seasons.

The traditional season for hunting is usually the winter; however, according to the Western Cape *Hunting Proclamation for 2002* (Western Cape Provincial Gazette, 2001) blesbok, impala, gemsbok and springbok may be hunted from 1 January to 31 December. Hunting of other game animals is subject to times permitted by the Hunting Ordination of the Department of Nature Conservation (1974). Kudu, for example, may only be hunted from 1 June to 31 July. Springbok, impala, blesbok and gemsbok are the species most widely utilised for consumption and hunting legislation places no restriction on shooting seasons for these animals. Furthermore, it is possible for farmers to obtain certificates of adequate enclosure if their farms are adequately fenced to keep in game animals. This certificate allows the owner of the land to hunt any number of species of protected wild animals on the land by any method specified by such a certificate. At the moment 102 farms in the Western Cape (Personal communication, D. Higgnet, Western Cape Nature Conservation, 13 May 2002) and a total of 5061 farms in South Africa (Eloff, 2002) possess certificates of adequate enclosure. This implies that game animals can be hunted throughout the year. Cropping and production of game therefore does not rely on restrictions of a hunting season.

The only relevant issue surrounding the seasonality of game meat is the fact that ambient temperatures are cold enough during winter to prevent carcasses from spoiling before being dressed and cooled (Personal communication, R. Bigalke, University of Stellenbosch, Department of Nature Conservation, 13 May 2002). During summer months meat spoils easily as carcasses are exposed to high temperatures in the sun before carcasses can be collected and dressed. This problem can be overcome in summer if farms are equipped with the necessary cooling facilities and animals are collected and dressed immediately after cropping has taken place. Thus, it is apparent that the season or time of year does not necessarily have to hamper the cropping and production of game animals.

2.5 Cropping of game

Cropping of game animals is an integral component of wildlife management. Cropping controls animal numbers and can also be used as a method of manipulating animal sex ratios for most effective breeding and maximum productivity. Furthermore, cropped animals are utilised by selling game meat and other animal products. Sustainable agriculture employs methods to maintain or increase productivity while not

causing agricultural or environmental degradation. Cropping can thus assist in conserving nature by controlling animals and by sustainable utilisation through game meat sales (Lewis *et al.*, 1997). Von La Chevallerie (1970) listed the requirements for a successful cropping technique as follows:

- Humanity
- Economy
- Efficiency
- Low wounding percentages
- Low disturbance and scattering
- Selectivity of correct ages and sexes
- Minimal damage to meat
- Ability to bleed carcasses
- No association with humans.

2.5.1 Species suitable for cropping

According to Conroy and Gaigher (1982) the most common game species ranches within South Africa are springbok, eland, blesbok, impala and kudu. Jansen van Rensburg (1992) found that South African game farmers ranked springbok as the most favoured species to farm with, followed by impala, kudu and blesbok. Gemsbok is also a popular species often found in the Northern Province Kalahari region. Van der Waal and Dekker (2000) estimated that the number of gemsbok equals the number of eland found in the Northern Province. According to Hoffman and Bigalke (1999) and Jansen van Rensburg (1992), the springbok is at present the game species cropped most extensively in South Africa (Fig. 1).

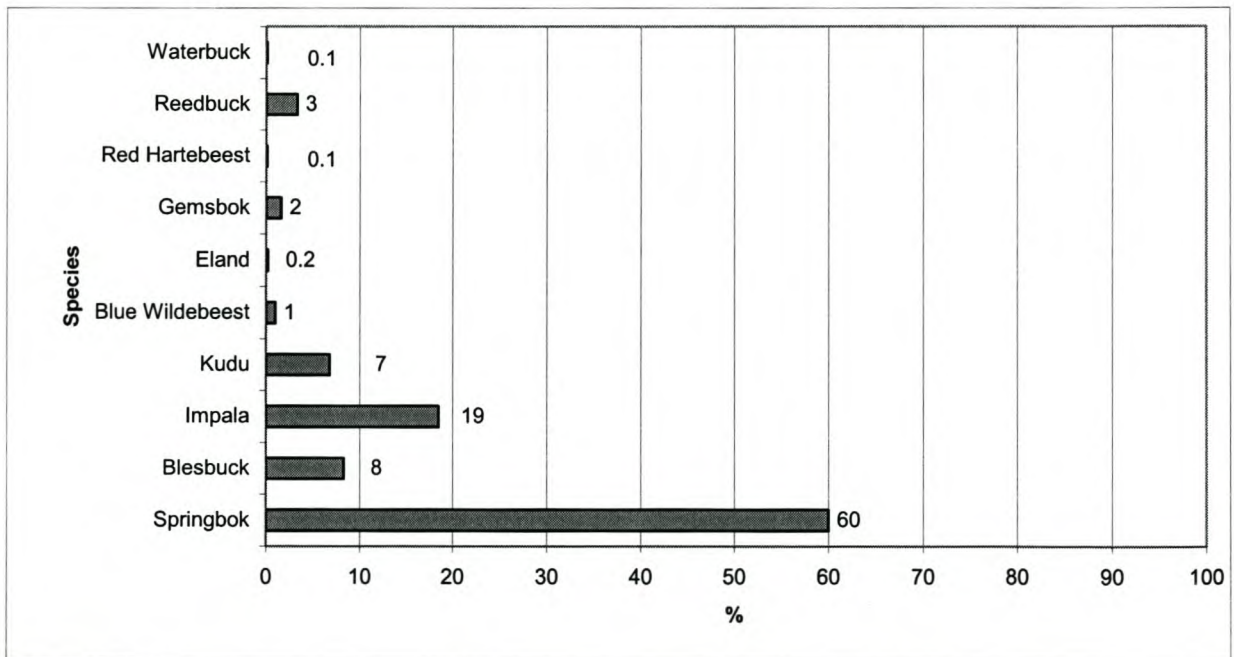


Figure 1
Percentage of game species cropped in South Africa (Jansen van Rensburg, 1992)

2.5.2 Methods of cropping

It is imperative that game animals be handled correctly prior to cropping and slaughter, as incorrect handling can result in meat that is either pale, soft and exudative (PSE) or dark, firm and dry (DFD) (Hoffman, 2001a).

Animals cropped for commercial sale are usually cropped with shotguns from helicopters or from a hide by day, or at night with the aid of high-velocity small-calibre rifles and spotlights (Skinner & Louw, 1996). Lewis *et al.* (1997) investigated the welfare implications of night shooting of wild Impala and concluded that night shooting is a satisfactory method of cropping. This method causes minimum damage to carcasses and induces the least stress in animals.

Head or neck shots are preferred when cropping game, as these types of shots normally kill the animal instantly. A shoulder or rib shot could result in animals running substantial distances before dying, an unacceptable practice from a conservation and meat-quality perspective (Hoffman & Bigalke, 1999). Hoffman (2001b) investigated the effect of different cropping methods on the meat quality of warthogs and found that head and shoulder shots, where the animal died instantly, resulted in meat with a normal colour and a lower drip loss than meat of animals that did not die immediately after cropping.

2.5.3 Cropping rates

In years of adequate rainfall lambing can take place twice per year and the normal cropping rate of 30% can increase to 40%. If game prices are high, farmers can benefit from the increase in cropping rate. Increase in the cropping of young lambs may stimulate reproduction by inducing ewes that would otherwise have lactated (Skinner & Louw, 1996).

2.5.4 Cropping age

The most economic age to crop animals is strongly influenced by the high costs of shooting, dressing and marketing. If costs per animal are high, farmers would naturally crop heavy, older animals, resulting in lower-quality meat (Von La Chevallerie, 1970). Meat from young animals (2-3 tooth) is more tender than that of older animals (8 tooth) (Jansen van Rensburg, 1997). An ideal age for most efficient cropping is between six months and one year for both sexes (Hoffman & Bigalke, 1999). During the rutting season males found in the breeding herd should not be cropped, as this will lead to an increase of male aggression and a disruption in mating behaviour (Skinner & Louw, 1996).

2.5.5 Wasting percentages

According to Hoffman and Bigalke (1999) hunters prefer to shoot animals through the shoulder, rather than the neck or head. A head or neck shot results in minimum wastage (3%), whereas a shoulder shot results in a considerably higher wastage percentage that can be as high as 20%. Neck is also considered a lower-value joint than shoulder. It is thus possible to control wastage percentages if animals are cropped accurately.

2.5.6 Stress

Chronic *ante mortem* stress in game animals results in high pH meat that may be dark in colour, have a short shelf-life and a poor water-binding capacity (Sharman, 1983; Hoffman & Bigalke, 1999). During stress, glycogen depletion takes place in the muscles and increases the risk of a high pH value developing. A high pH value leads to pathogene proliferation and increases the possibility of meat spoiling and the subsequent development of a dark red colour product (DFD). Pale, soft and exudative (PSE) meat results when short-term *ante mortem* stress stimulates the rate of acidification of the muscles immediately *post mortem* and low pH values are then reached in the muscles, whilst the temperature of the carcass is still high. This causes denaturation of some of the muscle proteins, resulting in a reduction of the water-binding capacity. When the muscle is then cut, this unbound water exudes, resulting in potentially dry meat. If game animals are cropped utilising methods that cause minimal stress, the meat quality should be similar to that of traditional domesticated animals (Hoffman, 2001a).

2.5.7 Illegal cropping of game

The illegal cropping of game animals is believed to be responsible for a serious decline in African wildlife populations, especially in South Africa's neighbouring countries of Botswana, Zimbabwe, Mozambique and Zambia. Increasing human populations, poverty and unemployment cause many people to rely on natural resources as a source of income or food. This has given rise to the trade in so-called "bush meat". In many African countries the market for bush meat is well established, as bush meat is cheaper than domestic meat. In Kenya bush meat is 129% cheaper, in Zimbabwe 75% cheaper and in Botswana 30% cheaper than domestic meat. The biggest problem surrounding the illegal trade of meat is the decline in wildlife species numbers in state land, as animals are killed without control. This decline in wildlife makes it very difficult to implement sustainable harvesting of animals and consequently an organised legal trade of game meat (WWF, 2000).

It is crucial that African countries attend to the problem of bush meat, as wildlife can be in perilous danger of extinction. The legal trade in game meat can, on the other hand, earn thousands of rands if managed profitably. In order to combat illegal trade in meat, impoverished communities need to be involved in the legal trade of game (WWF, 2000). However, it can be argued that cultural interpretations of sustainable living differ radically and that South Africa is the only country in Southern Africa that can afford the maintenance needed for protected wildlife areas. According to Hanks (1995), any debate on the sustainable use of wildlife must be directed by the ecological, economic as well as social realities of the country or region concerned.

According to Jangle (2002), the problem of illegal cropping exists in South Africa and is also a concern in the Western Cape. Small game species like duiker and klipspringer are frequently cropped illegally as they are small animals, easily killed by methods other than shooting. These small species are also easily moved after killing. When illegally cropped meat is sold in South Africa, it can have a negative influence on the game

meat industry, as meat quality is inferior, resulting from poor cropping methods and uncontrolled storing of meat.

The Department of Nature Conservation in Zimbabwe combats the illegal cropping of game by selling meat from regular cropping/culling to the rural communities at low prices. This project not only helps to restrict illegal cropping, but also provides job opportunities. The money made from the meat sales is used to pay for the equipment used for the cropping/culling. This project also controls the market price of game meat, making it difficult for illegal game meat sellers to sell their products (Bourgarel, Des Clers, Roques-Rogery, Matabilia & Banda, 2002).

2.5.8 Legislation on nature conservation and the cropping of game animals

The conservation of wild animals and legislation on cropping of these animals in South Africa differs from province to province in accordance with vegetation conditions, climate and animal counts in that province. In the Western Cape the Ordinance on Nature and Environmental Conservation, Article 19 (1974) stipulates the rules and regulations with regard to cropping of game animals. Every year an explanatory Addendum with any changes to this legislation is released in the Government Gazette of the Republic of South Africa.

This legislation contains information on prohibited ways of hunting, endangered species, certificates of adequate enclosure, sale of carcasses, professional cropping, etc. According to this legislation, hunting is allowed only during permitted hunting seasons, with the necessary permits and the consent of the landowner. Prohibited ways of hunting game animals are also included in this legislation. This legislation also deals with obtaining certificates of adequate enclosure. A certificate of adequate enclosure can be obtained through the Department of Nature Conservation, after it is certified that a game ranch is adequately fenced to keep game animals within the borders of a game ranch, a full description of the species of game animals fenced is supplied, and it is established that the vegetation on the ranch is adequate for the number and species of animals on the land. On acquiring a certificate of adequate enclosure, a land owner can at any time of the year hunt, sell or donate any animal, specified in his certificate, on his land.

This legislation also stipulates that the sale or donation of any wild animal or carcass thereof must be accompanied by a written document by the land owner on where the animal came from, certifying the name and address of the land owner, person in possession of the animal/meat, the date on which the animal was acquired and the number and species of the animal(s) in question, along with a statement by the landowner that the animal was donated or sold. This helps to prevent illegal cropping/culling of game animals.

The legislation stipulates the restrictions that are placed on the selling, buying, donating and processing of any endangered animal species, stating that no endangered animal may in any way be traded with or culled or processed without authorisation by the Department of Nature Conservation. Endangered animal species to which this legislation applies are also listed. This legislation also deals with the specifications professional and amateur hunters must adhere to.

According to Shroyer (2002) the legislation on the protection of wildlife in South Africa is inadequate. Shroyer (2002) argues that this legislation could potentially have detrimental effects on wildlife, as habitats are destroyed. Possible detrimental activities that Shroyer (2002) associates with wildlife ranching are listed in Table 5.

Table 5

Activities that may possibly be detrimental to the conservation of wildlife (Shroyer, 2002)

Possible detrimental activities associated with wildlife ranching
Building and removal of fences
Establishment of temporary or permanent bomas for the capture and holding of animals
Trails or facilities for adventure or recreational activities
Demarcated scientific areas and equipment
Transport of wildlife
Road maintenance in natural areas
The impact of tourism – refuse, dumping, noise, disturbance, etc.

Shroyer (2002) further emphasises that animals are not recognised as sentient beings with intrinsic value, and argues that there is no clear line between the sustainable utilisation and the exploitation of wildlife.

Conroy (2002) conversely believes that, although animals cannot claim rights and must therefore have their welfare and the land they inhabit protected, they cannot be left to proliferate without culling or hunting as a management option. Conroy (2002) further argues that both agriculture and game ranching have as their primary objective the sustainability and conservation of the resource. According to Hanks (1995), the culling of animals plays a vital role in conserving biological diversity and can be considered far less cruel than the trauma game animals experience when natural predators kill them. Hanks (1995) further concludes that the culling of game animals has become an integral part of the tourism industry and employs many people.

South Africa has over 5000 exempted game ranches that provide a gross income of over R843 million per year and create more than 45 000 job opportunities (Eloff, 2002). Simultaneously, South African tourism is surging, because visitors from highly industrialised countries are willing to pay excessive amounts in order to see wild animals in their natural habitat (Hoffman & Bigalke, 1999).

It is evident that the legislation for the conservation of wildlife aims to conserve wildlife and prevent illegal culling of game animals. If sustainable utilisation of game animals would become illegal, it would have a far-reaching environmental impact. Animal numbers, for example, would proliferate and vegetation would become exhausted, which is surely more detrimental to the environment and its wildlife than eco-tourism or the building or removing of game fences.

2.5.9 Legislation on the slaughter, production and export of game meat

The safety of meat in South Africa is governed by the Legislation on Meat Safety, Article 40 (2000). The purpose of this legislation is to improve the safety of meat and meat products, to provide national standards for abattoirs, to regulate the import and export of meat, and to provide meat safety standards.

According to Addendum 1 of this legislation, it applies to both domesticated and wild animals. The wild animals listed include, amongst others, blesbok, eland, gemsbok, kudu, springbok and impala. The law states that these animals must be slaughtered at a registered abattoir (except if this is done for cultural, religious or personal use) and inspected by an inspector from the national government. This legislation does not take into account the specific circumstances surrounding the cropping of game animals. According to the Ordinance on Nature and Environmental Conservation, Article 19 (1974), meat from game animals may be sold if a permit is held by the person who wants to sell the meat; there is no need for inspection and slaughtering in a registered abattoir.

This legislation further provides guidelines for the exporting and importing of meat. There are extensive regulations regarding the export of meat, including meat safety, packaging regulations, hygiene inspection regulations, harvesting methods, etc. Meat for export is subject to strict quality, health and safety controls, with specific requirements for each of the different countries of export. It is evident that strict control is applied to ensure product quality and safety. The local legislation for game meat sales in South Africa is, however, inadequate. The game meat industry operates on a free-market system (Eloff, 2002). Because there is no organisation that controls game meat, there are no quality standards or standardised cuts for game meat. There are also no standards for game meat production or processed products. This creates endless possibilities for game ranchers and game meat producers, but leads to a lack of control of the quality of the meat that is sold to the consumer. Game meat of varying quality will therefore be sold, creating consumer distrust and confusion and therefore negatively influencing game meat sales.

2.6 Game ranching

According to Ebedes (2002), game ranching can be defined as the commercialisation and utilisation of wildlife by private landowners. Game ranching is a relatively new agricultural industry in South Africa, but it is already well established. Ledger, Sachs and Smith (1967) and Von La Chevallerie (1970) performed groundbreaking research on the production potential of game meat. They recorded carcass weights and yields and explained game ranching and farming techniques. According to Fairall (1984), indigenous game animals are physically and physiologically adapted to subsist with a minimum amount of water and have a high resistance to parasites and diseases. This makes them highly suitable for farming in more inhospitable regions. It is, however, vital to develop effective production systems for different regions and species.

Dekker and Van Wyk (2002) analysed the game production system of a South African game ranch and found that, although cattle farming is more efficient in terms of meat production than game farming, game farming has a higher income per animal biomass and higher returns can therefore be yielded.

2.6.1 *Managing of surplus animals*

It is necessary that animal surpluses be regularly controlled through cropping. Cropping is necessary to balance animal numbers, because most game ranches do not have predators that aid in the control of animal numbers (Hoffman & Bigalke, 1999). The cropping of large uncontrolled populations of game is only applicable in areas where cropping is done to conserve nature. Game ranching has to be a controlled enterprise. Animal stocking rates and mixture of species must be optimal. Production of game meat can increase if game farms are adequately fenced (Fairall, 1984).

2.6.2 *Impact on the environment*

Conroy and Gaigher (1982) conclude that there is no reason to believe that farming with game will result in any environmental change or degradation in the long run. Overgrazing can be avoided by limiting game numbers and regular cropping. The game species that are most utilised are reasonably free from serious diseases; it is mostly black and blue wildebeest and buffalo that are affected by diseases.

Captive springbok digest the same food less efficiently than dorper and merino sheep, but springbok feed on a wider range of plants than sheep and do not huddle together like sheep, thus preventing erosion and leading to efficient energy balance under natural veld conditions. Cropping of surplus animals is necessary in order to reduce numbers and prevent the exhaustion of natural resources. It is also a method of providing an economic incentive to conserve the environment (Lewis *et al.*, 1997).

2.6.3 *Game ranching as an organic agricultural system*

According to Madge (1995) and Lampkin and Padel (1994), organic agriculture relies on the following principles:

- Farming methods that co-exist with natural systems;
- Sustainable soil fertility;
- Minimal damage to the environment;
- Minimal use of non-renewable resources;
- The enhancement of biological cycles involving micro-organisms, plants and animals;
- The avoidance of mineral fertilisers;
- Prohibition of agro-chemical pesticides;
- Careful attention to the impact of farming on the environment and the conservation of wildlife and natural habitats.

The current game ranching methods in South Africa exclude the use of dipping, fertilisers or growth stimulants and game meat farming can thus be described as an organic agricultural system (Hoffman & Bigalke, 1999).

2.6.4 Game ranching as a sustainable agricultural practice

The principle of sustainable utilisation entails cropping at a rate not exceeding the natural replenishment of animals. Sustainable use can be defined as the use of an organism, ecosystem or other renewable resource at a rate within its capacity for renewal. According to Krynauw (2002), the word “conservation” was defined in the *1980 World Conservation Strategy* as follows:

“...the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations.”

The practical way to conserve would thus entail the establishment of controlled and sustained-yield harvest schemes that can provide people with a means of living from a wild natural resource (Krynauw, 2002).

Sustainable utilisation relies on essential principles in order to conserve the environment. Firstly, sustainable agriculture must be practised in such a way that it actually conserves and enhances environmental quality. Secondly, productivity must be excellent and resources must be used to their full potential. Thirdly, production methods and people management need to be socially acceptable (Krynauw, 2002).

It is evident that sustainable utilisation consist of three basic principles, namely ecological sustainability, economic sustainability and sustainable production. All three these components have to be employed together in order to establish sustainable agricultural practices.

3. GAME MEAT QUALITY

According to Bakula and Kedzior (2001), the sensory characteristics are the most important quality attributes of meat and meat products. In this section game meat cuts, game meat production and the sensory qualities that contribute to game meat quality will be discussed.

3.1 Game meat cuts

There are no standardised cuts for game meat in South Africa. Jansen van Rensburg (1997) found that bone-in cuts tend to be juicier and have a more typical game flavour. Hoffman and Bigalke (1999) recommend that the standardised South African cuts for beef, lamb and pork be applied to game meat. Cuts for lamb can be applied to smaller ungulates (Fig. 2), beef to larger ungulates (Fig. 3) and pork to warthogs and wild pigs (Fig. 4).

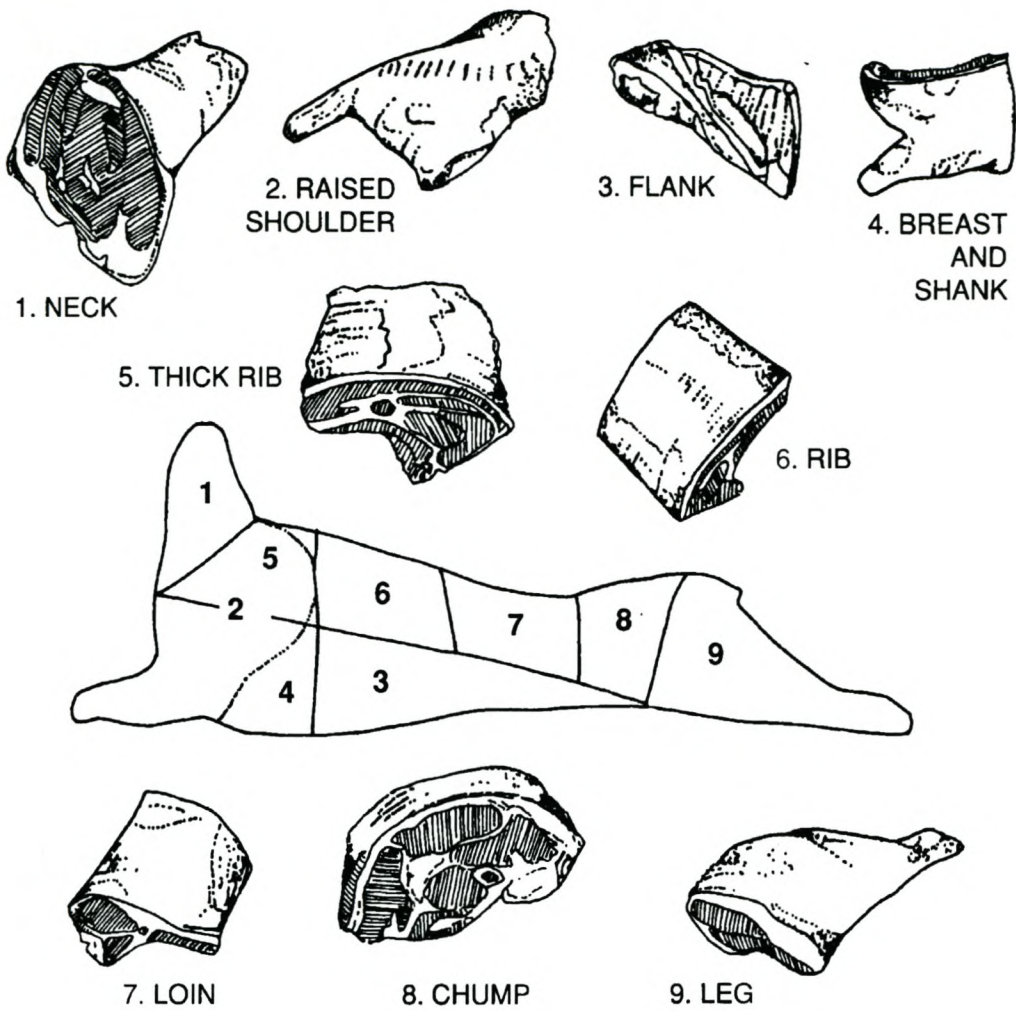


Figure 2

Standard lamb cuts that could be applicable to the smaller ungulates (Hoffman & Bigalke, 1999)

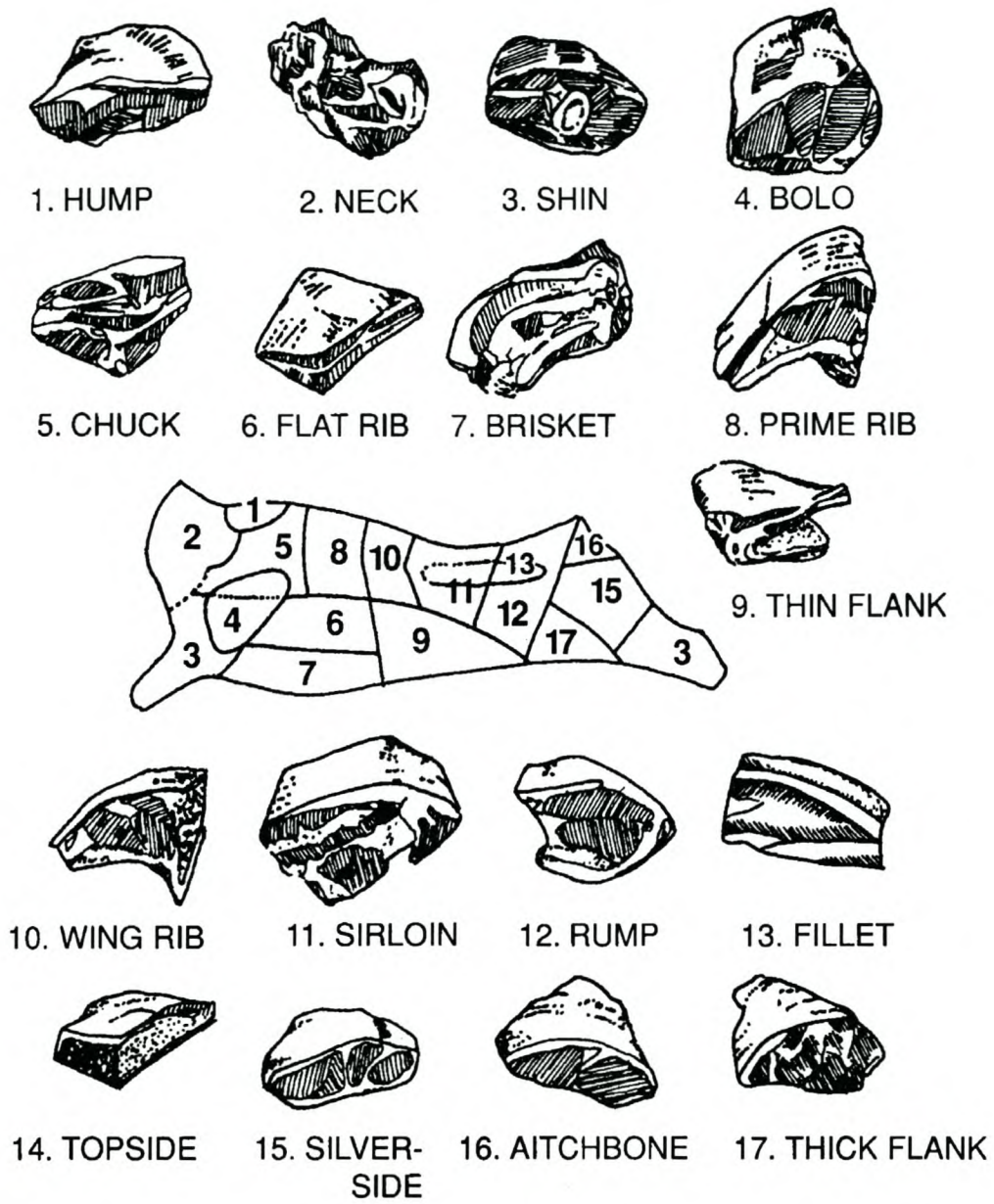


Figure 3

Standard South African beef cuts that could be applicable to larger ungulates (Hoffman & Bigalke, 1999)

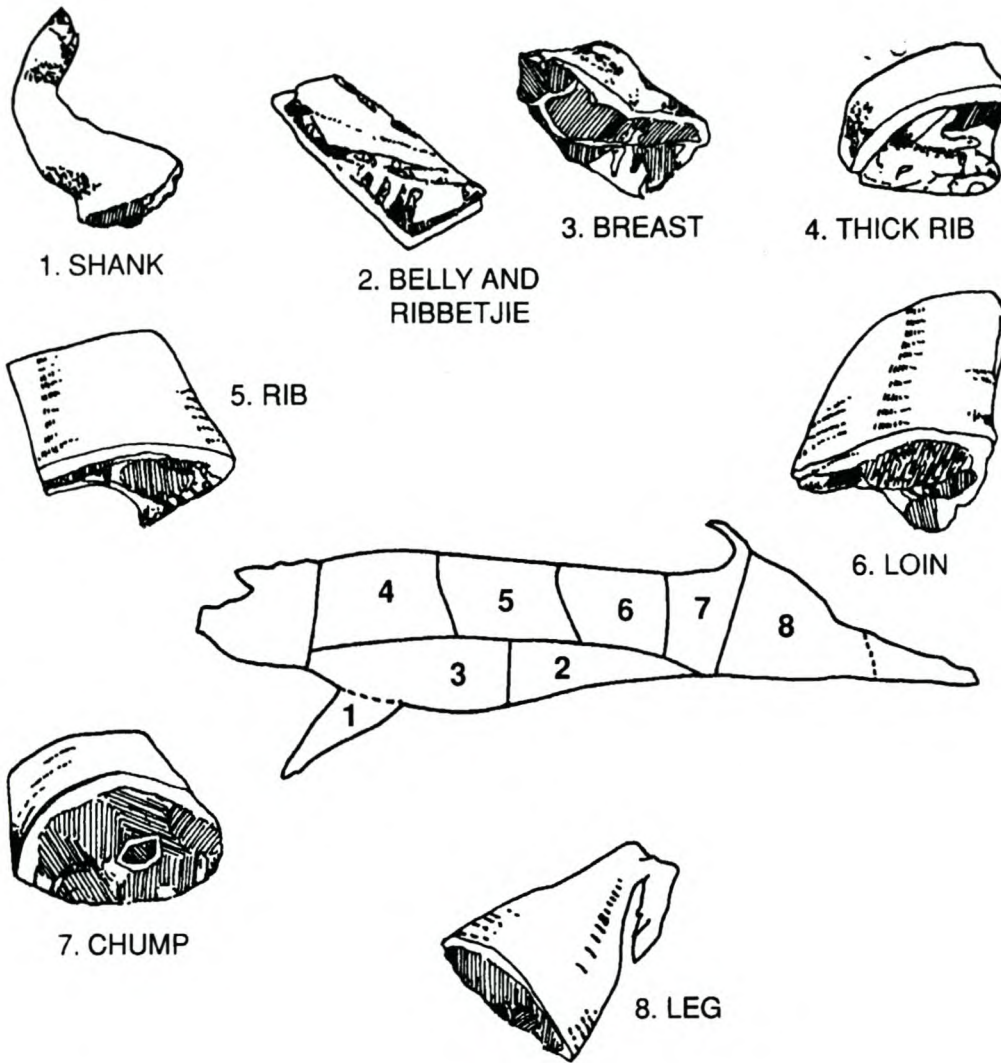


Figure 4

Standard South African pork cuts that could be applicable to warthogs and wild pigs (Hoffman & Bigalke, 1999)

3.2 Game meat production

A type of game ranching in Africa existed almost 18 000 years ago in the form of gazelle herding. It is, however, only since 1910 that farms have been fenced and farmers ranched springbok in limited numbers for meat production and marketing. In the 1950s research started on the ranching of African game at the Doddieburn Ranch in Zimbabwe. During the first half of the century game had little commercial value and there was resistance to game ranching, because conventional agriculture was developing and game was precluded from regions where it could have had an ecological advantage (Skinner & Louw, 1996). Game ranching is thus a relatively new agricultural industry that is already well established in South Africa. According to Ebedes (2002), game is currently commercially utilised in South Africa over an area that exceeds sixteen million hectares. Nine thousand (9000) privately owned agricultural properties commercially utilise game animals.

3.2.1 Utilisation

The utilisation of game has the potential of benefiting wildlife by providing an economic incentive to conserve it. Responsible utilisation involves preservation of species as well as commercial utilisation. According to Hoffman and Bigalke (1999), the commercial utilisation of game in South Africa has shown extensive growth during the past 25 years. Game can be utilised directly or indirectly (Jansen van Rensburg, 1992; Ebedes, 2002) as illustrated in Table 6.

Table 6

Direct and indirect utilisation of game animals in South Africa (Adapted from Jansen van Rensburg, 1992; Ebedes, 2002)

Direct utilisation methods	Indirect utilisation methods
Hunting for cropping of game	Game viewing
Game meat production	Game farm lodging / holidays
Trophy hunting	Hiking trails
Biltong hunting	Game photography
Sport hunting	Hunting and nature schools
Safari hunting	Bird watching
Archery and bow-hunting	Sightseeing tours
Culling for export sales	Art and curios
Live carcass sales	
Trophies and hides prepared by taxidermists	

Live capture and sale is presently a profitable business worth millions of rands. It is, however, foreseen that in the near future only exotic game species will fetch high prices and that the need will arise to market the less exotic species in an alternative way. In the Eastern Province professional hunting alone earned more than R40 million in 1997 (Bezuidenhout, 1998). It is estimated that in 1995 the hunting industry earned more than R400 million per year. The international hunter reportedly spends an average of R30 000 per hunting trip (Hoffman & Bigalke, 1999).

Van der Waal and Dekker (2000) studied game ranching activities in the Northern Province and concluded that local hunting supplied the highest turnover from game meat in this province, followed by live sales and foreign hunting. Radder (2000) studied expectations of hunters in the Eastern Cape and found that game farms need to improve the quality of basic hunting facilities (for example, cooling and slaughtering facilities) in order to attract hunters. By combining cropping for meat with hunting, safaris, hiking trails, etc., it is possible for game ranchers to increase profits. Berry (1986) found that of all the possible game utilisation enterprises, trophy hunting produced the highest net return; however, when an utilisation index was used to

compare the returns of the different utilisation methods per hectare of land, game meat production was found to be the most profitable utilisation method.

Game meat production should not be approached similarly for all game species, as species have different biological and behavioural characteristics, including different yields and different organoleptic traits, such as flavour (Conroy & Gaigher, 1982). When producing game meat, producing criteria that apply to domestic animals must be used as a guideline in order that game meat quality can be compared to that of meat from domestic animals.

3.3 Sensory qualities

The sensory qualities of game meat that will be discussed here include flavour, appearance, tenderness and degree of ageing and juiciness.

3.3.1 Flavour

South African game meat is often perceived to be dry. This could be a result of the meat originating from stressed animals (Hoffman, 2001a).

The gamey flavour of game meat is often related to progressive stages of meat ripeness, spoilage of meat by incorrect bleeding methods, or meat from old male animals. It is imperative that game carcasses be adequately bled after cropping in order to prevent the gamey flavour from developing. Pietersen (1993) ascribes the gamey taste to the relatively high levels of polyunsaturated fatty acids present in game meat.

Von la Chevallerie (1972) found that there is a definite difference between species with regard to flavour acceptability. The flavour of springbok proved to be superior, while red hartebeest was less acceptable than any other species. No gamey flavours were detected in this research when carcasses were correctly bled and hung.

3.3.2 Appearance

The colour of meat is one of the very important criteria consumers use to select meat. Consumers discriminate against meat that is either too pale (PSE) or too dark (DFD). DFD meat has poor colour development and inadequate processing characteristics. The meat of smaller game, like bush pigs or warthog, can be light and pale (PSE). PSE meat contains large amounts of exudate that cause an undesirable appearance, meat weight loss and reduced yields of fresh and processed products. The pH of the muscle is used as an indication of the state of the meat. DFD meat is often defined as having an ultimate pH of ≥ 6 , measured after twelve (12) to forty eight (48) hours *post mortem*, whereas PSE meat is usually defined as having a pH of < 6 , forty-five (45) minutes *post mortem* (Hoffman, 2001b).

In South Africa game meat is often perceived to be of a dark and unattractive red colour (DFD). Apart from stress, another explanation for the darker colour of game meat is the fact that game animals are more active

than traditionally farmed animals, causing more myoglobin to build up in the muscles, resulting in a darker red colour (Hoffman, 2001a).

According to Von La Chevallerie (1972), the meat of gemsbok and eland is lighter in colour than that of springbok and impala. Impala meat has a dark, red-brown colour that is very different from other game meats. Hartebeest has a bright cherry red colour. These distinctions in colour could possibly be employed as an interesting marketing tool. Furthermore, mature animals have a tendency to have darker meat than young animals (Von La Chevallerie & Van Zyl, 1971).

3.3.3 *Tenderness*

The flesh of younger animals is more tender and of a better quality than that of older animals within the same breed or species. The texture of meat depends on the coarseness of the fibre, which increases with age. The perception of game meat as a tougher meat type does not correlate with Warner Bratzler shear values. Von La Chevallerie (1972) measured the tenderness of seven game species (Table 7) and found springbok to be the most tender of the seven species.

Table 7

Tenderness of seven game species measured by shear tests as reported by Von La Chevallerie (1972)

Specie	Shear value (g/cm)
Blesbok	2 323
Eland	3 366
Gemsbok	4 088
Hartebeest	2 907
Impala	2 751
Springbok	1 181
Wildebeest	1 805

According to Hoffman (2001a) shear values for impala are similar to those reported for pigs, thus indicating that the tenderness of game meat is similar to that of pork. According to Von La Chevallerie (1970) tenderness of game meat is similar to tenderness of beef.

3.3.4 *Degree of ageing and juiciness*

Juiciness of meat is directly related to the intramuscular lipids and moisture content of meat. The lipids in meat function as a lubrication and ensures juiciness. The water remaining in the cooked meat product is, however, mainly responsible for the juiciness of meat (Jansen van Rensburg, 1997). Although game is less succulent than beef because of the low fat content, the moisture content of game meat compares favourably with that of beef. It is thus incorrect to assume that game meat will always be dry because of the low fat

content. If animals are cropped correctly, the juiciness of game meat should compare favourably with that of beef or ostrich. Suitable cooking methods can further enhance the juiciness of game meat (Von La Chevallerie, 1970).

Jansen van Rensburg (1997) found that springbok meat aged for too long develops a strong and unacceptable aroma and a soft, mushy texture. Because of the loss of moisture during ageing, the meat dries out and tends to lose its juiciness. Ageing periods of between three and ten days at 4°C with animal skin attached were recommended for optimum ripeness and juiciness.

Forss, Manley, Platt and Moore (1979) researched the palatability of venison of different ages and feeding patterns and found that juiciness of meat increases with animal age.

3.4 Nutritional value

Consumers are increasingly concerned with health and the healthiness of food, leading to an increase in the preference for lean meat cuts. Many younger consumers associate red meat with cholesterol and are turning to fish and chicken as substitutes for red meat. In a study undertaken in the United Kingdom consumers preferring lean beef increased from 30% in 1955 to 70% in 1982. Nutritional guidelines put increasing emphasis on reducing the ration of n-6/n-3 polyunsaturated fatty acids in the diet (Dransfield, 2001). According to Armitstead (1998) consumers are increasingly aware of food issues.

Game meat is lower in fat than beef, mutton/lamb or pork. Von La Chevallerie (1972) documented the moisture content and fat content of certain game species and reported an average moisture content of 75.5% and an average fat content below 2.5% for game meat in general. Game animals tend to resist layering of fats during growth and fat is stored around visceral organs and not intramuscularly (Onyango, Izumimoto & Kutima, 1998). According to Schönfeldt (1993) and Hoffman (2000), game meat has a fat content of between two and three percent and is therefore lower in fat than other domestic meat species (Table 8).

Table 8

Nutritional value of seven game species compared to that of “domestic” meat species (Von La Chevallerie, 1972; Sayed, Frans & Schönfeldt, 1999; Van Zyl & Ferreira, 2002)

Species	Moisture content (%)	Palmetoleic acid (C16:1) content per 100 g (g)	Arachidonic acid (C20:4) content per 100g (g)	Protein content of carcass per 100g (g)	Fat contents of buttocks per 100g (g)
Springbok [#]	74.7	0.01	0.08	23.7**	1.7
Eland [#]	75.8	-	-	-	2.4
Impala [#]	75.7	-	-	22.5**	1.4
Blesbok [#]	75.5	-	-	23.5**	1.7
Gemsbok [#]	76.9	-	-	-	1.9
Hartebeest [#]	76.3	-	-	-	2.0
Black wildebeest [#]	77.0	-	-	-	2.3
Mutton*	60.7	0.63	0.07	13.9	21.6
Ostrich*	76.3	-	-	21.1	3.1
Pork*	55	0.5	0.07	13.9	17.6
Beef*	65.4	0.6	0.03	19.2	14.2

*Sayed, *et al.* (1999)

**Van Zyl and Ferreira (2002)

#Von La Chevallerie (1972)

Game meat is lower in saturated fat and higher in polyunsaturated fatty acids than beef. Decreased intakes of saturated fatty acids are associated with lower blood serum cholesterol and therefore diminish the risk of cardiovascular disease development (Elliot, 1993; Hoffman, 2000). Viljoen (1999) studied the fatty acid components of springbok meat compared to that of beef and found that springbok meat has less saturated fatty acids than beef. The total fat content of springbok was also found to be four times less than that of beef. A high percentage of arachidonic acid (C20:4), a highly polyunsaturated fatty acid with serum cholesterol lowering properties, was found in springbok meat. Springbok meat was found to have lower palmetoleic acid (C16:1), a saturated fatty acid with cholesterol increasing properties, than beef. Furthermore, Viljoen (1999) found two poly-unsaturated fatty acids in springbok meat that are not present in beef (C20: 5; C22: 4,6).

The fat contents of meat is said to contribute to its taste and juiciness. According to Dransfield (2001), health considerations nowadays override an overall appreciation of the quality of meat. In a study done on beef sausages, a reduced-fat product was rated as being as acceptable as the full-fat product. According to Higgs (2000), modern eating practices positively influence the way meat is consumed and further reduces

meat fat levels. Products like pre-marinated steaks, strips for stir-fry, kebabs and cubes for casseroles, all reduce added fat needed in the cooking process, while resulting in a moist end product.

According to Hoffman and Bigalke (1999) game meat can be seen as an organic product, free of any chemical fertilisers or growth hormones.

3.5 Quality of frozen meat versus fresh meat

Thawing of frozen meat results in moisture loss. Frozen and thawed meat would thus be slightly drier and less juicy than fresh meat. Jansen van Rensburg (1997) found that thawing losses from springbok meat were less in boned cuts than in deboned cuts. According to Buys (1993), international trends indicate a shift from frozen products towards fresh products. Meat for the export market is sold deboned and is usually exported frozen, resulting in moisture losses and influencing the tenderness and juiciness of the meat. The Department of Health, National Government, further states in the Regulations governing general hygiene requirements for food premises and the transport of food (Act 63, 1977) that:

- Any food that is marketed as a frozen product and has thawed but the surface temperature of which has not exceeded 7°C may be refrozen: Provided that such refrozen product shall be handled in accordance with good manufacturing practice.

This will result in further moisture losses and impaired meat quality, and may create the expectation that South African game meat is characteristically of such a low quality.

3.6 Value-added game meat products

Many consumers are uneducated about the preparation and cooking methods of game meat. It is therefore imperative that game meat producers develop value-added products. Not only would these products increase profit margins, but they will also encourage consumers to buy game products because they are easier to prepare. To develop value-added products market research is necessary in order to establish a niche market. A game processing plant in the Karoo currently manufactures value-added products, including smoked "Springbok Carpaccio" (thinly sliced smoked fillet) and "Biltong bites" (dried meat). These products are mostly aimed at the restaurant market, with the objective of introducing them to the retail market at a later stage. It is possible to utilise entire carcasses with innovative product development. Products ranging from liver pâté, liver sausage and tripe to dog food can be produced (Gouws, 1999).

The game meat industry can benefit from product development research, as new and well-researched products can improve profit margins and interest consumers who are unfamiliar with game in new products. Apart from the game products already available, for example, game meat cuts, sausage and biltong, economic products like game meat patties and tripe can be included in a product range that focuses on the economically orientated consumer. Luxury products such as game meat pâtés, game meat cuts with ready-made sauces and cured cold meats can be introduced. It is also important that recipes and information on game meat be supplied with a game meat product, as consumers need to be educated on the properties and uses of game meat. In order to optimise the amount of profit obtained per carcass, off-cuts and bones of game can be used in canned minced or cubed dog food. Further techniques for the processing of meat as

suggested by Pietersen (1993) include curing, smoking, emulsifying and fermentation. The low fat content of game meat makes it ideal for use in emulsions and cured meat products.

3.7 Packaging and labelling

It is necessary to package game meat effectively in order to stabilise the product to the varying conditions it may be exposed to. Vacuum packaging is very effective at reducing lactic acid bacteria and pseudomonad counts (Skinner & Louw, 1996). Jansen van Rensburg (1997) recommends vacuum packaging for long ageing periods of five or more days. Seman, Drew and Littlejohn (1989) studied the effect of packaging on extended chilled storage on venison and found that loins vacuum packaged for 12 to 18 weeks in chilled storage still resulted in a product of acceptable quality. In this study modified atmosphere packaging resulted in no additional benefit.

According to Jansen van Rensburg (1997) South African game meat for the export market is packed in shrink-vacuum packaging material. The product is sealed, packaged and then shrunk in boiling water for 0.5 - 1.5 s. These sealed products are then packed into 10 kg carton boxes, frozen and stored at 5°C.

In a study on beef colour and packaging Carpenter, Cornforth and Whittier (2001) found that packaging of meat played an important role in consumer buying behaviour of meat, but that it had no influence on consumers' perception of taste.

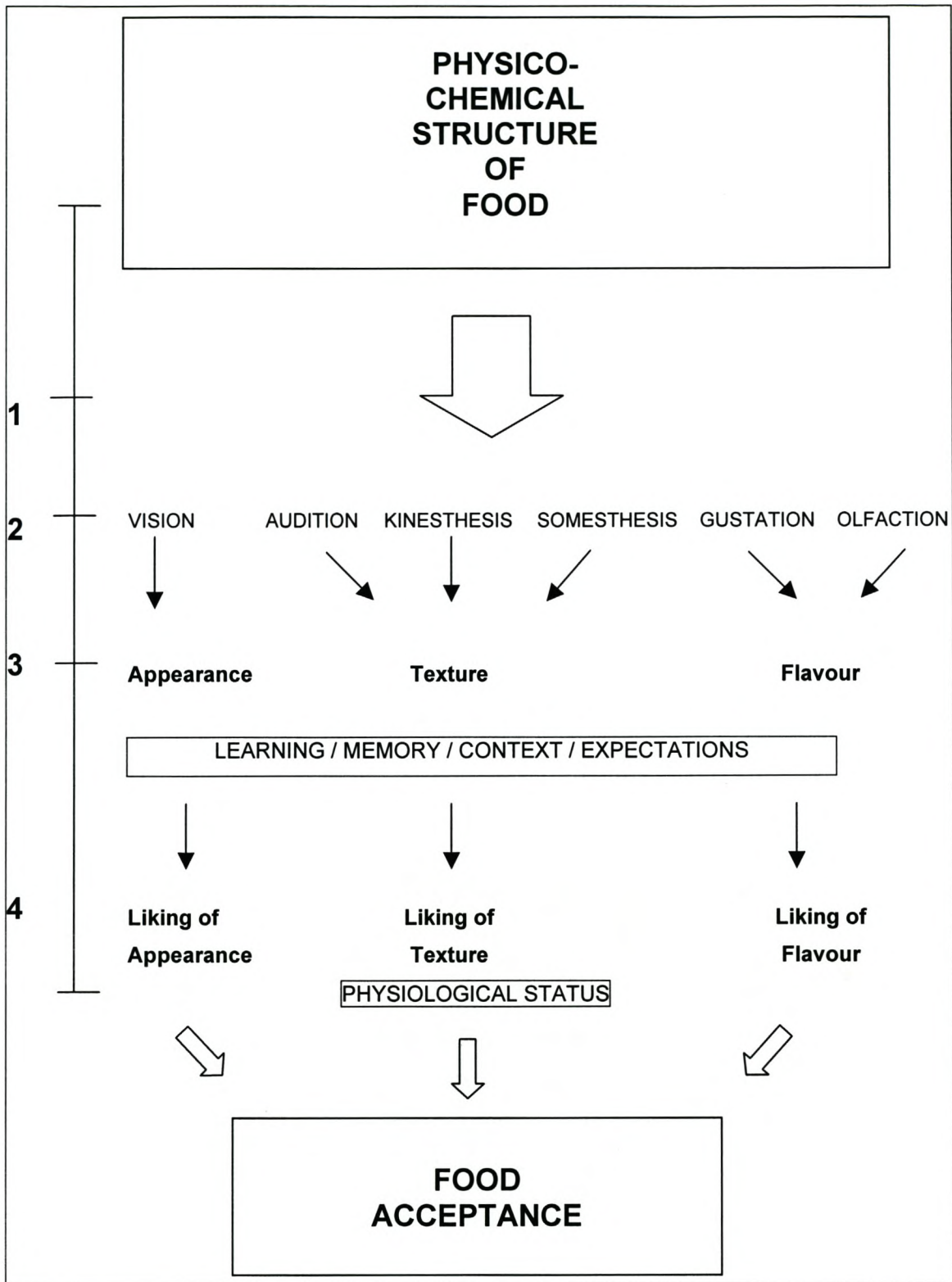
Sophisticated packaging and quality labels can be successfully used to signal superior quality to the consumer. Labels assist uninformed consumers in their buying decisions; they assist in creating an increased perception of a product's quality and create expectations (Van Trijp, Steenkamp & Candel, 1997). As an example of this, Meiselman and MacFie (1996) reported that consumers rated 75% lean meat as tasting better than 25% fat meat. According to Issanchou (1996) a label that depicts traditional production methods (e.g. meat that is cured by the farmer on his farm) induces high expectations of the quality of the product by the consumer. Labelling of meat products can be used as a quality cue to a product, but must then be accompanied by an experience of perceived quality.

4. CONSUMER BEHAVIOUR AND FOOD MARKETING

According to Grunert, Harmsen, Larsen, Sørensen and Bisp (1997) consumers are believed to be becoming less predictable in their behaviour as consumer demands become more fragmented and less consistent. Consumer behaviour cannot only be explained in terms of what consumers prefer to buy, but also in terms of what is available. According to Dransfield, Zamora and Bayle (1998) consumer perceptions of meat and other food not only depends on their inherent properties, but also on the way in which they interact with immediate external factors and previous experiences of the consumer. This section will discuss the interrelation between consumer behaviour and the marketing of food products.

4.1 Food preferences

Meiselman and MacFie (1996) developed a diagram illustrating the sensory, perceptual and hedonic stages involved in the process of food acceptance. This model of acceptance (Fig. 5) can explain preference of different food types by different people.



1= Physical, 2=Sensory, 3=Perceptual, 4=Hedonic

Figure 5

Stages involved in the process of food acceptance at consumer level (Meiselman & MacFie, 1996)

As illustrated in Figure 5, the experiences involved in the acceptance of food are interrelated. Stage one is the physical dimension. This dimension involves the actual physico-chemical structures of different foods. In stage two, the sensory stage, food is perceived by the senses. These senses include vision (sight), audition (hearing), kinesthesia (viscosity), somesthesia (touch), gustation (taste) and olfaction (smell). Distinctions between the intensity of sensory experiences are influenced by the quality, magnitude and duration of these experiences. These senses all work together to form a perception of the food that is experienced. Perception is the conception and belief which nature produces by means of the senses, whereas sensation is the feeling that goes along with perception. This perception is formed by the appearance, texture and flavour of the food (stage three). During this stage the sensed experiences of the food and the concluding perceptions are memorised in the brain to be used in future experiences with a specific food. The perceptions formed in stage three of this model can either be positive or negative for the three perceptual components of the food, appearance, texture and flavour. If one of these perceptual components is unacceptable to a consumer, the result can be that the consumer does not accept a food type. However, if all three of these perceptual components are perceived as positive (stage four), this will lead to a hedonic acceptance of a food type. The word hedonic means: "having to do with pleasure". It is an abstract concept of pleasure or displeasure, accompanying an affective experience. The sensory, perceptual and hedonic dimensions of experiencing food work together to form a liking or disliking of a food product. All of these are influenced by external factors that influence buying behaviour (Meiselman & MacFie, 1996).

The above model of food acceptance (Meiselman & MacFie, 1996) provides a simple explanation of preferences for food. The acceptance of food is, however, not always as uncomplicated as this model suggests. In many instances one or more of the sensory qualities (stage two) of a food may be less acceptable to a consumer, while the rest of the sensory qualities are so highly acceptable that the less acceptable qualities are disregarded or can even be seen as typical of a food product, and therefore acceptable, for a specific food type. It can thus not be concluded that if any sensory quality of a food is unacceptable to a consumer then that specific food will necessarily be unacceptable.

4.2 Consumer buying behaviour

The factors that influence the buying behaviour of consumers will be discussed in this section. Schiffman and Kanuk (1997) created a model (Fig. 6) of consumer decision making comprising three stages, namely input, process and output. The input component of this model explains the external influences that serve as sources of information to the consumer, while the process component of this model indicates the decision-making process. The output component explains what happens after a consumer has made a decision. Each of the stages in this model affects future decision making (Schiffman & Kanuk, 1997).

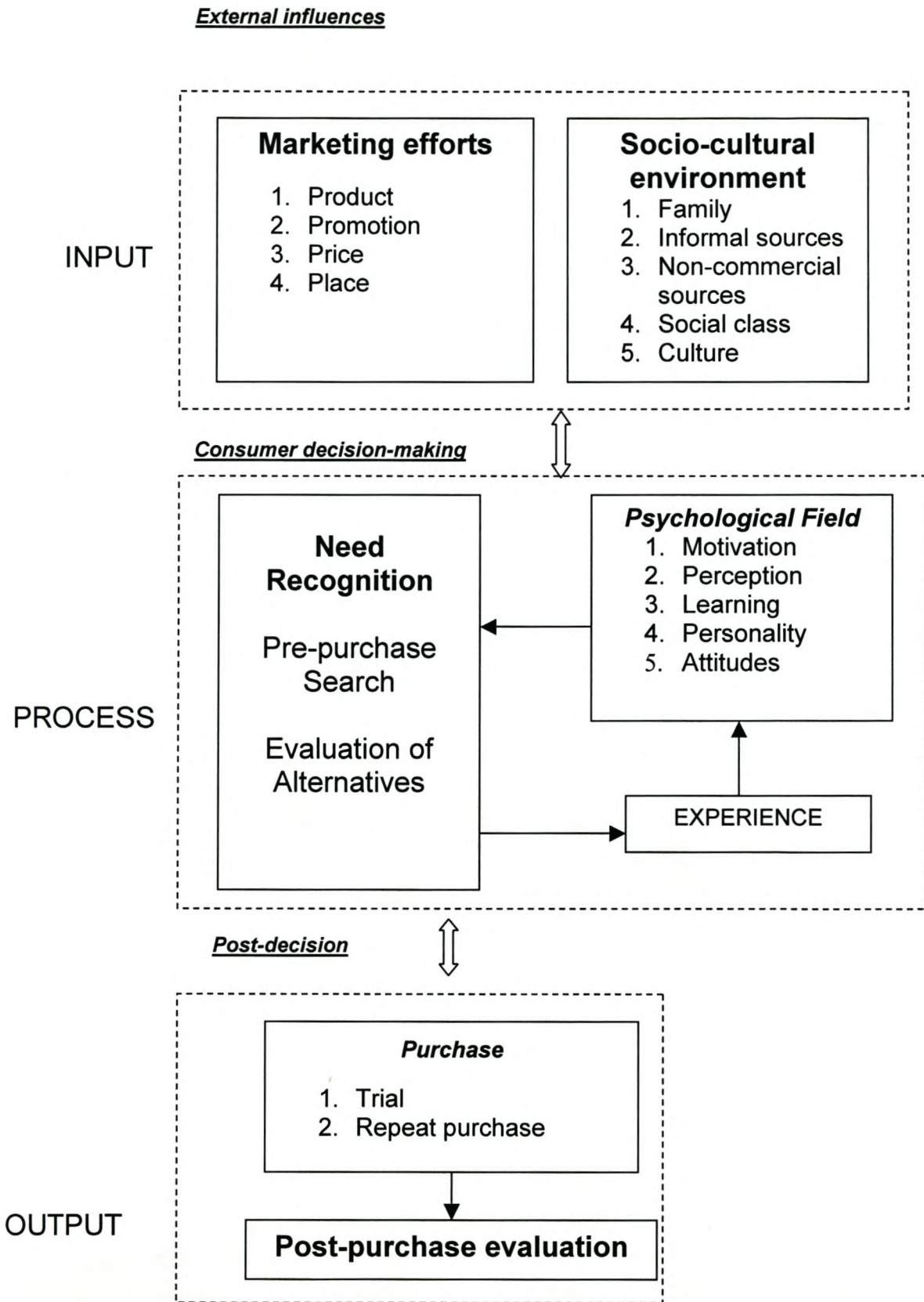


Figure 6

A basic model of consumer decision making (Schiffman & Kanuk, 1997)

4.2.1 *Perceived quality of food*

According to Meiselman and MacFie, (1996) acceptance and perceived quality of food is formed first by its taste or flavour, then by the texture and lastly by the appearance. Van Trijp *et al.* (1997) define perceived quality as the consumer's perception of the fitness for use of the product with respect to its intended purpose, relative to alternatives. Steenkamp (1997) concludes that consumers need to decide upon the criteria on which they evaluate alternative products. In a study on the relative importance of evaluative criteria in seven European countries, Steenkamp (1997) found that product quality, price, brand name, freshness and guarantee were rated by consumers as the most important criteria that formed their perception of a product.

The perception of quality is clearly explained by Dransfield (2001). According to Dransfield (2001), most quality concepts are based on the individual and concern quality expectation as well as actual experienced quality. A consumer develops an expected quality perception of a product and if this expected perception is satisfactory, the consumer will buy the product and then experience its quality. The quality that was experienced will be recalled when the consumer next buys the product and will therefore influence the future expected quality and purchase of the product. Expected quality therefore consists of the perceived quality of a product and a "credence factor", which is what a consumer believes is the value or risk associated with a product. Information that is supplied with a product, for example, a label that indicates that a product is good for the environment, could be a credence factor, because the consumer cannot verify it. Credence factors, however, are based on attitudes, information and experience of the consumer and will not always have an impact on an individual. Branding and labelling of food products can reduce consumer concerns by reducing the consumer's dependence on credence qualities.

4.2.2 *Consumer traits*

Food constitutes an important form of social exchange and is in most cultures part of ceremonial traditions and beliefs. Eating patterns, eating habits and socio-cultural beliefs influence the way we eat and the way we perceive food and eating. It is, however, impossible to pinpoint what differentiates one consumer from another, because so many variables play a role in the way we perceive food. According to Abdel-Ghany and Sharpe (1997), consumer behaviour is related to ethnicity, as spending patterns among different ethnic groups differ significantly. According to Dransfield (2001) consumers often quickly decide which products to buy, but take much longer to rationalise their choice, if asked to do so.

4.2.3 *Consumer attitudes to health and food*

According to La Trobe (2001), people are becoming increasingly concerned about the quality and safety of the food they are consuming. The changing attitudes and perceptions of consumers regarding food and health is a complex area of study. Not only personal issues play a role in changing attitudes and perceptions of consumers, but also external issues specific for each individual consumer. According to Kastner *et al.* (2001), consumers want a consistently palatable product that is safe, convenient and affordable. Armitstead (1998) studied the trends in consumer attitudes to health and food and listed the following trends that affect the food industry and consumers alike.

- Consumers see health as a macro concept and are moving away from the 1990s' obsession with individual food items and issues. Consumers value a healthy lifestyle but prefer to lead a balanced lifestyle rather than restricting themselves.
- "Convenience foods" has become a permanent part of most consumers' lives.
- Due to outbreaks of BSE (*Bovine Spongiform Encephalopathy*/Mad Cow Disease) in the 1990s a general decrease in beef sales is evident. There is, however, no evidence that suggest a complete move away from meat and consumers still regard meat as an essential part of a healthy diet.

According to Steenkamp (1997) a number of universal trends in food consumer behaviour can be identified due to international demographic developments, increases in tourism, emergence of global marketing strategies, rapid dissemination of information through mass media and government attempts to influence food consumption. Steenkamp (1997) identified some of these international trends as follows:

- Consumers are seeking to economise on products that are less important in order to allow themselves more important pleasures. For example, consumers buy in-store brands for necessary grocery items, where as they buy exotic, gourmet and ethnic items for unnecessary pleasures.
- Increased fragmentation of food markets is taking place. Consumers want to distinguish themselves from others by buying unusual products at unusual places.
- Because of the growing number of families that consist of two earning parents, time is becoming an important factor in preparing foods. Convenience food products are therefore becoming essential rather than a luxury.
- Health concerns are a growing trend, because a large number of the world's population consists of ageing people who have more health problems than younger people. Older people are therefore often interested in "health" products.
- Environmental and ethical concerns are a growing trend. Consumers will increasingly question production processes.
- Information Technology (IT) makes it easy for consumers to shop in the comfort of their homes at any time of the night or day. IT will also become a powerful marketing tool for food companies.

According to Steenkamp (1997) more consumers will regularly eat at restaurants or take-away restaurants.

It is important for food producers and marketers to study international consumer trends as they provide opportunities for new developments, as illustrated in Table 9.

Table 9

Trends in international consumer behaviour and related market opportunities as depicted by Steenkamp (1997)

Trends	Opportunities
Economic brands versus luxury products	Creating in-store brands Developing gourmet, ethnic and exotic foods Developing luxury food products
Increasing market fragmentation	Branding products Developing a wider assortment of products Developing value-added products
Growing time pressure	Convenience products Frozen foods Ready-to-eat foods Gas/vacuum-packed foods
Growing health concerns	Low-kilojoule and light products Low-cholesterol products Natural products Fresh food products
Growing environmental and ethical concerns	Free-range meat Natural production Selling of regional products
Information technology	Increased importance of logistics Decline of market power of traditional retail chains

4.2.4 Food marketing

Marketing can be defined as the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organisational goals (Lamb, Hair & McDaniel, 2001). According to Meisinger (2001), selling and marketing are two very distinct and different concepts, as selling is simply defined as taking orders for a product, whilst marketing can be defined as generating a profit by managing the resources and activities which will ascertain and fulfil the needs and desires of people who buy products and services. The marketing mix consists of price, product, promotion and place. These components will be discussed in the following paragraphs.

4.2.4.1 Price

Price is that which is given up in exchange to acquire a good or service. Consumers often consider price to be the most important variable when making buying decisions. Price is compared to the perceived value of a product. Unlike what many dealers believe, the value of a product is determined by consumers and not by dealers (Lamb *et al.* 2001). Price relates to the exchange of value for money and also includes specials and terms that can assist a product in becoming more competitive in the marketplace (Meisinger, 2001). According to Dransfield (2001), consumers around the world are generally becoming wealthier. An increase in wealth is usually associated with an increase in meat consumption.

Dransfield *et al.* (1998) studied the effect of information and price index on the consumer selection of steaks and found that consumers preferred buying higher-priced steaks to lower-priced steaks when they had no knowledge of the eating quality of the steaks. After tasting the steak, consumers chose the most tender meat, regardless of the price. Consumers are not prepared to pay more for meat when basing their judgement solely on appearance, but would pay more for a guarantee of quality. According to Issanchou (1996), price is considered a key element in the perception of the quality of a product, as the perceived quality of a product is valued in comparison to that of other products.

According to Steenkamp (1997), the price elasticity of demand for food products is usually negative, meaning that consumption of food decreases with price increases. Consumers react more intensely to changes in the prices of individual food items (e.g. pork or beef) than to price changes in food categories (e.g. meat products), as it is easy to use another (less expensive) product within a product range.

Schiffman and Kanuk (1997) and Verbeke and Vieane (1999) suggest that consumers rely on price as an indicator of product quality. This can lead to consumers perceiving that less expensive products are products of lower quality. It is therefore important to include other information associated with perceived quality (e.g. branding) in a marketing plan to counter negative perceptions associated with lower prices.

4.2.4.2 Product

A product can be defined as everything, both favourable and unfavourable, that a person receives in an exchange. Products can be classified as either consumer goods or business goods. Game meat is a consumer good and can further be classified as a speciality product (Lamb *et al.*, 2001). The characteristics that differentiate one product from another include the features, benefits, performance and uniqueness of the product (Meisinger, 2001). According to Issanchou (1996) it is important to differentiate between food and other products. Given that food products are ingested and perceptions surrounding quality are arbitrary, labels or stamps of quality are essential to create positive perceptions regarding a product.

4.2.4.3 Promotion

Promotion can be defined as marketing communications that inform, persuade and remind potential buyers of a product, in order to influence an opinion or elicit a response. Promotion involves personal selling,

advertising, sales promotions and public relations (Lamb *et al.*, 2001). According to Meisinger (2001), promotion involves the marketing activities that build awareness, establish confidence, gain exposure, improve merchandising and offer incentives. Schiffman and Kanuk (1997) suggest that consumers often use the volume of advertising of a product as a measurement of the quality of the product. Products that are not new, but are extensively promoted, can therefore be perceived as being of a higher quality than a similar product that is not as extensively promoted.

4.2.4.4 Place

It is important that an effective channel of distribution is set in place for any product. A channel of distribution can be defined as a set of interdependent organisations that ease the transfer of ownership as products move from producer to business user or consumer (Lamb *et al.*, 2001). According to Meisinger (2001), the place component of marketing has to do with the channels that make a product available to the consumer.

4.2.4.5 The marketing mix and game meat

Jansen van Rensburg (1992) developed a proposal for the marketing of game meat and concluded that the target market for game meat sales is the white, high-income population group. He listed suggested activities for game meat marketing regarding the marketing mix (Table 10).

Table 10

Marketing activities for game meat as suggested by Jansen van Rensburg (1992)

Marketing mix and suggested activities			
Price	Product	Promotion	Place
Define product cost	Market carcasses as well as cuts	Personal involvement in sales	Direct and indirect marketing
Define product demand	Design attractive packaging	Sales promotions	Centralised marketing
Evaluate competition	Supply recipes	Advertising	Road and train transport
Define minimum proposed price	Develop products and processing	Incisive strategies	

4.2.5 The ABC of marketing

According to Meisinger (2001), affluence, brands and convenience are the three most important components in marketing. Meisinger (2001) notes that the average impoverished person in the USA today has a higher income than the average population of the previous generation. This influences the way in which consumers spend their money. Brands are important tools a company can employ in order to differentiate its products. Consumers nowadays expect convenience, because current lifestyles lead to the notion that time is money.

4.2.6 Branding

According to the *Oxford Dictionary* (Sykes, 1984), a brand can be defined as a trademark. Groves (2001) studied consumer perceptions regarding the authenticity of food and found that branding is associated with authenticity and quality and evokes trust in consumers. Steenkamp (1997) suggests that branding is an important mechanism to add value to food products.

According to Meisinger (2001) the concept of branding is “exploding” all over the world. Branding a product aids in differentiating it from existing products and creates a reputation that assists in the marketing of a product. Schiffman and Kanuk (1997) suggest that a positive brand image creates consumer loyalty and strengthens positive beliefs consumers have of a product. According to Meisinger (2001) the New Zealand meat industry markets meat with the aid of quality branding. They assign quality standards to their brand, involve the National Heart Foundation for approval of their meat and also promote improvement of the conditions under which the animals are reared.

Quality branding involves assigning quality attributes to meat. According to Meisinger (2001) the Meat and Livestock of Australia uses nutrition, convenience and healthfulness to build the image of their brand. They identified that consumers of Australian beef assess beef quality by its tenderness and therefore classify their meat products in different guaranteed grades of tenderness.

According to Issanchou (1996) branding is a more efficient method of informing consumers of the positive qualities of a product than, for example, nutritional composition labelling, as branding does not involve as much reading and understanding from the consumer. Branding can therefore be used very effectively in the promotion of game meat.

4.3 Consumer perceptions of meat quality

Perception is described by Schiffman and Kanuk (1997) as “how we see the world around us”. It is the process by which an individual selects, organises and interprets stimuli into a meaningful and coherent picture. According to Issanchou (1996) food quality is not an inherent characteristic of food. The perceptions consumers have of a product can be assigned to physical characteristics of the product, communication surrounding the product (marketing) or both of these factors in combination. Perceived quality is, furthermore, not only dependent on a person, but also on the context in which food is consumed. Canned meat, for instance, may be highly acceptable for a family picnic, while it would not be acceptable for a formal dinner.

Issanchou (1996) further argues that perceived quality could change with consumption of a product. There are three stages in the perception of quality and they can be explained as follows:

- Perceived quality prior to purchase: Perceived quality at this level is largely dependent on beliefs and attitudes of the consumer. These beliefs and attitudes depend on the culture (social, personal and psychological factors) and previous experience of the consumer.

- Perceived quality at the point of purchase: Consumers here rely on intrinsic cues (physical qualities of the product) and extrinsic cues. Quality cues are used to infer the expected quality attributes (e.g. labels are read). During this stage, price is also used to evaluate perceived quality.
- Perceived quality upon consumption: The sensory attributes of products are the most important factor upon consumption of a product. When expectations are disconfirmed, the future expected quality will be influenced.

According to Bakula and Kedzior (2001) the sensory features of meat are the most important qualities when consumers choose meat. The choice and purchase of meat is mostly determined by its general appearance, taste, smell and freshness. According to Kupiec (2001) nutritional concerns and worldwide condemnation of animal fats contribute to more and more selective purchasing patterns by consumers. Although the perception of products can be greatly influenced by what consumers expect, flavour is still the most important determinant influencing food acceptance.

Rhee, Oltman and Han (2000) studied consumer perceptions and knowledge of goat meat. The respondents were questioned on their perceptions of goat meat. An information sheet on the nutritional value of goat meat was then given to them and 61.5% of them indicated that the information they received changed their perception of goat meat. Fifty percent of the respondents in this research indicated that they would be more inclined to purchase goat meat after acknowledging the information supplied. The respondents also indicated that they would be more likely to buy goat meat if they were provided with cooking instructions and promotional offers.

According to Schiffman and Kanuk (1997) consumers form perceptions of a product based on its intrinsic and extrinsic qualities. The intrinsic qualities are those that are inherent to a product, for example, the colour, size, flavour, etc. The extrinsic qualities are, for example, the price, brand image and service associated with a product. In order to change quality perceptions of a product, it is therefore necessary to improve the intrinsic as well as the extrinsic qualities of a product.

Due to the spread of foot-and-mouth disease, the occurrence of dioxin in poultry and BSE (*Bovine Spongiform Encephalopathy*/mad-cow disease) in the 1990s, consumers are increasingly concerned about the safety and quality of meat products. This has brought about a considerable decrease in meat consumption around the world (Dransfield, 2001). Verbeke and Vieane (1999) studied Belgian consumers' perceptions on game meat and identified a drastic decline in beef consumption in Belgium. Verbeke (2001) revisited the research of Verbeke and Vieane (1999) and found that two years after their research, consumer perception of beef improved in such a way that consumption of beef increased significantly, whilst the consumption of pork and poultry decreased. This could be ascribed to the "image restoration campaigns" the beef industry employed to market beef. It is apparent that consumer perceptions of meat quality can be changed in order to increase consumption.

4.4 Consumer perceptions of game meat

Levie (1973) states about game meat: "These products (game meat) are usually expensive and in most cases the meat is tough and has a very gamey flavour. Though not intended for the general palate, game meats may be used to create romance for gourmet dinners." The game meat industry in South Africa regrettably suffers from many misconceptions like the above. In a study on the acceptability of ground venison in the USA Britten, Armes, Ramsey and Simpson (1982) found that consumers rated venison as very acceptable compared to beef. Brown (1975) found that 74.3 % of black South African university students indicated venison as an acceptable meat type.

Jansen van Rensburg (1992) found that an average of 43% of South Africans have eaten game meat, while 54% of South Africans indicated that they would buy game meat if it is available to them. According to Radder (2001) the typical game meat eater is a male foreigner or South African businessman over the age of forty. Reliable current figures on consumer knowledge and consumption of game meat is not available in South Africa, and it is therefore not possible to establish the perception of consumers regarding game meat.

4.5 Meat marketing

It is important to acknowledge that the "marketing" of meat is not the same as the "selling" of meat. Marketing of meat involves finding out what customers want and then developing the required services or products (Meisinger, 2001).

4.5.1 Marketing of game meat

South Africa differs considerably from other game meat/venison producing countries in that utilisation of game is a private industry. International venison production and marketing are usually organised by a central organisation (Conroy & Gagher, 1982). In South Africa there are few large production plants and there is no central organisation to market and control the cropping and production of game meat. It is very difficult for individual farmers to market and sell their game meat profitably, because the volume of meat a single farmer can supply is not sufficient to interest wholesalers.

In order for game meat to be marketed more successfully, production plants need to be established in regions where game farms are situated. In the Thabazimbi region a game processing plant has been established with the aid of the University of Potchefstroom. Farmers in this area sell their game to the plant, where the meat is processed. Products are then transported and marketed under one label. The aim of this processing plant is to process 2000 t of game meat per year (Gouws, 1999).

It is vital that the South African game meat industry learn from the success of other countries. In Australia and New Zealand market research is combined with scientific product research in order to establish product and consumer information. This information is then used to plan promotional activities. Research done by the Australian crocodile industry recommended the following strategies that can also be applied to the marketing of game meat in South Africa (Warfield, Ford & Mitchell, 1996):

- Promotional campaigns must be conducted in order to promote products as an exciting food type;
- Target markets should at first be travellers, regular restaurant diners and wholesalers, and then be extended to retail consumers;
- Information and training should be provided;
- Tender and tougher cuts ought to be sold separately and priced according to their level of tenderness;
- Promotional activities should be concentrated around point of sale activities and public relations (e.g. news articles in food publications).

According to Jansen van Rensburg (1992) 84% of the 366 farmers consulted in this research were in favour of better marketing of game meat in South Africa. Hashim, McWatters, Rimal and Flethcer (2001) studied the effect of labelling and display of informative posters on consumer purchase behaviour for irradiated beef products and found that the information supplied through these methods was not sufficient to educate consumers on the benefits of the products on sale. According to Pauw (1993) the development of the South African game meat industry will depend on the joint forces of producers and processors in order to provide quality products, maintain favourable prices and conquer market niches.

It is evident that the game meat industry needs to build a positive image regarding the qualities of game meat in order to market it successfully. Groves (2001) studied consumer perceptions of authentic British foodstuffs and found that consumers regarded food as authentic if it (1) is unique to their country; (2) can be culturally and traditionally associated with them; (3) is characteristically produced and processed; (4) is associated with the presence of authenticity; and (5) has desired extrinsic product attributes. It would be possible to build the marketing of game meat around the idea of authentically South African by marketing it as a uniquely South African product, associating it with the diversity of South African cultures and informing consumers on the production and positive quality attributes. Creating a quality brand of game meat would also enhance the authenticity of game meat.

4.5.2 Marketing and production of venison and game meat in other countries

Health regulations, market facilities, advertising, consumer prejudice, competition with other meats and irregularity of supply are a few of the problems that marketers and producers of game meat and venison have to face (Von La Chevallerie, 1970).

According to Sharman (1983) deer marketing in Britain is segmented but a co-operative marketing system is also used, operated by the British Deer Farmers' Association. Mobile slaughterhouses that move from farm to farm are also used. These slaughterhouses open routes for deer sales, as animals are also inspected. Britain also has permanent slaughterhouses where animals can be sold, slaughtered and then marketed by the slaughterhouse owner. This method is only possible because deer in Britain are domesticated, where as South African game is free-running.

The venison industry in New Zealand has expanded rapidly during the past twenty years. Permanent deer slaughterhouses with special provisions for slaughtering deer are used for meat productions. Export quality

venison is marketed under the trademark “ZEAL” for established markets and “*Cervena*” for emerging markets. The New Zealand Game Industry Board markets and promotes the country’s venison. The New Zealand Deer Farmers’ Association develops markets in co-operation with exporters and focuses on the international hotel and restaurant trade. Marketing in retail stores is, however, also undertaken. The success of the New Zealand venison industry is due to their marketing strategy of providing a reliable, branded product, internationally registered, that is constantly available in New Zealand. Venison New Zealand (VNZ) is responsible for the marketing of game meat and already has over 800 different product specifications in its product range. Venison quantities for the export market are limited in order to ensure that it will remain a speciality gourmet item. Marketing experts in New Zealand are contracted to do ongoing research and development on venison in Europe and America (Hoffman & Bigalke, 1999; Jansen van Rensburg, 1997).

Game animals in Australia are slaughtered at slaughterhouses where special provisions are made to accommodate game (Sharman, 1983). Australia exports deer as well as kangaroo. The Australian government strictly controls the cropping of kangaroo. Animals are tagged with a registered ear-tag and no cropped animal is processed if the ear-tag is absent. The Australian crocodile industry has completed thorough market and product research to provide them with an overview of the crocodile meat industry. Promotional campaigns are planned around the information obtained from the market research (Warfield *et al.*, 1996). In the rest of Africa game meat also plays an important role in market economies and can even be a more lucrative enterprise if the illegal trade of bush meat can be controlled. The average income from game ranching activities in Southern Africa was summarised (Table 11) by the WWF (2001).

Table 11

An overview of the annual game production activities in Southern Africa as estimated by the WWF (2001)

Country	Activity				
	Game ranching (US\$)	Cropping for meat sales (US\$)	Safari hunting (US\$)	Resident licensed hunting (US\$)	Cropping for animal control (US\$)
Botswana	91 982	213 350	272 595	1 209 720	5 865
Mozambique	0	0	78 386	152 152	0
Zimbabwe	1 771 248	0	117 760	0	0
Zambia	78 400	1 031 400	275 200	276 200	288 000
Malawi	9 000	0	0	22 819	92 533
Tanzania	0	423 600	255 474	287 097	175 047
Kenya	554 826	0	0	4 648	10 922
Total value	2 505 456	1 668 350	999 415	1 952 636	572 367

The total annual value of game production for these countries amount to US\$7 698 224 (approximately R76 982 240). This amount is meagre in comparison to the potential market if game animals were utilised optimally.

4.5.3 Import and export market for game meat in South Africa

Export of game meat to Europe was initiated in 1972. Carcasses are subject to sanitary import requirements and are inspected by stock inspectors. Requirements for cooling and methods of slaughtering must be followed. Specific requirements exist for some countries, but carcasses should be certified "fit for human consumption, free from foreign substances and derived from a foot-and-mouth disease-free area". Warthogs and bushpigs may not be exported, because of their susceptibility to African swine fever (Conroy & Gaigher, 1982).

South Africa developed a significant export market for game meat in the 1980s. Helicopter cropping was financially viable and very efficient, and good hygiene standards could be maintained by this method. The total annual export of game was then around 900 tons of carcasses, with bone in. Jansen van Rensburg (1997) and Hoffman (2001a) recorded the export totals for game meat to Europe as illustrated in Figure 7.

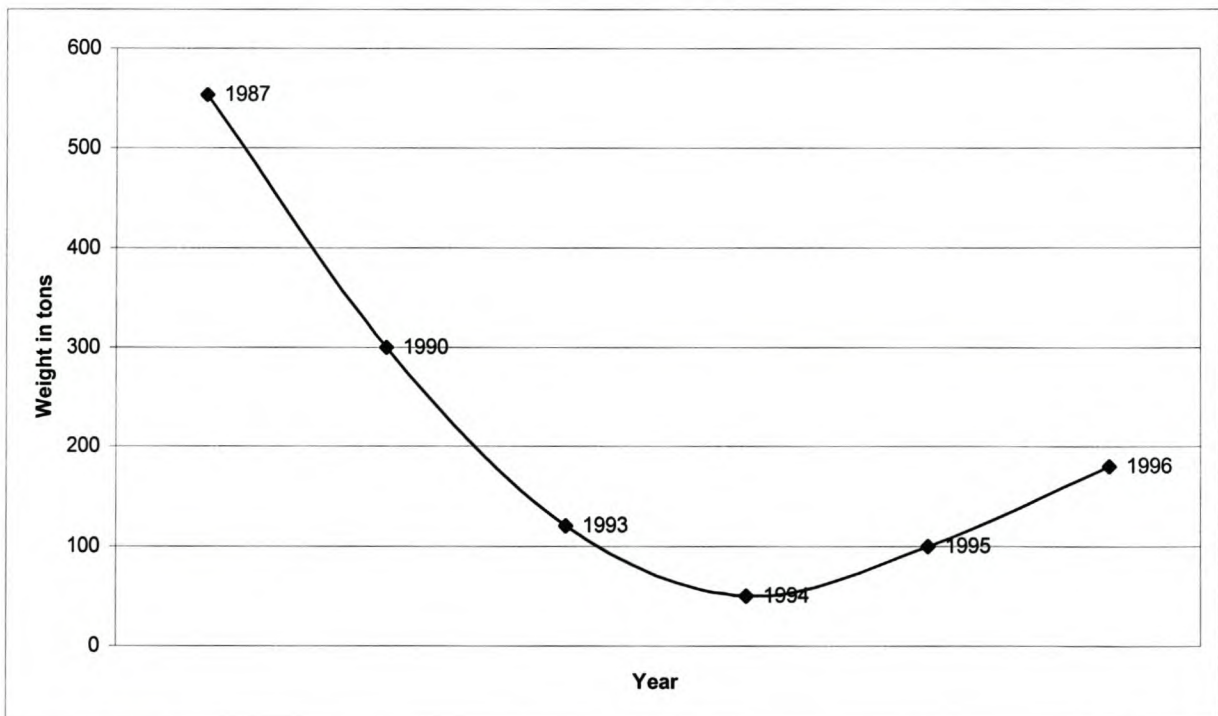


Figure 7

South African game meat export totals as recorded by Hoffman (2001a) and Jansen van Rensburg (1997)

In 1996 European veterinary authorities restricted game meat imports to deboned meat cuts. This had a serious economic implication on exports as deboning reduces carcass yield by almost 30%. Adding to this problem is the fact that importers manipulate the market, often resulting in product discrepancies. Strong export competition exists from countries with well-developed venison export structures, for example, New

Zealand, Australia, Germany and Scotland. Between 20 and 30 venison export companies already existed in 1993 in New Zealand, whereas South Africa then had only two game meat export companies (Jansen van Rensburg, 1997).

4.5.4 Current utilisation and marketing of game meat in South Africa

Because the game meat industry is still growing in South Africa, it is important to obtain as high a financial return as possible for game meat. Game meat is considered a luxury product and therefore fetches high prices. Individual farmers' sale of game carcasses is not subject to any regulation (Conroy & Gaigher, 1982). According to Hoffman (2001a), the major game meat-processing plants in South Africa seldom sell more than 5-8% of their production locally.

Eloff (2002) studied the extent of the game industry in South Africa and calculated that the gross income that the South African game industry made in the year 2000 amounted to R843 million (Table 12).

Table 12

Profits made by the South African game industry in the year 2000 through different utilisation methods (Eloff, 2002)

Utilisation activity	Gross profit in South African Rand
Biltong hunting	450 000 000
Trophy hunting	153 000 000
Live game sales	180 000 000
Eco-tourism	40 000 000
Game meat sales	20 000 000
TOTAL	843 000 000

Eloff (2002) indicated that the prices of some game animals (e.g. springbok and warthog) at live game auctions are decreasing. Game ranchers will therefore need to find different utilisation methods to increase profit margins. This, combined with the worldwide tendency towards natural food products, and the fact that the South African game industry operates as a free-market enterprise, can create lucrative opportunities for the game meat industry.

It is apparent that basic information, obtained from goal-oriented research, is urgently required for producers and processors of game meat in South Africa to acquire knowledge of game products, markets and customers. It is essential that conservationists, commercial farmers, researchers and rural communities all be involved in game research and development. Quality standards need to be set in order to produce quality game meat products. South African game meat has the potential of distinguishing itself from farmed venison from New Zealand, Australia and Europe, as game in South Africa is still untamed and game meat can be seen as organic and exotic (Hoffman & Bigalke, 1999).

5. CONCLUSIONS

It is apparent from the literature reviewed that there are endless research opportunities in the field of game animals and their utilisation. Research regarding the sensory qualities as well as full nutritional analyses for every game species will aid in the marketing of game meat, as consumers could then be better informed on the qualities of game meat. Standardisation of game meat cuts will assist consumers in buying game meat. It is foreseen that the establishment of regulations regarding the quality of game meat will improve the quality of the meat available to consumers.

The literature reviewed on consumer perceptions indicated that consumer perceptions of a product could be changed through marketing. It is apparent that today's consumer prefers "healthy" and "safe" meat types. Game meat marketers can explore the possibility of marketing game meat as organic meat, as game meat is an organic product. The fact that game meat is lower in fat than other red meats can be used as a mechanism to promote game meat. The use of branding as a marketing mechanism for game meat could be explored, as branded products are associated with consistency of quality.

Consumer trends and preferences for meat need to be studied continuously in order to identify what consumers prefer. The South African game meat industry should study the successes of the Australian and New Zealand venison industries in order to identify successful marketing strategies. Information regarding consumer perceptions of game meat in South Africa is lacking. In conclusion, it is apparent that the South African game meat industry needs to move away from selling game meat and move towards marketing game meat. Whilst selling implies the ordering and supplying of a product, marketing implies research on the product and the consumer and the subsequent supplying of a quality product to an interested consumer.

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CHAPTER 3

Consumer expectations, perceptions and purchasing of South African game meat: Current consumption and market trends

ABSTRACT

The expectations and perceptions of, as well as purchasing behaviour for, game meat by South African consumers were researched by the survey method with the aid of a structured, self-administered questionnaire. Chi-squared frequencies were used to test for significant influences of data. The research group consisted of 300 South African consumers and included 100 black consumers, 100 coloured consumers and 100 white consumers. The research showed that South African consumers are poorly educated regarding the nutritional benefits and cooking methods of game meat. Just over seventy-three percent (73.2%) of the respondents indicated that they have eaten game meat, whilst 66% of the respondents indicated that they would eat game meat again. Respondents, however, indicated that they are not willing to pay more for game meat than other meat types. Race and educational level were the only two socio-demographic variables that showed significant differences. White respondents and respondents that were in the "post-high school diploma/degree" educational group were better informed on the qualities, cooking- and preparation methods of game meat and were also more likely to buy game meat than either the black or coloured racial groups. The respondents indicated the leanness of meat as one of the most important quality considerations when they buy meat. This provides an opportunity for game meat marketers to market game meat as a low-fat meat product.

1. INTRODUCTION

A number of globally universal trends in food consumer behaviour can be identified due to international demographic developments, increases in tourism, emergence of global marketing strategies, rapid dissemination of information through mass media and government attempts to influence food consumption. Due to the spread of foot-and-mouth disease, the occurrence of dioxin in poultry and BSE (*Bovine spongiform encephalopathy*/mad-cow disease) in the 1990s, consumers are concerned about the safety and quality of meat products. This has brought about a considerable decrease in meat consumption around the world. Younger consumers are tending to consume less red meat and more chicken and pork, due to the negative publicity surrounding red meat and health. Nutritional guidelines place increasing emphasis on reducing the ratio of n-6/n-3 polyunsaturated fatty acids in the diet (Dransfield, 2001). According to Armitstead (1998), consumers are increasingly aware of food issues and health concerns. These growing health concerns have led to the demand for low kilojoule and low cholesterol products. Consumers are increasingly concerned about the environment and are therefore interested in free-range and organic products, as well as products produced by natural production methods (Steenkamp, 1997). According to Hoffman and Bigalke (1999) game meat can be seen as an organic product, as game meat ranching conforms to the requirements for organic agricultural enterprises. These requirements include sustainable soil fertility, minimal damage to the environment, minimal use of non-renewable resources, the enhancement

of biological cycles involving micro-organisms, plants and animals, prohibition of agro-chemical pesticides and the careful attention to the impact of farming on the environment and the conservation of wildlife and natural habitats (Madge, 1995; Lampkin & Padel, 1994).

According to Bakula and Kedzior (2001) sensory characteristics are the most important quality attributes of meat and meat products. Game meat is lower in fat than either beef, pork or mutton and is reported to have an average fat content of between two and three percent (Schönfeldt, 1993; Hoffman, 2000). It is also lower in saturated and higher in poly-unsaturated fatty acids than beef (Viljoen, 1999). Although juiciness of meat is directly related to the intramuscular lipids and moisture content of meat, the moisture level of the cooked product is mainly responsible for its juiciness. The moisture content of game meat compares favourably with that of beef (Jansen van Rensburg, 1997; Von La Chevallerie, 1970). Although game meat is less succulent than beef because of lower levels of fat, it is incorrect to assume that it is less juicy than beef. South African game meat is often perceived to be dry, tough with a dark and unattractive red colour (DFD). This could be as a result of the meat originating from stressed animals (DFD meat). DFD meat also has a poor flavour (Hoffman, 2001). Apart from stress, another explanation for the darker colour of game meat is the fact that game animals are more active than traditionally farmed animals, causing more myoglobin to build up in the muscles, resulting in a darker red colour (Hoffman, 2001). The perception of game meat as a tougher meat type does not correlate with Warner Bratzler shear values. Von La Chevallerie (1972) measured the tenderness of seven game species and found springbok to be the most tender of the seven species, with a shear value of 1181 g/cm. According to Hoffman (2001), shear values for impala are similar to those reported for pigs, thus indicating that the tenderness of game meat is similar to that of pork. Von La Chevallerie (1970) noted that the tenderness of game meat is similar to that of beef.

It is virtually impossible to obtain reliable data on game meat production and consumption in South Africa. Meat from all game animals is generally referred to as venison (Jansen van Rensburg, 1997). It is, however, advisable that South Africa should distinguish game meat from venison, as game animals farmed for meat in Australia, New Zealand, Europe and America originates from domesticated animals, whereas South African game meat originates from wild, free-running animals. The South African game industry operates as a free-market enterprise, with the advantage that it generates opportunities for individual game ranchers and game meat producers. This, however, also creates several problems for producers and consumers alike. In South Africa there are, for example, no standardised cuts or quality standards in place for game meat (Hoffman & Bigalke, 1999). Any individual producers can sell any type of game meat cut or quality. This permits game meat of inferior quality, for example, meat that is pale, soft and exudative (PSE) or dark, firm and dry (DFD), to be sold alongside game meat of good quality. It is also very difficult for individual farmers to market and sell their game meat profitably, because the volume of meat a single farmer can supply is not sufficient to interest wholesalers.

According to Ebedes (2002) game ranching can be defined as the commercialisation and utilisation of wildlife by private landowners. Game ranching is a relatively new agricultural industry in South Africa, but it is already well established. According to Hoffman (2001) the major game meat-processing plants in South Africa seldom sell more than five to eight percent (5-8%) of their production locally. Because the game meat industry is still growing in South Africa, it is important to obtain as high a financial return as possible for game

meat. Game meat is considered a luxury product and therefore fetches high prices. Individual sale of game carcasses by farmers is not subject to any regulation (Conroy & Gaigher, 1982). Eloff (2002) noted that South Africa had over five thousand (5061) exempted game ranches in the year 2000. A game ranch that is referred to as “exempted” must have suitable fencing to keep animals on a ranch and entitles the rancher to utilise game through capture, hunting or trade in live game. Game ranches that are not exempted have to adhere to the Ordinance on the Nature and Environmental Conservation of the Provincial Government (1974) applicable in the area in which the ranch is situated.

The tourist industry in South Africa is growing at a steady pace, because visitors from highly industrialised countries are willing to pay to see wild game in their natural habitat (Hoffman & Bigalke, 1999). This growth in tourism provides many opportunities for game ranchers, as different game enterprises can produce an income (Table 1).

Table 1

Direct and indirect utilisation of game animals in South Africa (adapted from Jansen van Rensburg, 1992; Ebedes, 2001)

Direct utilisation methods	Indirect utilisation methods
Hunting for cropping of game	Game viewing
Game meat production	Game farm lodging / holidays
Trophy hunting	Hiking trails
Biltong hunting	Game photography
Sport hunting	Hunting and nature schools
Safari hunting	Bird watching
Archery and bow-hunting	Sightseeing tours
Culling for export sales	Art and curios
Live carcass sales	
Trophies and hides prepared by taxidermists	

The culling/cropping of surplus game animals is an essential component of wildlife management as most game ranches are without natural predators and animal numbers need to be controlled (Lewis, Pinchin & Kestin, 1997). Because South African game animals are free running, culling takes place by shooting. Correct culling procedures will maintain meat quality, while excessive stress, inaccurate shots, incorrect bleeding and insufficient cooling of carcasses result in meat of an inferior quality (Hoffman, 2001). A potential outlet for these surplus animals is the marketing of game meat on a bigger and, importantly, a more organised scale. The utilisation of game has the potential of benefiting wildlife by providing an economic incentive to conserve it. Warfield, Ford and Mitchel (1996) researched the marketing of crocodile meat in Australia and suggested that exotic meat marketing should be targeted at tourists and restaurants and that

promotional activities should be centred around point of sale activities. It is suggested that a similar strategy be employed for game meat in South Africa.

In a study on the relative importance of evaluative criteria in seven European countries Steenkamp (1997) found that product quality, price, brand name, freshness and guarantee were rated by consumers as the most important criteria that formed their perceptions of a product. Hernández and Seehawer (2002) found that consumers are mostly concerned about the hygiene, safety, organoleptic quality and origin of food, when they judge food quality. Windhorst (2001) and De Montzey (2001) note that consumers are increasingly concerned with the traceability of food products. Consumers want to know where food products come from, who the farmer is and how a product is made (De Montzey, 2001).

In a study on the acceptability of ground venison Britten, Armes, Ramsey and Simpson (1982) found that consumers rated venison as very acceptable compared to beef. Limited research has been done on how South Africans perceive game meat. Jansen van Rensburg (1992) researched the segments of the South African population that have eaten game meat and indicated that twenty-five percent (25%) of the population indicated that they would buy game meat. This information is, however, dated and no research on consumer perceptions of game meat has been done to date.

According to Dransfield, Zamora and Bayle (1998) the perception of meat and other food not only depends on their inherent properties, but also on the way in which they interact with immediate external factors and the previous experiences of the consumer. If a consumer had an experience of game meat of inferior quality, it is unlikely that the consumer will want to buy and consume game meat again. Because virtually no structure exists within the game meat industry, money is not invested in scientific research and market research for game meat, an occurrence that stifles growth within the game meat industry.

Game animals are a natural resource that needs to be utilised in order to sustain it, as animal numbers need to be controlled. Game meat production can provide healthy meat of an excellent quality if correct culling/cropping and slaughtering procedures are practised (Hoffman, 2001). There are no reliable figures of the marketing and consumption of game meat in South Africa. Against this background this research is aimed at studying the perceptions and purchasing behaviour of game meat by South African consumers.

2. MATERIALS AND METHODS

2.1 Research design

In order to assess the marketing and consumption trends of consumers of South African game meat, the survey procedure was used. Data were collected by means of the questionnaire technique. A structured questionnaire was designed for South African consumers. The questionnaire was designed to be self-administered in order to give respondents the opportunity to complete the questionnaires in their own time. The layout, formatting and sequencing of the questionnaire were carefully planned to ensure that the design of the questionnaire contributed positively to the successful completion of the questionnaires. For the same

reason the length of the questionnaire was to be limited to prevent reluctance to respond within the respondent groups.

The questionnaires were developed after an extensive literature review and based upon the dendrograms that were developed. The questionnaire was designed with the aid of the dendrogram technique (Schutte, 1992). A dendrogram is a visual presentation that conceptualises links and illustrates the different issues pertaining to a specific subject. The dendrogram developed for this study provided the structure for the questionnaire and the interpretation of the data as questions were designed to address the issues indicated on the lowest levels of each of the branches conceptualised by the dendrogram (Fig. 1).

As both the purchasing and perceptions of game meat by consumers had to be researched, the dendrograms consisted of three main levels, namely purchasing behaviour, consumer behaviour and consumer traits. Since this study was aimed at investigating the game meat market, the dendrogram was developed surrounding the four Ps of marketing, namely price, product, promotion and place (Lamb, Hair & McDaniel, 2001). These four factors (price, product, promotion, place) were used as a determining structure to organise the factors/concepts that influence the purchasing and marketing of game meat.

Questions were generated around argumentative factors contributing to the research aim. In order to get maximum control over the respondent's frame of reference and to ensure that response categories are in line with logical responses, different types of structured questions were used, for example, open questions, closed questions, rank ordering, semantic differential scales and intensity scales. The questions were arranged in a logical order, with similar types of questions following one another. The questions were refined to ensure that all questions were clear, understandable and unambiguous. The final questionnaires were then translated into the respective languages in which they had to be presented, namely English, Afrikaans and Xhosa.

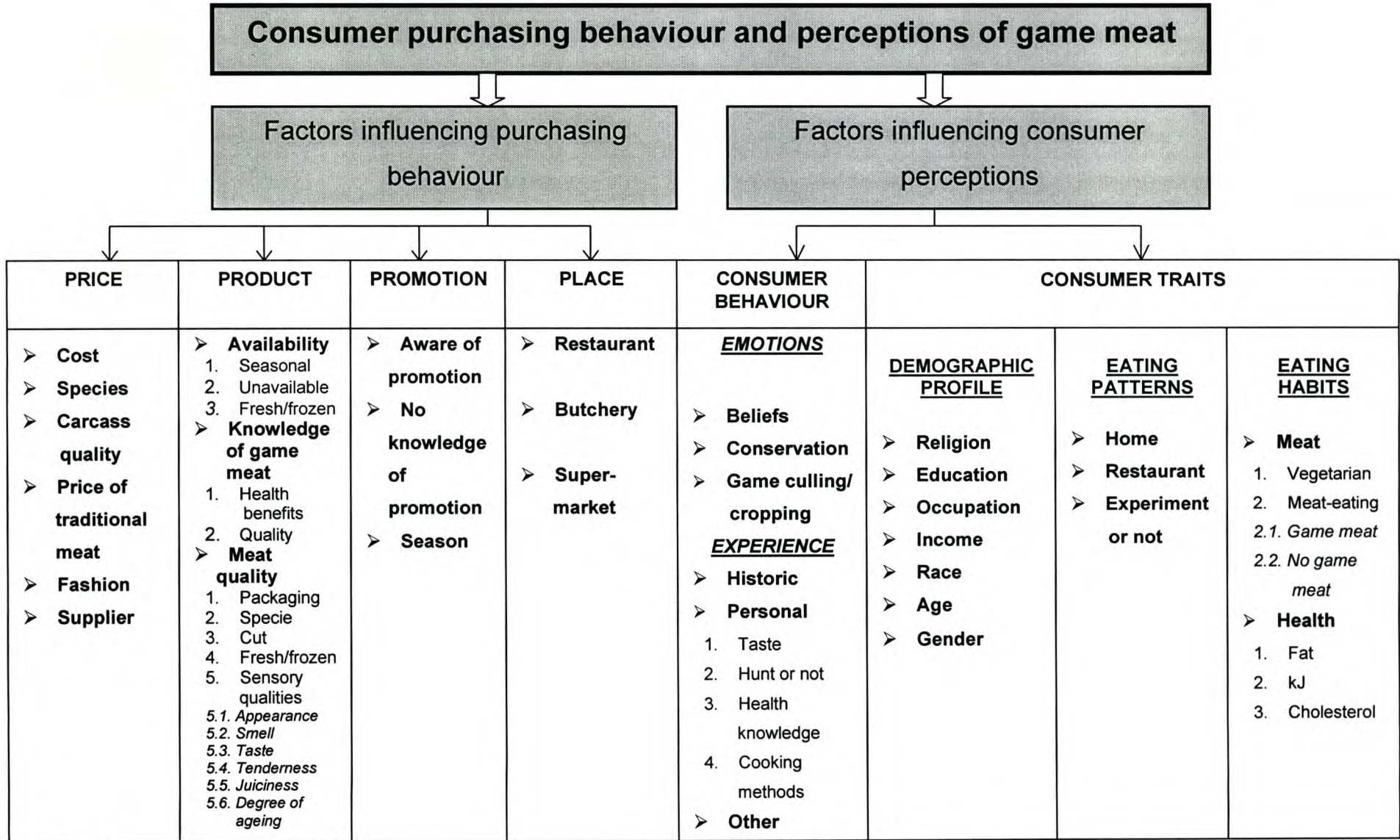


Fig. 1
Dendrogram developed to quantify consumer purchasing behaviour and perceptions of game meat

Formal testing of the questionnaires was done as part of a preliminary study to confirm the validity and reliability of the testing instrument. A two percent (2%) sample of the size of the total respondent group was chosen for this formal testing. All difficulties with the completion of the questionnaires were attended to in order to ensure that the questionnaires could be self-administered and that the translation of the questionnaires did not produce ambiguities.

2.2 Research area

The town of Stellenbosch, situated in the Western Cape Province of South Africa, was chosen as geographical area for the research, as it was argued that a representation of typical South African consumers is found here. There is no reason to expect that the buying pattern of game meat for Stellenbosch inhabitants would differ from other areas in South Africa. Stellenbosch is a historical University town with 83 000 inhabitants (Stellenbosch Tourism, 2001). As Stellenbosch is a University town with a historical majority of white students, it was anticipated that the educational level of white respondents would be above the national average.

2.3 Sample size and research procedure

The South African consumer respondent group consisted of 300 residents of Stellenbosch's residential areas. This group consisted of 100 each of black, coloured and white consumers. Indian South Africans were excluded from the research group, because preliminary research indicated that because of their Hindu or Muslim religion, only a small portion of consumers in this group would be permitted to consume game meat. The three groups were chosen from the traditional black, coloured and white residential areas in Stellenbosch. Respondents were randomly chosen from property layout maps from each residential area. For this the number of residential properties per area and the percentage of respondents required per area were calculated. A systematic sample of respondents was drawn from each of the identified geographical areas in which the targeted respondents reside. These identified respondents were then marked on the area maps and an address list was compiled from the chosen respondent addresses.

Consumer questionnaires were completed with the help of fieldworkers. Fieldworkers were supplied with maps as well as address lists of the residential areas. Fieldworkers received instructions on how to present the questionnaires. They then had to explain the nature of the research to the head of each household and ask if they would be willing to complete the questionnaire in their own time. Fieldworkers had to make appointments to collect the questionnaires.

The fieldworkers were educated on how to solve potential problems regarding the execution of the questionnaire. They were supplied with a list of possible problems and solutions. They were also trained to replace respondents where problems could not be solved. This process involved replacing a property with the property to the right and then subsequently to the left of the property and then again onto the right of the

previous property, and so forth, until a possible respondent could be found. Replaced properties had to be indicated on the property layout maps to ensure that the correct replacement procedure was followed. Fieldworkers were also supplied with a computerised random list of numbers that they had to use when a property would be a block of flats, which was considered to be one property.

The reliability of fieldworkers was tested by means of a ten percent (10%) back-check on each of the fieldworker's completed questionnaires. Ten percent (10%) of each of the fieldworkers' respondents were randomly chosen from the property layout maps, revisited by new fieldworkers and asked if they completed questionnaires on game meat. No irregularities were found, indicating that fieldworkers did visit the chosen respondents.

2.4 Data analysis

The completed questionnaires were coded to prepare them for data capture. A template with numeric values (1-7) was used for the unstructured line scales in order to evaluate the positions that respondents indicated on the line scale. A numeric value was then given to the indication on each line scale. The SAS (1999) package was used to analyse the data. Chi-squared (χ^2) frequencies were used to test for statistical influence of independent variables on dependant variables. The Chi-square test is used where hypotheses concerning variances have to be tested, frequency distributions need to be analysed and the independence of variables needs to be indicated (Blumen, 1992). Basic statistical analysis was also performed on data that involved numeric values. Percentage means and standard deviation tests were then performed with the SAS (1999) package. The confidence limit used in this analysis was ninety-five percent (95%) throughout. All the discussed effects, unless otherwise stated, are significant ($p \leq 0.05$). The South African consumer respondent group data were analysed separately for the three different racial groups, as well as combined for the total group ($n=300$). The questionnaires had a filter question to identify vegetarian consumers. These consumers only completed the indicated questions that were relevant to them. The respondent group size (n) was thus adapted for questions that vegetarian respondents could not complete, in order not to eliminate no response data from this group. Missing percentages in the results and discussion were due to no-response data.

3. RESULTS AND DISCUSSION

3.1 Demographic profile of respondents

3.1.1 Population group

The respondents represented three different race groups in South Africa, namely black, coloured and white consumers. The black consumers ($n=100$) were predominantly Xhosa speaking (96%) while the coloured ($n=100$) and white ($n=100$) respondent groups were both English and Afrikaans speaking. The age group

distribution for the three respondent groups was similar, with most respondents being between 30 and 50 years of age (Fig. 2).

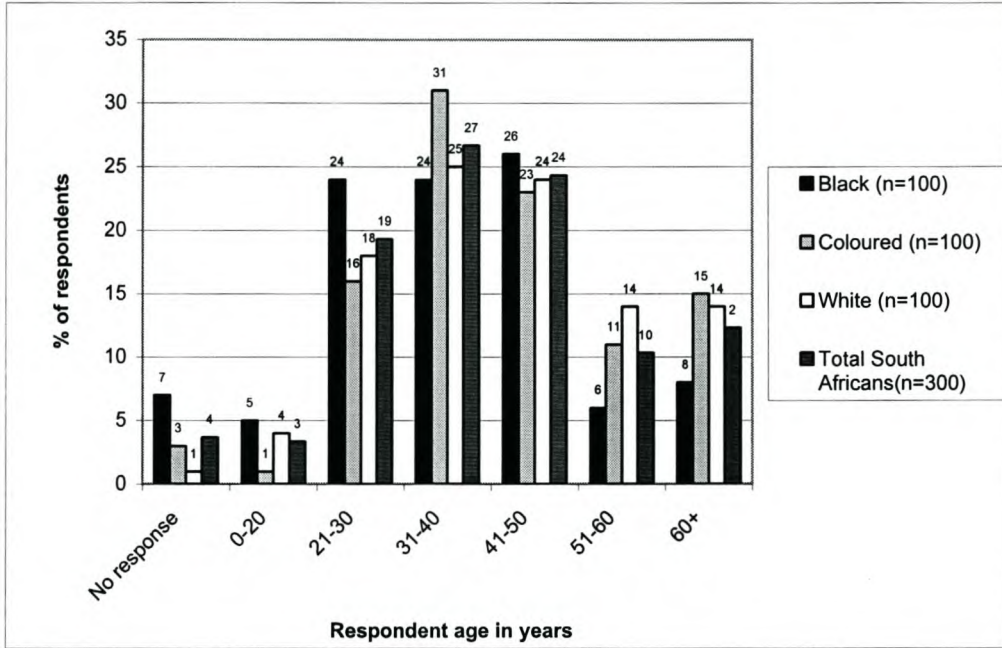


Figure 2
Age distribution of respondents

3.1.2 Gender

More females than males completed the questionnaires. Fifty-nine percent (59%) of the respondents were women, whilst 41% were men.

3.1.3 Income

The total monthly household income of respondents was indicated by only 75% of the respondents. Among the black respondent group 48% of respondents did not indicate their income, while 18% of the coloured and 11% of white respondents did not indicate their income. The income distribution of the three respondent groups could therefore not be significantly determined but ranged from R 0 to more than R 20 000 per month.

3.1.4 Employment

The respondents were asked to name their full-time occupation. The different occupations were classified into seven categories, namely (i) unemployed, (ii) housewife, (iii) pensioner, (iv) professional occupation (e.g. doctor, lawyer etc.), (v) non-professional occupation, (vi) trade occupation and (vii) student. The non-professional occupation group was the largest overall (29.3%), with the housewife group the second largest (21.3%) (Fig. 3).

Most of the black respondents who completed the questionnaire were either housewives (26%) or unemployed (22%), while most of the coloured (36%) and white (42%) respondents had non-professional occupations.

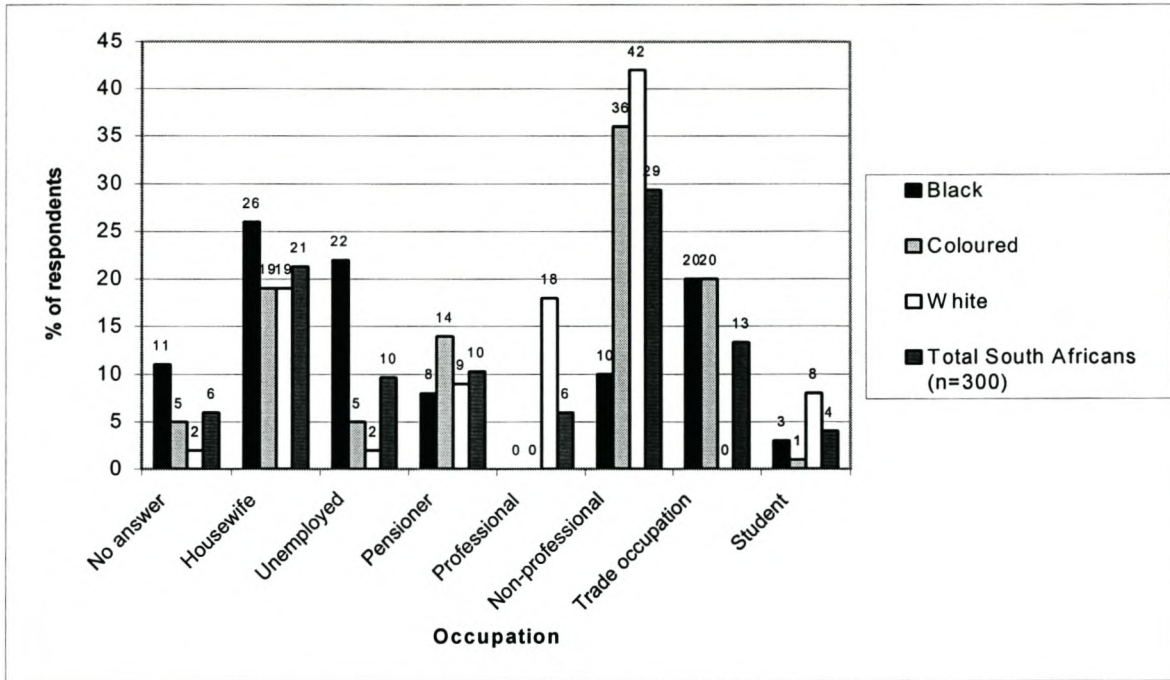


Figure 3
Occupation of respondents

3.1.5 Educational level

The educational levels of respondents was categorised into three basic categories, namely a lower qualification than Matric/ Grade 12/ Standard 10, thus indicating that respondents did not complete their high school career; Matric/ Grade 12/ Standard 10, indicating that a respondent did complete high school; and lastly a post-school diploma or degree (Fig. 4).

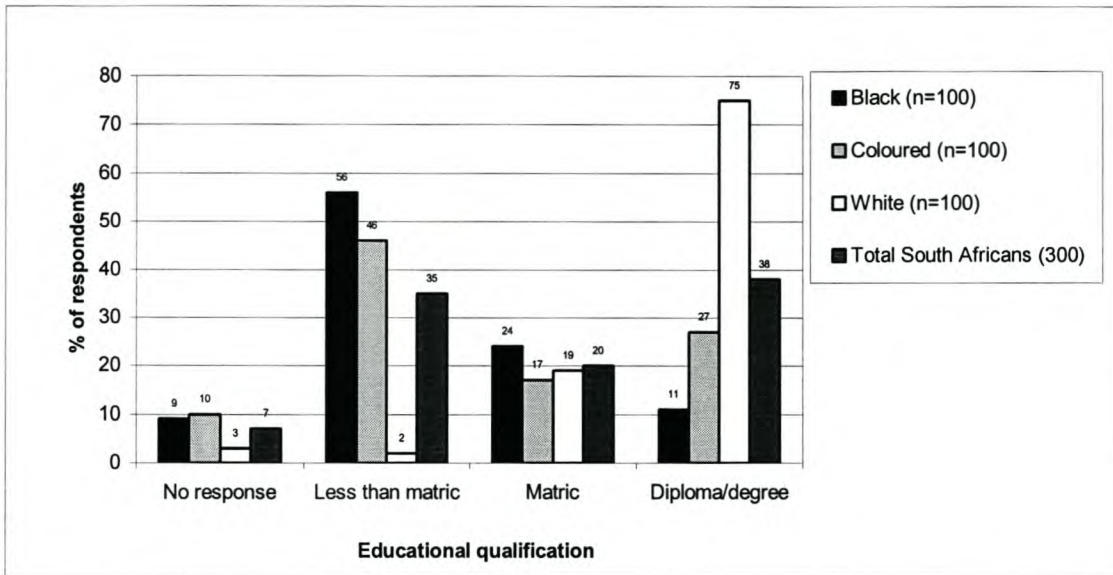


Figure 4
Educational level of respondents

Most consumers in the coloured (46%) and black (56%) respondent group did not complete their high school career, while most respondents in the white group (75%) obtained post-high school diplomas or degrees (Fig 4). The respondents in all three cultural groups predominantly indicated that they identified with the Christian religion (88.3%).

3.2 Eating patterns and habits

In order to establish South African consumers' perception of game meat, they were asked to list their immediate thoughts surrounding game meat. A list of more than one hundred and twenty (120) concepts was compiled. More than twenty-two percent (22.5%) of the total respondent group first thought of different species of game, ten percent (10%) thought of nature and game ranches, while more than eight percent (8.4%) thought of biltong (dried meat) and dried sausage. Seven percent (7%) of the respondents thought of game meat dishes, 6.7% thought of hunting, whilst 4% thought of low-fat meat. The remaining 42% of responses were divided between more than 100 concepts, such as "strong flavoured", "tasty meat", "low fat meat", etc.

According to Steenkamp (1997) concern about health is a growing trend, because a large number of the world's population consists of ageing people who have more health problems than younger people. Older people are therefore often interested in "health" products.

In order to establish consumer eating patterns and eating habits, questions were asked about how often and what meat types consumers eat at restaurants and if they like to experiment with food. Respondents were also questioned on how their eating habits influence their attitudes towards different meat types and on their attitudes concerning health.

Among the three respondent groups (n=300), only 4.3% (n=13) indicated that they did not eat any type of meat. The reasons they did not eat meat included health reasons (n=6) and moral objections to eating meat (n=7). Jansen van Rensburg (1992) studied the marketing of game meat in South Africa and found that 53.7% of consumers indicated that they have eaten game meat. In comparison with this data, from the meat-eating group of 278 consumers in this research, 73.2% of respondents have eaten game meat. Of the white consumer group, 95% had eaten game meat, with 60% coloureds and 55% blacks having eaten game meat. The total respondent group also indicated that 72.1% (n=287) (black=53%, coloured=67%, white=97%) had eaten game biltong (dried meat).

Consumers were asked to indicate on a semantic differential line ranging from "dislike" (1) to "like to buy game meat" (7) to what extent they would like to buy different meat types to consume at home, with the left-hand side of the line indicating that they dislike buying a meat type and the right hand side of the line indicating that they like to buy a meat type. Chicken rated highest, with 63.8% of consumers indicating that they like to buy it. Lamb was rated most likely to be bought by 60.3% and beef by 50.9% of the respondents. Thirty-four percent (34.5%) of the respondents indicated pork as a meat type they like to buy, while ostrich and game meat were both ranked by 16.7% of the consumers as meat they like to buy. Hoffman, Donaldson and Prinsloo (1995) found that black consumers in the Northern Province of South Africa favours chicken above other meat types. Crafford, Hoffman, Muller and Schutte (2002a) studied the marketing behaviour for game meat by supermarkets and butcheries and found that these dealers indicated that beef, mutton/lamb and chicken were the meat types that are most popular with consumers.

Consumers were also asked to indicate how frequently they eat different meat types, as the meat type they like to buy would not necessarily be the meat type they eat. Eighty-one percent (81.2%) of the total respondents eat chicken more than once per month, while 67.9% ate lamb and 57.5% beef more than once per month. All respondents, but especially black and coloured respondents, indicated that they eat pork meat less frequently than chicken, lamb or beef. Only between six and nine percent of black and coloured respondents (blacks, 8.6% and coloureds, 6.3%) indicated that they eat pork more than once per month. Consumers indicated that they did not eat game meat or ostrich often, while 39.7% of the respondents never eat ostrich meat and 26.8% never eat game meat. Respondents considered chicken (36.8%) to be the most versatile meat type, followed by lamb (19.7%).

In a study that Steenkamp (1997) undertook to identify international trends in consumer food behaviour, it was found that more consumers will increasingly regularly eat at restaurants or take-away restaurants. In order to establish the frequency of the respondents' eating patterns at and away from home, they were asked to indicate how many times per year they eat in a restaurant (Fig. 5).

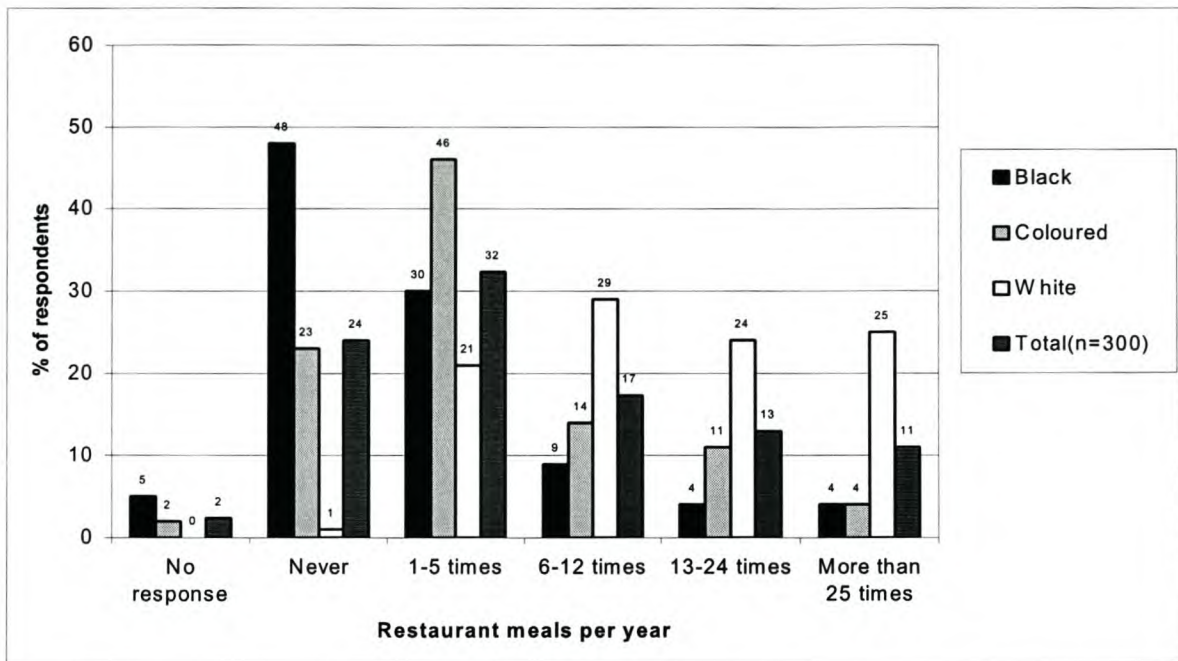
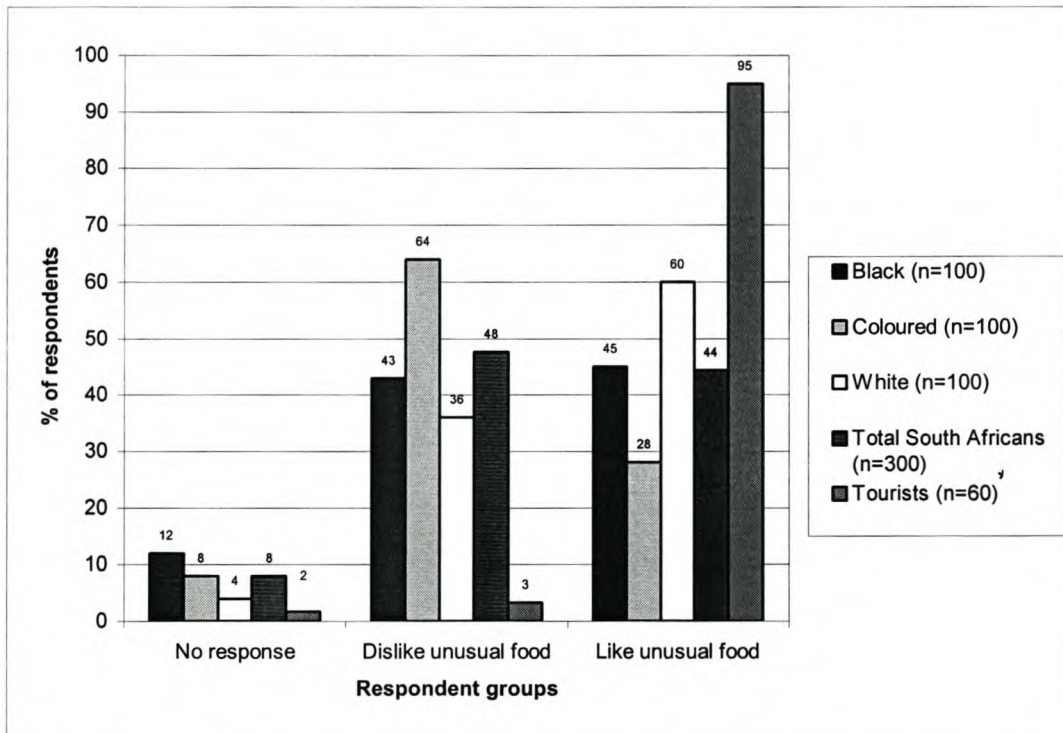


Figure 5
The number of restaurant meals South African respondents eat per year

Nearly half of the black respondents (48%) indicated that they never eat in restaurants. Forty-six percent (46%) of the coloured respondent group indicated that they eat in restaurants 1 - 5 times per year, while 23% never eat in restaurants. The white respondent group indicated that 78% eat in restaurants more that six times per year. Thirty-two percent (32%) of the total respondent group indicated that they eat in restaurants 1 - 5 times per year. Consumers were asked to rank their preference in ordering different meat types when they eat in restaurants. Chicken, followed by mutton/lamb and beef were the meat types ranked by the total, as well as individual respondent groups, as the preferred meat type to order in a restaurant. Pork and game meat were the third and fourth preferred meat type by respondents, while ostrich was the least preferred meat type that South African respondents favour ordering in a restaurant. Crafford, Hoffman, Muller and Schutte (2002b), however, found that South African restaurants indicated that beef, followed by mutton/lamb and chicken, are the meat types most restaurant customers order. It should, however, be considered that the restaurants researched all had to sell game meat, and were therefore situated in areas where tourists visit. The client profile of these restaurants would therefore differ form the consumers in this research.

According to Armitstead (1998) consumers are increasingly aware of food issues. The growing health concerns have led to the demand for low-kilojoule and low-cholesterol products. In order to establish the respondents' attitudes towards health, they were asked if they generally consider the health aspects of a food type when choosing a food. Seventy-six percent (76%) of the total respondents indicated that they do consider the health aspects of food. Of the three respondent groups, the coloured consumers (61%) were least concerned with the health aspects of food, whilst 82% of black and 85% of white respondents indicated that the health aspects of food are important to them.

According to Steenkamp (1997) consumers are seeking to economise on products that are less important in order to allow themselves more important pleasures. Consumers are therefore purchasing more exotic, gourmet and ethnic items for unnecessary pleasures. When respondents were asked if they enjoyed eating unusual or exotic food types from time to time, it was clear that white consumers (60%) like to buy unusual foods more than coloured and black consumers did (Fig. 6). No statistical difference exists between the total number of respondents who enjoy consuming unusual foods and those who do not. It is therefore interesting to note that Crafford, Hoffman, Muller and Schutte (2002c) found that 95% of tourists visiting South Africa indicated that they do enjoy eating unusual food types.



* Crafford et al., 2002c

Figure 6
Respondents' preference for unusual foods

3.3 Factors influencing consumer behaviour

According to Grunert, Harmsen, Larsen, Sørensen and Bisp (1997) consumers are believed to be becoming less predictable in their behaviour, as consumer demands become more fragmented and less consistent. The changing attitudes and perceptions of consumers regarding food and health is a complex area of study. Not only personal issues play a role in changing attitudes and perceptions of consumers, but also external issues specific for each individual consumer. Food constitutes an important form of social exchange and is in most cultures part of ceremonial traditions and beliefs. Eating patterns, eating habits and socio-cultural beliefs

influence the way we eat and the way we perceive food and eating. It is, however, impossible to pinpoint what differentiates one consumer from another, because so many variables play a role in the way we perceive food. Hernández and Seehawer (2002) found that consumers are mostly concerned about the hygiene, safety, organoleptic quality and origin of food, when they judge food quality. Windhorst (2001) and De Montzey (2001) note that consumers are increasingly concerned with the traceability of food products. Consumers want to know where food products come from, who the farmer is and how a product is made (De Montzey, 2001).

In order to assess the role of emotions and previous experiences on consumers' attitudes towards game meat, they were questioned on their knowledge and experience of game meat, as well as their beliefs on conservation. Respondents were asked to list positive and negative attributes that they associate with game meat. The leanness (23%), taste (14%) and healthfulness (25%) of game meat were listed among the 23 different responses, as the positive attributes of game meat, while the price (19%), taste (18%) and the lack of availability (11.8%) of game meat were considered the top of the list of twenty-four different negative attributes associated with game meat by respondents (Fig. 7 and Fig. 8 respectively). It is apparent that consumers do not agree on the taste of game meat, as 14% of respondents listed it as one of the positive attributes of game meat, whilst 18% listed it as one of the negative attributes of game meat. Black consumers were largely concerned with the hygiene (23%) and the smell (20%) of game meat. Hoffman *et al.* (1995) found that black South Africans living in rural areas are very concerned about the shelf-life and hygiene of meat, as many of them do not have fridges or freezers and prefer to eat meat immediately or dry, smoke or salt their meat.

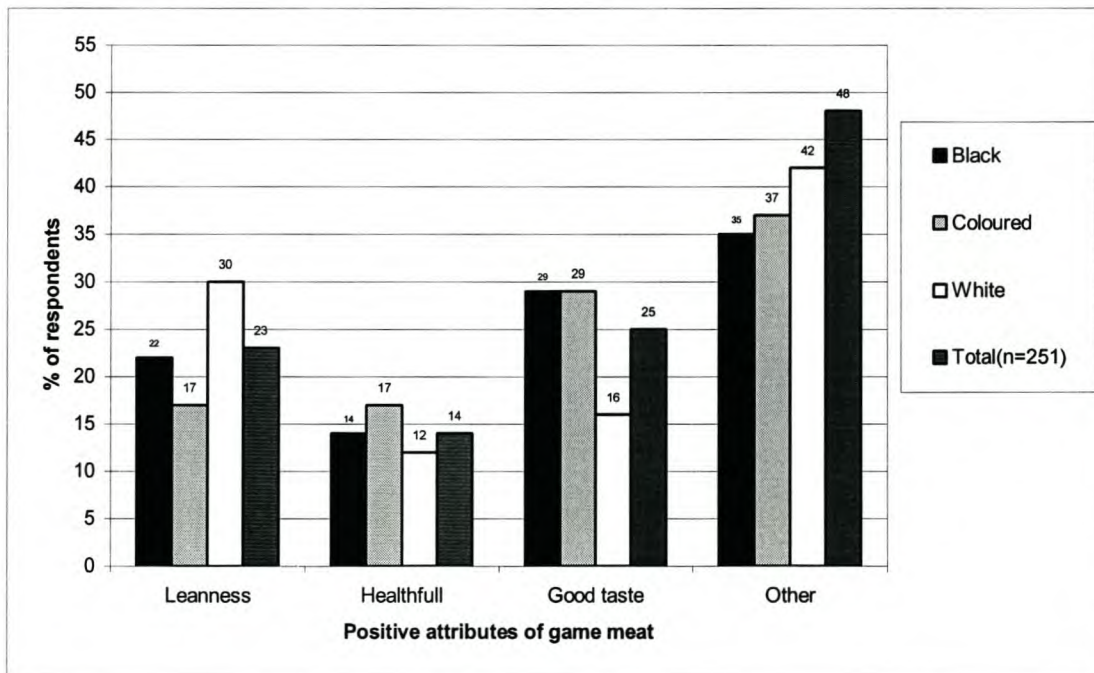


Figure 7
Positive attributes of game meat according to South African consumers

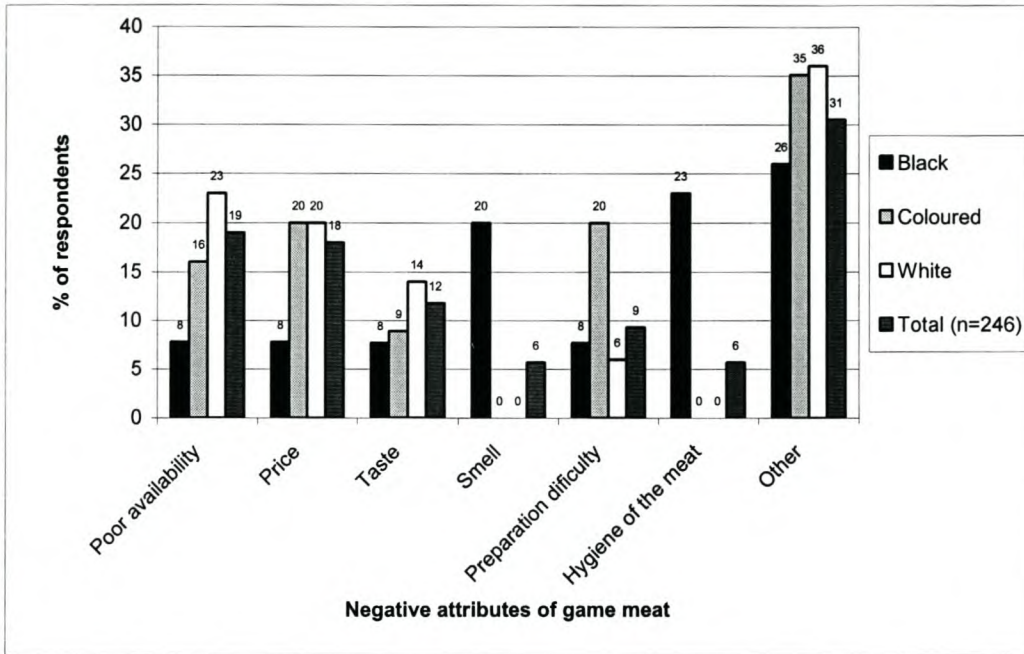


Figure 8
Negative attributes of game meat according to South African consumers

Respondents' experience on the preparation and cooking of game meat and their subsequent perception of the methods necessary to cook game meat was assessed by asking respondents if they knew how to prepare game meat. Of the total group of respondents, 40.8% – of which 50% (n=59) were white, 26% (n=30) coloured and 24% (n=28) black – indicated that they know how to prepare game meat. The group of respondents (40.8%, n=117) who indicated that they did know how to prepare game meat were subsequently asked to describe how they would prepare and cook game meat. It is apparent from the twenty-three different responses that cultural background influenced respondents' cooking method of game meat. Most of the black responses (90%) indicated that respondents would cook the meat in salted water or roast it on a fire, while coloured responses (100%) indicated that respondents would marinate and stew the meat with vinegar. Responses of white respondents suggested that they would marinate game meat in vinegar or red wine and then boil it slowly (55%), prepare a game meat pie (33%), or roast (barbeque) the meat on a fire (12%).

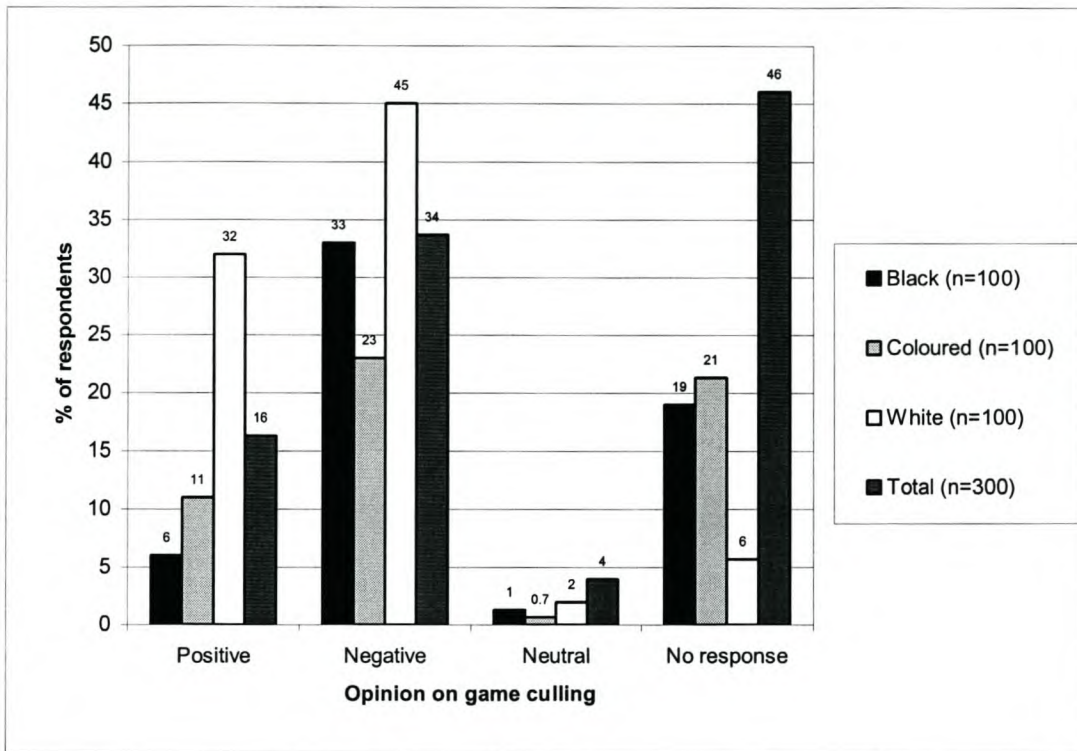


Figure 9
Respondents' opinion on game culling

The respondents were also asked to give their opinion on the culling or harvesting of game meat. A total of 50% of the respondents had no opinion on culling or harvesting, while 33.7% felt negative about the culling of game animals (Fig. 9). However, it is interesting to note that 73% of the respondents who felt negative about culling (n=101) indicated that they would eat game meat if it were served to them. A majority of respondents (72.7%) indicated that they have never hunted.

3.4 Consumer buying behaviour

According to Meiselman and MacFie (1996) acceptance and perceived quality of food is formed first by its taste or flavour, then by the texture and lastly by the appearance. Van Trijp, Steenkamp and Candel (1997) define perceived quality as the consumer's perception of the fitness for use of the product with respect to its intended purpose, relative to alternatives. Steenkamp (1997) concludes that consumers need to decide upon the criteria on which they evaluate alternative products. Consumer buying behaviour is largely manipulated by the marketing mix, which includes the price of products, the product itself, promotion that is done and the place where products are available.

A list of factors that could influence consumer buying of game meat was listed on a line scale. Consumers were asked to indicate on a semantic differential line ranging from "does not influence" (1) to "does influence" (7) to

what extent different factors influence consumers' buying of game meat, with the left-hand side of the line indicating that a factor does not influence and the right hand side of the line indicating that a factor does influence their buying of game meat. The factors included availability of game meat, price, quality, media, fashion, season, availability of other meat types and the consumers' knowledge of game meat. Consumers indicated that the price of game meat, the quality of game meat and the availability of other meat types influenced their buying behaviour of game meat most. Factors that did not influence their buying behaviour included the media, fashion and the season. Crafford *et al.* (2002a) found that supermarkets indicated that the demand for game meat arises only in winter months. This is contradicted by the fact that consumers indicated that their purchasing of game meat is not influenced by the season.

3.4.1 Price

Price is that which is given up in exchange to acquire a good or service. Consumers often consider price to be the most important variable when making buying decisions. Price is compared to the perceived value of a product (Lamb *et al.*, 2001). Factors that influence the price of game meat were identified and included the quality of the game meat, the type of species, the cut, the influence of other meat types, the supplier of the meat and whether it is fashionable to buy the meat or not.

Consumers were asked to arrange six meat types in order of what they considered to be the least expensive to the most expensive, with a value of one indicating least expensive, and a value of six indicating that a meat type is the most expensive of the six. Most consumers (43.6%) considered game meat as the most expensive, with ostrich the second most expensive. Chicken was considered the least expensive meat type by most of the consumers (51.2%), with pork considered the second least expensive.

Most consumers (76%, n=287) indicated that they were not willing to pay more for game meat than other meat types. They were asked to give a reason why they would or would not pay more for game meat. Many consumers indicated that because of economic reasons they would not pay more for game meat (18.1%), while other consumers would rather buy other types of meat than pay more for game meat (11.2%). Some consumers also indicated that, because they do not like the taste of game meat, they would not be willing to pay more for it than other meat types (8.4 %).

3.4.2 Product

A product can be defined as everything, both favourable and unfavourable, that a person receives in an exchange. Products can be classified as either consumer goods or business goods. Game meat is a consumer good and can further be classified as a speciality product (Lamb *et al.*, 2001). Components pertaining to game meat as a product were identified as; availability, health benefits, sensory quality, species, cut and if the meat is fresh or dried. Consumers were asked to indicate if they would eat game meat if it were served to them. Sixty-six percent (black, 44%, coloured, 66%, white, 88%) of the respondents indicated that they would eat game

meat. Of the respondents who have never eaten game meat (n=74), only 30% indicated that they would eat game meat if it were served to them.

Respondents were asked to give reasons why they would or would not eat game meat. Just over thirty-two percent (32.8%) of the respondents indicated that they enjoy the taste of game meat and would therefore eat it if it were served to them. Reasons for why they would not eat game meat included that they do not like the taste of game meat; it would suit them not to cook it themselves, because they have never eaten it, etc.

3.4.2.1 Species

Jansen van Rensburg (1992) found that South African game farmers ranked springbok the most favoured species to farm with, followed by impala, kudu and blesbok. Gemsbok is also a popular species often found in the Northern Province Kalahari region. Consumers who indicated that they have eaten game meat before (=210) were asked to indicate what species of game meat they have eaten (Fig. 10).

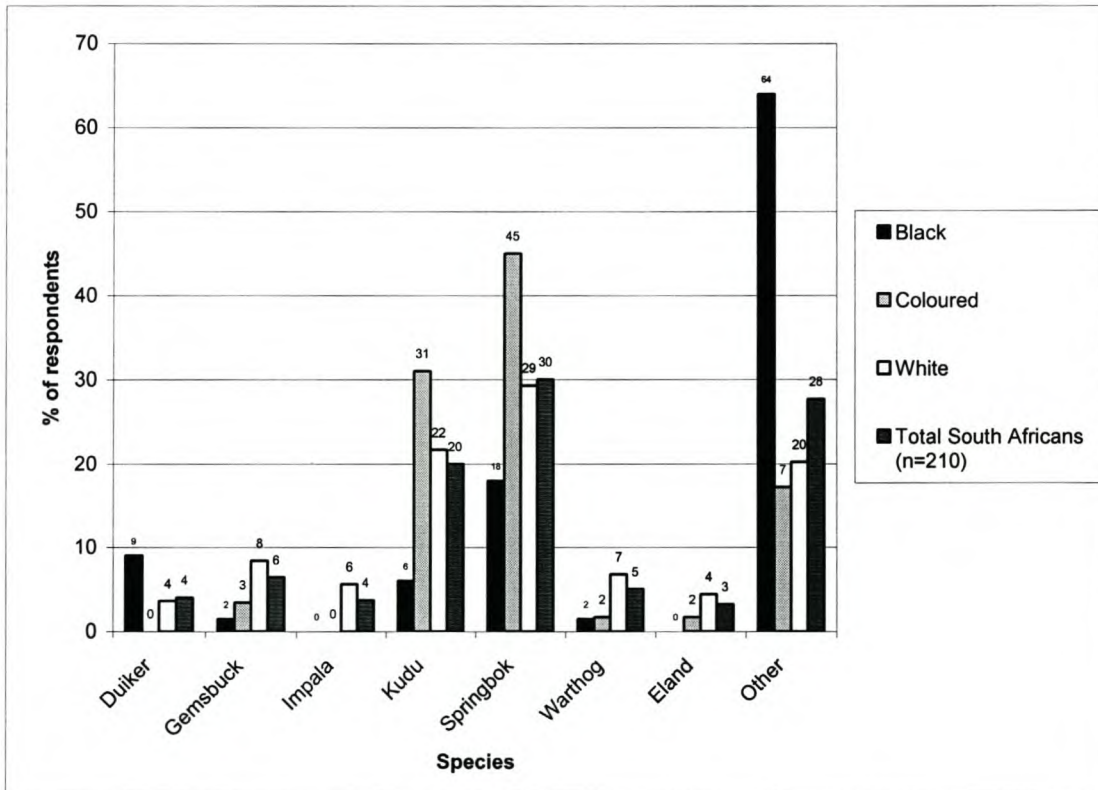


Figure 10
Game species that South African consumers have eaten before

Most consumers have eaten springbok/ *Antidorcas marsupialis* and kudu/ *Tragelaphus strepsiceros*. Gemsbok/ *Oryx gazella* was also listed as a game species consumers have eaten (6.4%). According to Crafford *et al.* (2002a) and Crafford *et al.* (2002b), these three species were also found to be regularly available in supermarkets, butcheries and restaurants. Forty-five percent (45%) of the black consumers indicated that they

have eaten hare. Although hare is not considered as game meat for the purpose of this study, it is interesting to note this statistic, as the black respondents see hare as a game meat and hunt or catch it in the rural areas of the Transkei, from where the Xhosa people originated. Gemsbok, springbok and kudu are three species that are abundant in the regions surrounding the Western Cape (Smithers, 1983). In other areas where other species are more abundant, the data would most probably be different.

3.4.2.2 Availability

A misconception exists about the influence of seasonality on the cropping and production of game meat. Game meat is perceived as a seasonal product, because the hunting season is normally during wintertime. Respondents were asked to indicate the availability of game meat in supermarkets, butcheries and restaurants in their area. All the respondent groups indicated that game meat was sometimes available in their area. Black respondents indicated that it was never available in supermarkets, while it was regularly available in butcheries. Respondents were also asked whether it was possible to buy game meat at supermarkets, butcheries and restaurants in their area during the summer months. Just over fifty percent (50.2%) indicated that it was not possible to obtain game meat in summer time; 42.5% indicated that it was possible to obtain game meat during summer. As discussed earlier, respondents indicated that the season does not influence their buying behaviour of game meat. Here, however, 50% of the respondents indicate that it is impossible for them to obtain game meat during summer.

3.4.2.3 Health benefits

The health benefits associated with game meat are unknown to many consumers. Game meat has a high polyunsaturated to saturated fatty acid ratio and a low cholesterol content, making it an excellent health food for consumers with coronary heart diseases, high cholesterol and diabetes (Elliot, 1993; Viljoen 1999). Respondents had to indicate whether they were of the opinion that game meat has any health benefits and to list the benefits if they thought that there were benefits. Most of the coloured (43%) and black (56%) respondent group were of opinion that game meat has no health benefits, while seventy-two percent (72%) of the white respondent group did believe that game meat has health benefits. Of the total group, 47.7% thought game meat had health benefits, 41% thought it had no benefits, and 11.3% did not respond. Of the benefits that were listed, most consumers (83.2%) believed game meat to be low in fat, while 7% indicated that game meat is low in cholesterol. It is apparent that the white consumers are better informed regarding the health benefits of game meat.

3.4.2.4 Meat quality

Consumers were asked to name the qualities that they normally consider when they buy meat. Fat content (29.4%), colour (13.5%) and freshness (13.2%) were the qualities most respondents considered important (Fig. 11).

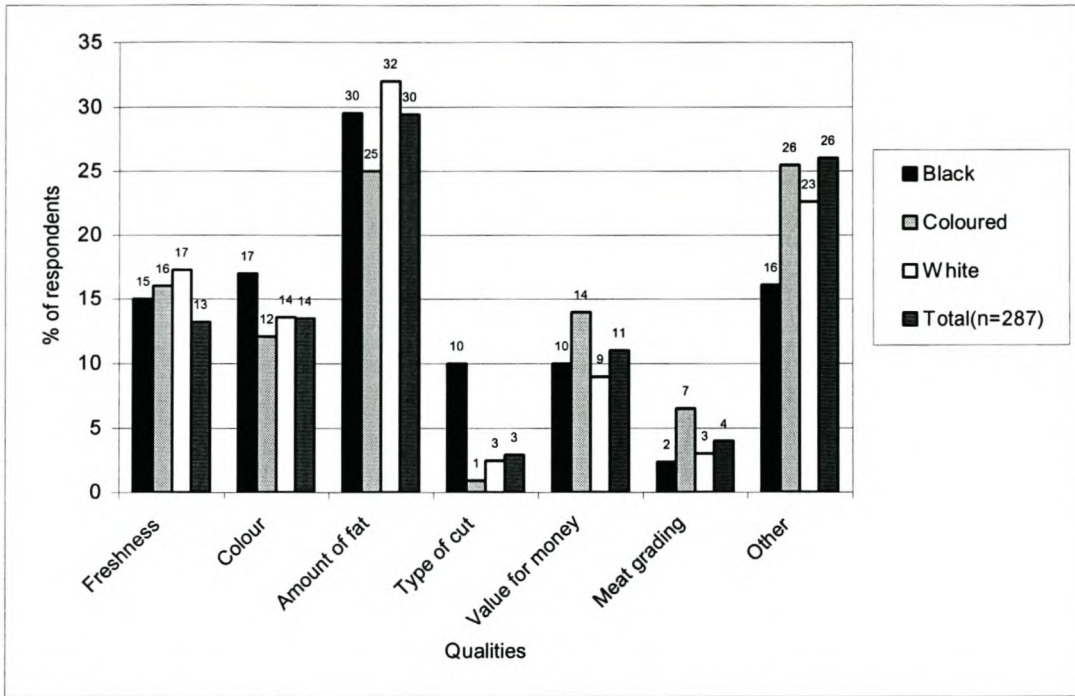


Figure 11
Qualities that South African consumers consider when they buy game meat

In order to compare how consumers evaluate the quality of game meat versus other meat types, a semantic differential line was given on which respondents had to indicate to what extent the qualities of colour, smell, general appearance, toughness, juiciness and ripeness of game meat and other meat types (excluding game) were important to them. The left-hand side of the line scale indicated that a quality is not at all important; while the right-hand side of the line indicated that a quality was important to a large extent.

The number of respondents who indicated that a quality was important to them was calculated for each of the named qualities (Fig 12). It is apparent that the sensory qualities of game meat are considered less important to the consumers than the sensory qualities of traditional meat (e.g. beef, or pork).

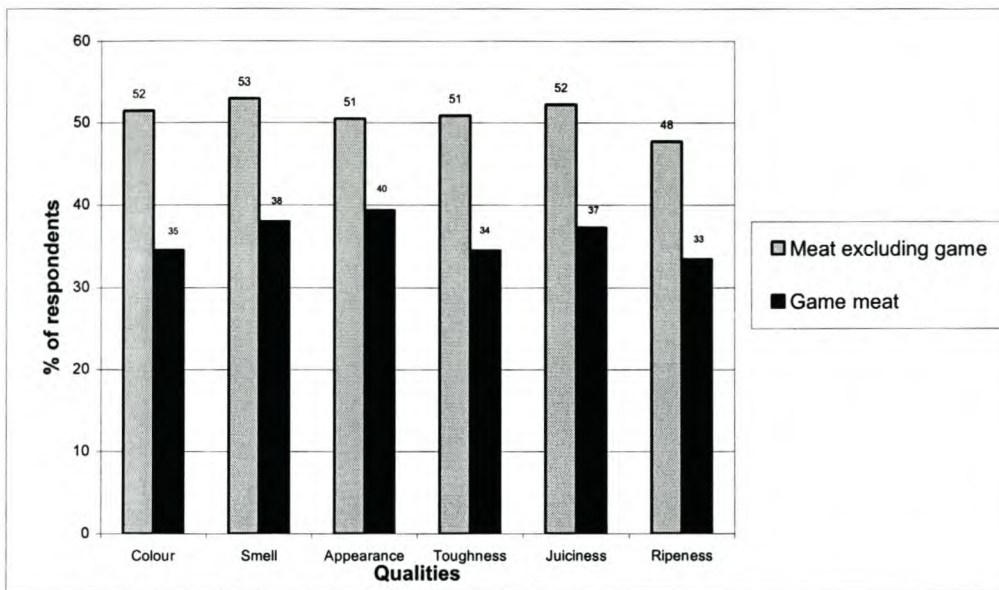


Figure 12

Percentage of South African consumers who consider the qualities of colour, smell, general appearance, toughness, juiciness and ripeness as very important for meat, excluding game and game meat (n=287)

3.4.3 Promotion

Promotion can be defined as the communications by marketers that inform, persuade and remind potential buyers of a product in order to influence an opinion or elicit a response. Promotion involves personal selling, advertising, sales promotions and public relations (Lamb *et al.*, 2001). In order to establish the visibility of any promotion possibly done for game meat, consumers were asked if they are aware of any marketing efforts in the year 2001 through any form of media in South Africa to promote game meat. Eighty-one percent (81%) of the respondents were not aware of any marketing efforts. Respondents were subsequently asked if they were aware of any information that shops and restaurants supply on game meat. Some seventy-nine percent (79.3%, n=300) of the respondents were not aware of any information supplied. The respondents who were aware of information supplied indicated that the information available is mostly on recipes and preparation techniques.

In order to establish if the supply of information on the health benefits and cooking methods of game meat would encourage consumers to buy game meat, respondents were asked whether they would buy game meat, or buy game meat more often if more information on game meat is available to them. The majority of coloured (51%) and white (61%) consumers indicated that they would buy more game meat if more information were available. The total respondent group data (n=287) showed 52.6% of the respondents would buy game meat more often if more information on the health benefits and cooking methods were available to them (Fig. 13).

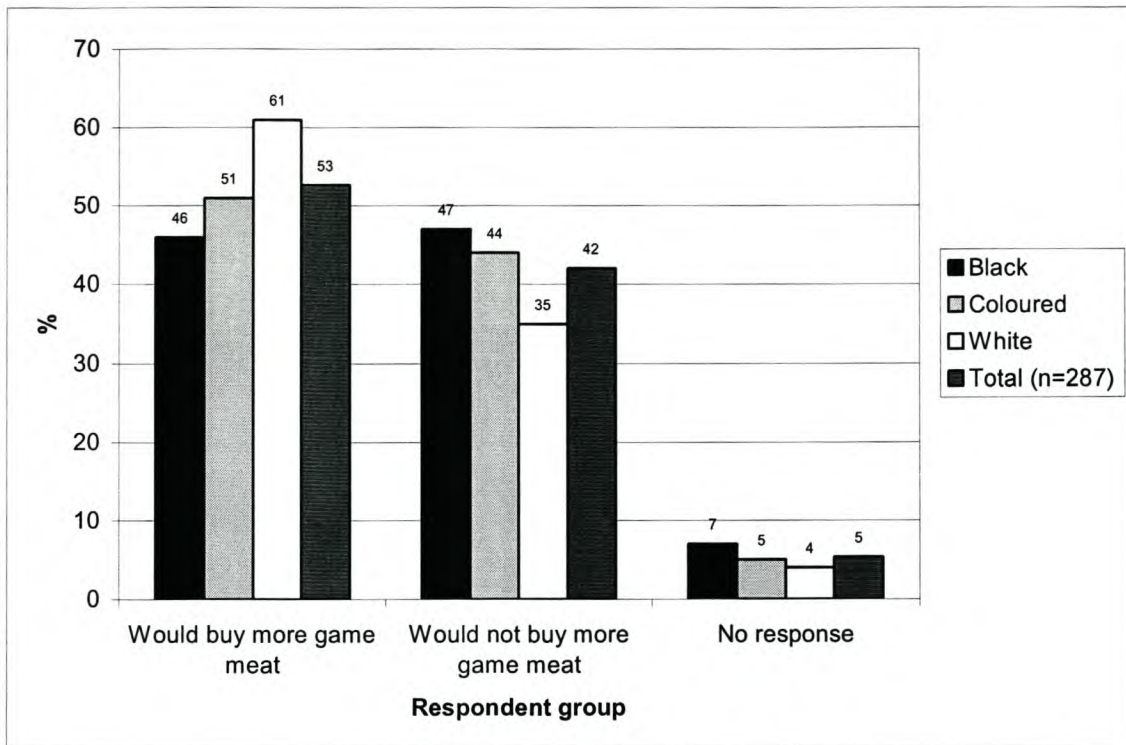


Figure 13

Respondents indicating whether they would buy game meat more often if information on game meat were available to them

To the question whether the respondents were under the impression that game meat was currently in fashion, the majority of respondents (62.3%) did not think that game meat was in fashion, while 25% did consider it to be in fashion and 12.7% of the respondents did not respond.

3.4.4 Place

It is important that an effective distribution channel should be set in place for any product. A distribution channel can be defined as a set of interdependent organisations that ease the transfer of ownership as products move from producer to business user or consumer (Lamb *et al.*, 2001). To establish where South African consumers consume game meat, respondents were asked to indicate the location where they have consumed game meat in the past. Most respondents (82.8%, n=228) indicated that they had eaten it in their own homes or in friends' and families' homes, while only 15% indicated that they had eaten it in a restaurant. This correlates with the findings of Crafford *et al.* (2002b), that most consumers that eat game meat in restaurants are tourists. Respondents were then asked if they would order game meat in a restaurant. The majority of white respondents (56.5 %) indicated that they would order game meat in a restaurant, while of the total respondent group 52.3% would not order game meat, 44.3% would order game meat in a restaurant and 3.5% did not respond. This correlates with white respondents indication in this research that they often eat in restaurants and are willing to eat exotic food types.

White respondents also indicated that they would buy game meat and cook it themselves (60%), while the total respondent group showed no significant difference between the respondents who would cook game meat themselves (49.1%) and those who would not cook it themselves (49.8%). Of the group of respondents who have never eaten game meat (n=74), only 12% would buy game meat and cook it themselves, while 28% of this group indicated that they would buy game meat and cook it, if more information was available to them. The respondent group that indicated that they would buy game meat specified that they would rather buy game meat at a butchery (56.4%) than at a supermarket (23%) or private dealer (20.6%). From the respondent group that will not buy game meat and cook it 27% would buy game meat if more information on game were available to them. Of the respondents who indicated that they would not buy game meat and cook it (n=142), 82% did not know how to cook game meat.

4. CONCLUSIONS

This research not only shows that South African consumers are ill-informed regarding the positive attributes of game meat, but also that producers and marketers of game meat are not doing enough to promote game meat. Most respondents indicated that they were not aware of any game meat promotions and that they did not know how to prepare and cook game meat. They are also ignorant of the health benefits of game meat. South African consumers also indicated that they would buy game meat if more information were available to them.

It is evident that South African consumers perceive game meat differently than the "traditional" (beef, lamb, chicken or pork) meat types. They do not consider game meat as a "regular" type of meat that they will eat frequently, but rather as an exotic, seasonal product that require special cooking methods. Respondents apparently do not consider the sensory qualities of game meat as important as those of "traditional" meat types when they buy game meat. It is possible that this is because they buy game meat irregularly and expect game meat to have different sensory qualities to that of "traditional" meat. South African consumers were generally indecisive about the culling of game animals. Of those respondents that did perceive culling as negative, however, most would eat game meat.

Negative perceptions regarding game meat, involved the price and poor availability thereof. South African consumers indicated that they are not willing to pay more for game meat than other types of meat; however, if game meat is marketed as an exotic product, it would not be comparable to "traditional" meat types.

Of the socio-demographic variables in this study, only cultural group and education level showed significant differences in buying behaviour and perceptions on game meat. The white respondent group was better informed on game meat than either the black or coloured groups, and would also be more likely to buy game meat. The respondents who were in the post-high school diploma/ degree educational group were more informed and were more likely to buy game meat.

South African consumers indicated that they consider the fat content of meat the most important quality when they buy meat. This provides an excellent opportunity for game meat producers and marketers, as game meat is lower in fat than pork, lamb or beef. South African consumers also indicated that they would buy game meat if more information were available to them on game meat.

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CHAPTER 4

The perceptions on and purchasing of game meat by overseas tourists visiting South Africa

ABSTRACT

The perceptions on and purchasing of game meat by overseas tourists visiting the Western Cape was researched by means of the survey method with the aid of a structured, self-administered questionnaire. Chi-squared frequencies were used to test the independence of data. The research group consisted of sixty (60) tourists, of which most were German and Belgian. All respondents indicated that they know game meat and have eaten it, whilst most respondents (86.7%) indicated that they like game meat and would eat it again. The respondents further indicated game meat as the meat type they favoured most to order in restaurants in South Africa. This provides an opportunity for the restaurant industry to market game meat on a larger scale. Respondents indicated that they are aware of the health benefits associated with game meat, but that they were not aware of any promotions on game meat in South Africa. The culling of game animals did not concern most respondents, but only 10% indicated that they themselves have hunted before. Warthog was identified as the game specie that most tourists have eaten in South Africa.

1. INTRODUCTION

South Africa is experiencing a surge in tourism at the moment. Van der Merwe and Saayman (2002) note that tourism is the fourth largest industry in South Africa, and that it is currently growing at a steady rate. According to the Cape Town Tourism Bureau (2001), Cape Town International airport's statistics show an increase of 30% in international departures and arrivals from April 1995 to December 2001, thus indicating that South Africa's popularity as a tourist destination is growing steadily. This surge in tourism gives South African industries ample opportunities to market "African" products, specifically for tourists. South African game meat could be an ideal product to market to tourists. Introducing game meat as a quality product to overseas tourists could also strengthen the export possibilities for game meat.

According to Bakula and Kedzior (2001) the sensory characteristics are the most important quality attributes of meat and meat products. Game meat is lower in fat than either beef, pork or mutton and is reported to have an average fat content of between two and three percent (Schönfeldt, 1993). It is also lower in saturated and higher in polyunsaturated fatty acids than beef (Viljoen, 1999). Although juiciness of meat is directly related to the intramuscular lipids and moisture content of meat, the moisture level of the cooked product is mainly responsible for its juiciness. The moisture content of game meat compares favourably with that of beef (Jansen van Rensburg, 1997 & Von La Chevallerie, 1970). Although game meat is less succulent than beef because of lower levels of fat, it is incorrect to assume that it is less juicy than beef.

A number of universal trends in food consumer behaviour can be identified due to international demographic developments, an increase in tourism, the emergence of global marketing strategies, rapid dissemination of information through mass media and government attempts to influence food consumption. Due to the spread of foot-and-mouth disease, the occurrence of dioxin in poultry and BSE (Bovine Spongiform Encephalopathy/Mad-cow disease) in the 1990s, consumers are concerned about the safety and quality of meat products. This has brought about a considerable decrease in meat consumption around the world. Younger consumers are tending to consume less red meat and more chicken and pork, due to the negative publicity surrounding red meat and health. Nutritional guidelines place increasing emphasis on reducing the ratio of n-6/n-3 polyunsaturated fatty acids in the diet (Dransfield, 2001). Consumers are increasingly concerned about the environment, and are therefore interested in free-range and organic products, as well as products, produced by natural production methods (Steenkamp, 1997). According to Hoffman and Bigalke (1999) game meat can be seen as an organic product.

Eloff (2002) indicated that the prices of some game animals (e.g. springbok/*Antidorcas marsupialis* and warthog/*Phacochoerus aethiopicus*) at live game auctions are decreasing. South African game ranchers will therefore need to find different utilisation methods to increase profit margins. The worldwide tendency towards natural food products and the fact that the South African game industry operates as a free-market enterprise can create lucrative opportunities for the game meat industry. Furthermore, it is necessary that animal surpluses be regularly controlled through cropping, because most game ranches do not have predators that aid in the control of animal numbers (Hoffman & Bigalke, 1999). The marketing of game meat on a bigger and more organised scale, and with greater sophistication than has been the case to date, could increase profit margins on game meat (Hoffman, 2001). Warfield, Ford and Mitchel (1996) researched the marketing of crocodile meat in Australia and suggested that exotic meat marketing should be targeted at tourists and restaurants and that promotional activities should be centred around point of sale activities. Crafford, Hoffman, Muller and Schutte (2002a) studied the purchasing and marketing of game meat by South African restaurants and found that most customers that order game meat in restaurants in South Africa are tourists.

It is virtually impossible to obtain reliable data of game meat marketing, consumption and consumer perceptions of game meat in South Africa. The purpose of this research is to study the perceptions and knowledge of tourists regarding game meat and to identify purchasing patterns of game meat by these tourists. This will aid in identifying target markets and marketing strategies for game meat.

2. MATERIALS AND METHODS

2.1 Research design

In order to assess the marketing and consumption trends of game meat by tourists visiting South Africa, the survey procedure was used. Data were collected by means of the questionnaire technique. A structured

questionnaire was designed for European tourists visiting South Africa. The questionnaire was designed to be self-administered in order to give respondents the opportunity to complete the questionnaires in their own time. The layout, formatting and sequencing of the questionnaire were carefully planned to ensure that the design of the questionnaire contributed positively to the successful completion of the questionnaires. For the same reason the length of the questionnaire was to be limited to prevent reluctance in the respondent groups.

The questionnaires were developed after an extensive literature review and based upon the dendrograms that were developed. The questionnaire was designed with the aid of the dendrogram technique (Schutte, 1992). A dendrogram is a visual presentation that conceptualises links and illustrates the different issues pertaining to a specific subject. The dendrogram developed for this study provided the structure for the questionnaire and the interpretation of the data as questions were designed to address the issues indicated on the lowest levels of each of the branches conceptualised by the dendrogram (Fig. 1).

As both the purchasing and perceptions of game meat by consumers had to be researched, the dendrograms consisted of three main levels, namely purchasing behaviour, consumer behaviour and consumer traits. Since this study was aimed at investigating the game meat market, the dendrogram was developed around the four Ps of marketing, namely price, product, promotion and place (Lamb, Hair & McDaniel, 2001). These four factors (price, product, promotion, place) were used as a determining structure to organise the factors/concepts that influence the purchasing and marketing of game meat.

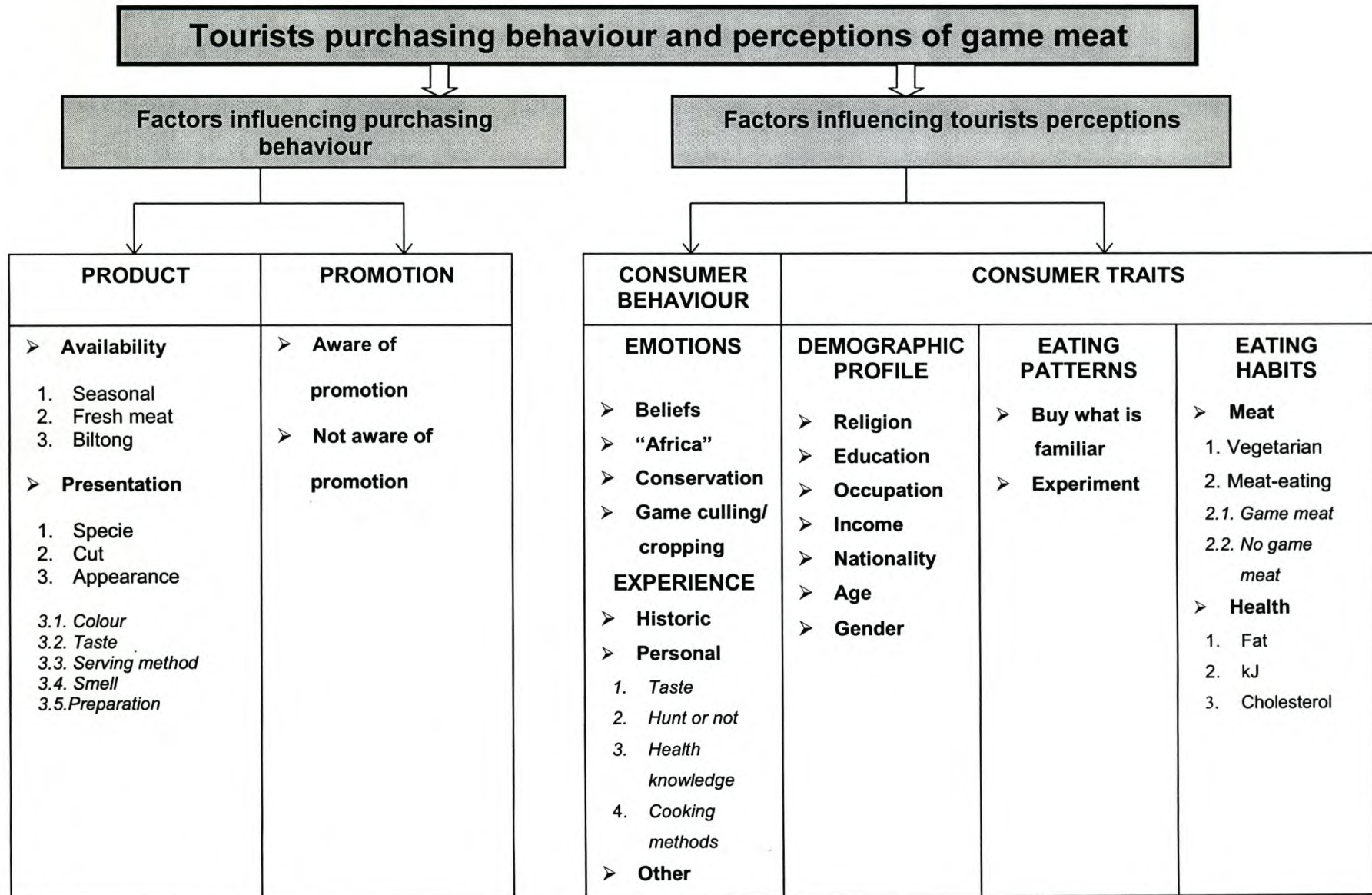


Figure 1
Dendrogram developed to quantify tourists purchasing behaviour and perceptions of game meat

Questions were generated around argumentative factors contributing to the dendrogram. In order to get maximum control over the respondent's frame of reference and to ensure that response categories were in line with logical responses, different types of structured questions were used, for example, open questions, closed questions, rank ordering, semantic differential scales and intensity scales. The questions were arranged in a logical order, with similar types of questions following one another. The questions were refined to ensure that all questions were clear, understandable and unambiguous. The finalised questionnaires were then translated into Dutch and German, as most of the respondents were Belgian, English and German speaking.

Formal testing of the questionnaires was done as part of a preliminary study to confirm the validity and reliability of the testing instrument. A two percent (2%) sample of the size of the total respondent group was chosen for this formal testing. All difficulties with the completion of the questionnaires were attended to, in order to ensure that the questionnaires could be self-administered and that translation of the questionnaires did not produce ambiguities.

2.2 Research area

The town of Stellenbosch, situated in the Western Cape Province of South Africa, was chosen as area of research. This area is a popular tourist destination with numerous restaurants. The growth rate of tourists visiting the Stellenbosch area has increased over the past six years by an average of twenty-five percent (25%). Most tourists visiting this area are of European, and specifically British, Belgian, Dutch and German origin (Stellenbosch Tourism, 2002).

2.3 Sample size and research procedure

Respondents for this group were approached in a hotel setting, where they would have time to complete the questionnaire at their leisure in a comfortable environment. The questionnaire for the tourist group had been refined to ask only the necessary questions and tourists were also rewarded with an incentive to complete the questionnaire.

A hotel in the historical central of Stellenbosch assisted in this research. Most visitors to Stellenbosch are Dutch, German or English speaking (Stellenbosch Tourism, 2002). It was thus decided to restrict the tourist group to English-, Dutch- and German-speaking tourists. This respondent group consisted of 60 tourists staying in this hotel over a period of two weeks.

Questionnaires were supplied to the hotel. The hotel management would leave a questionnaire in the tourist's rooms with a letter that explained the nature of the study as well as the instructions. On completion of the questionnaires, tourists had to hand questionnaires in at the reception desk.

2.4 Data analysis

The completed questionnaires were coded to prepare them for data capture. A template with numeric values (1-7) was used for the unstructured line scales in order to evaluate the positions that respondents indicated on the line scale. A numeric value was then given to the indication on each line scale. The SAS (1999) package was then used to analyse the data. Chi-squared (χ^2) frequencies were used to test for statistical influence of independent variables on dependent variables. The Chi-square test is used where hypotheses concerning variances have to be tested, frequency distributions need to be analysed and the independence of variables needs to be indicated (Blumen, 1992). Basic statistical analysis was also performed on data that involved numeric values. Percentage means and standard deviation tests were then performed with the SAS (1999) package. The confidence limit used in this analysis was ninety-five percent (95%) throughout. All the discussed effects, unless otherwise stated are significant ($p \leq 0.05$). Missing percentages in the results and discussion are due to no-response data.

3. RESULTS AND DISCUSSION

According to Dransfield (2001) consumers attribute a credence factor to products based on their attitudes and experience as well as on information that is supplied to them. This credence factor, together with the consumer's perceived quality of a product, is used to form expectations and perceptions regarding a product. In order to identify the perception that the consumers have regarding the words "game meat", they were asked to list their immediate thoughts regarding game meat. Fifty-nine percent (59%) of the respondents indicated that they thought of different game animal species, seven percent (7%) thought of wildlife or game ranches, while six percent (6%) thought of low-fat meat. This indicates that most tourists associate game meat with game animals or nature.

3.1 Demographic profile of respondents

The respondents were questioned on their demographic details in order to build up a demographic profile. This respondent group ($n=60$) consisted of twenty-five German respondents (15%), forty-three Dutch-speaking Belgian respondents (71.67%) and two English-speaking American respondents (3.33%). This group consisted of twenty-nine (29) female respondents (48.33%) and thirty-one (31) male respondents (51.67%). The majority of respondents in this group (68.33%) indicated that they are older than 51 years of age (Fig. 2).

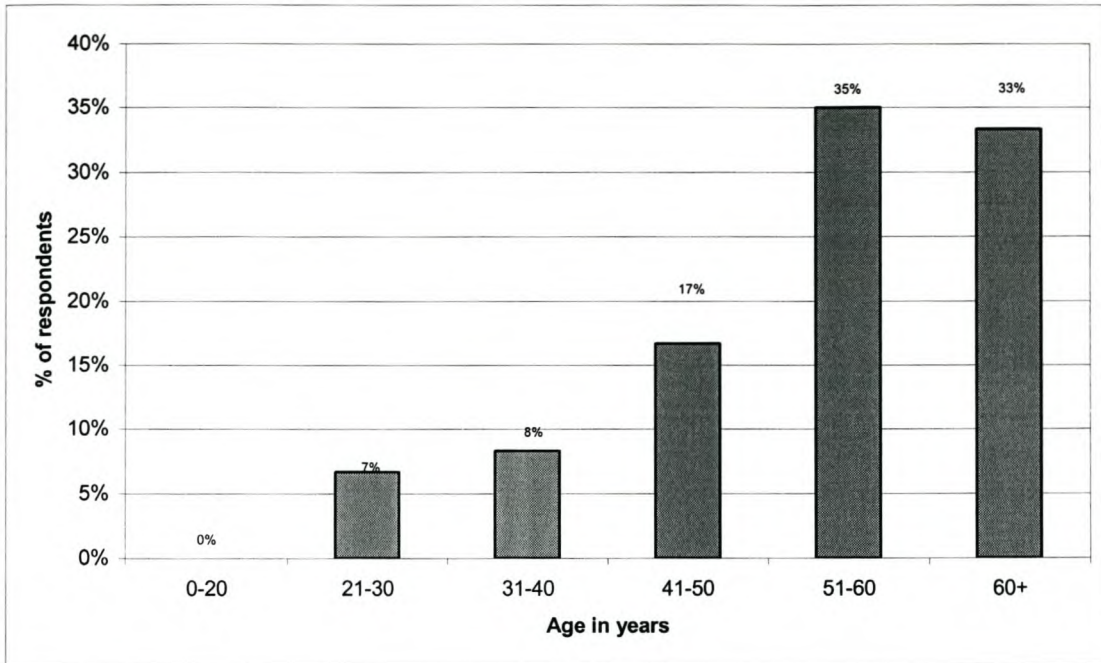


Figure 2
Age distribution of respondents

The respondents indicated that forty percent (40%) of them held professional occupations, while twenty-five percent (25%) held non-professional occupations and another twenty-five percent (25%) held trade occupations. The rest of the group consisted of pensioners, housewives and students (Fig. 3).

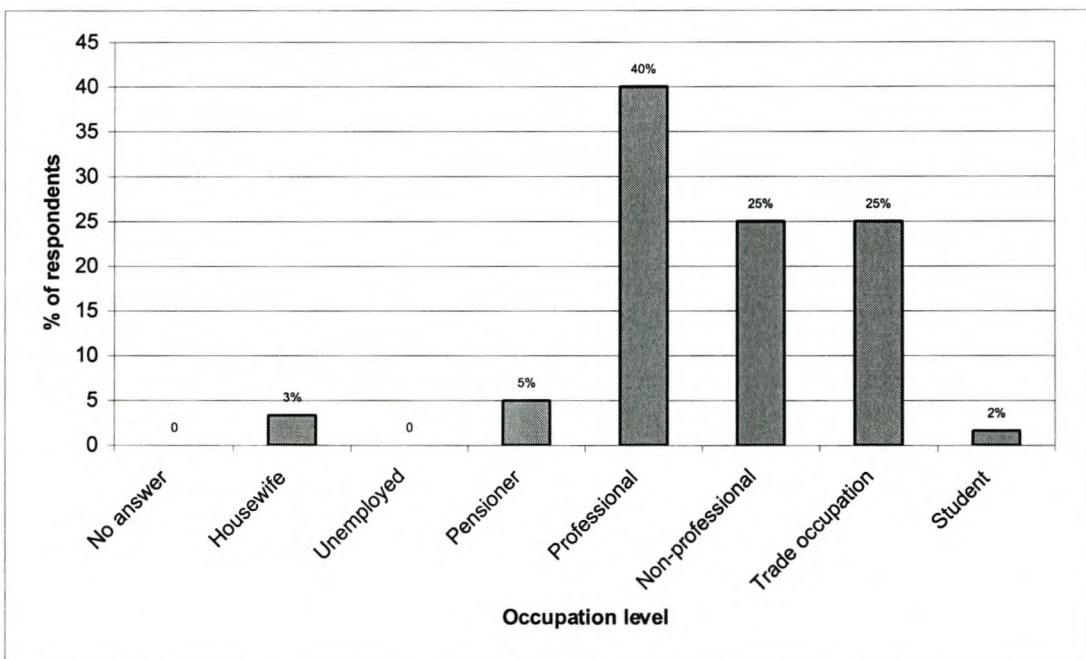


Figure 3
Occupation level of respondents

Educational levels were divided into three categories, namely degree or post-high school diploma, completion of high school and less than completion of high school. Most respondents in this group (58.33%)

fitted into the degree or post-high school category, while twenty-five percent (25%) had high school diplomas, thirteen percent (13.33%) did not finish high school and three percent (3.34%) did not respond to the question (Fig. 4).

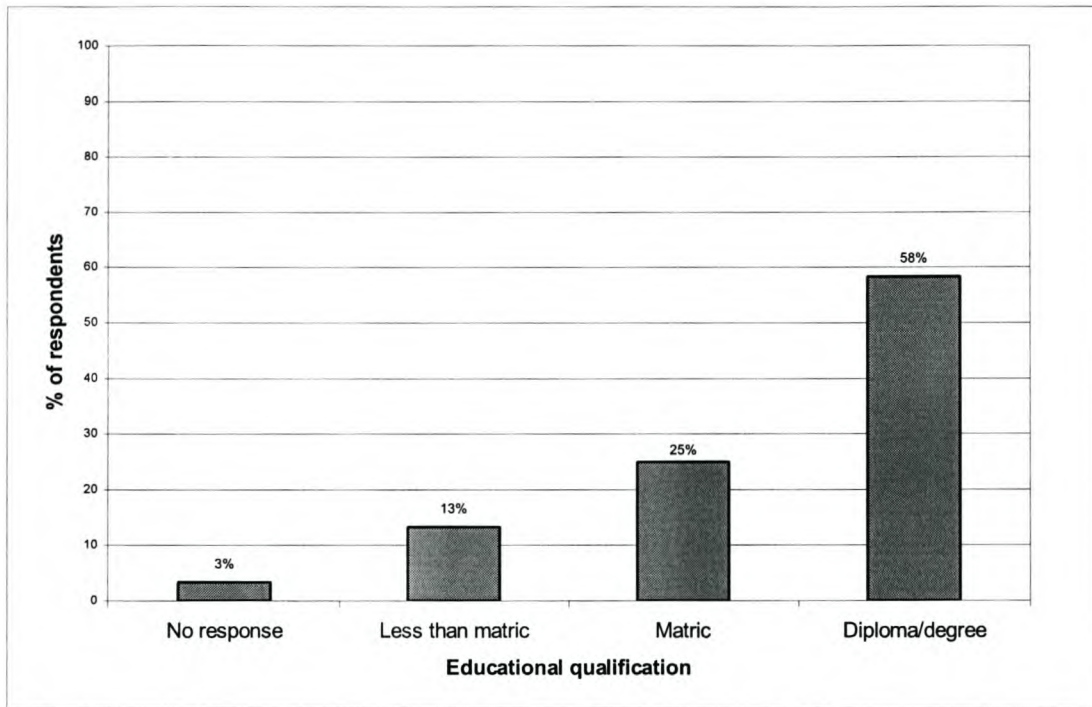


Figure 4
Educational level of respondents

This respondent group indicated that most of them were of the Christian religion (85%), while thirteen percent (13.33%) indicated that they have no religion and one respondent did not respond.

3.2 Eating patterns and habits

According to Steenkamp (1997) Belgian and German consumers evaluate food products on the quality of the product, the price, the brand name or reputation and its freshness thereof. Consumers are increasingly concerned about the environment and are therefore interested in free-range and organic products, as well as products produced by natural production methods (Steenkamp, 1997). Hernández and Seehawer (2002) found that consumers are mostly concerned about the hygiene, safety, organoleptic quality and origin of food, when they judge food quality. Windhorst (2001) and De Montzey (2001) note that consumers are increasingly concerned with the traceability of food products. Consumers want to know where food products come from, who the farmer is and how a product is made (De Montzey, 2001).

All of the respondents in this group indicated that they do eat meat and that they have eaten game meat before. Respondents were subsequently asked where they had eaten game meat. Eight percent (8%) of respondents had eaten game meat in their own or a friends' home, with ninety-two percent (92%) eating game meat in restaurants and hotels, whilst on vacation. Crafford, *et al.* (2002a) researched the marketing of game meat by South African restaurants and found that most customers who eat game meat in

restaurants are tourists visiting South Africa. The tourists were asked whether they liked the taste of game meat. Most of the respondents (90%) indicated that they liked the taste of game meat, while eight percent (8%) did not like it and two percent (2%) did not respond. Respondents had to indicate how often they eat different meat types. The meat consumption patterns of this group of respondents indicated that beef (83.33%), chicken (88.33%) and pork (76.67%) are consumed regularly by most of the respondents (Fig. 5).

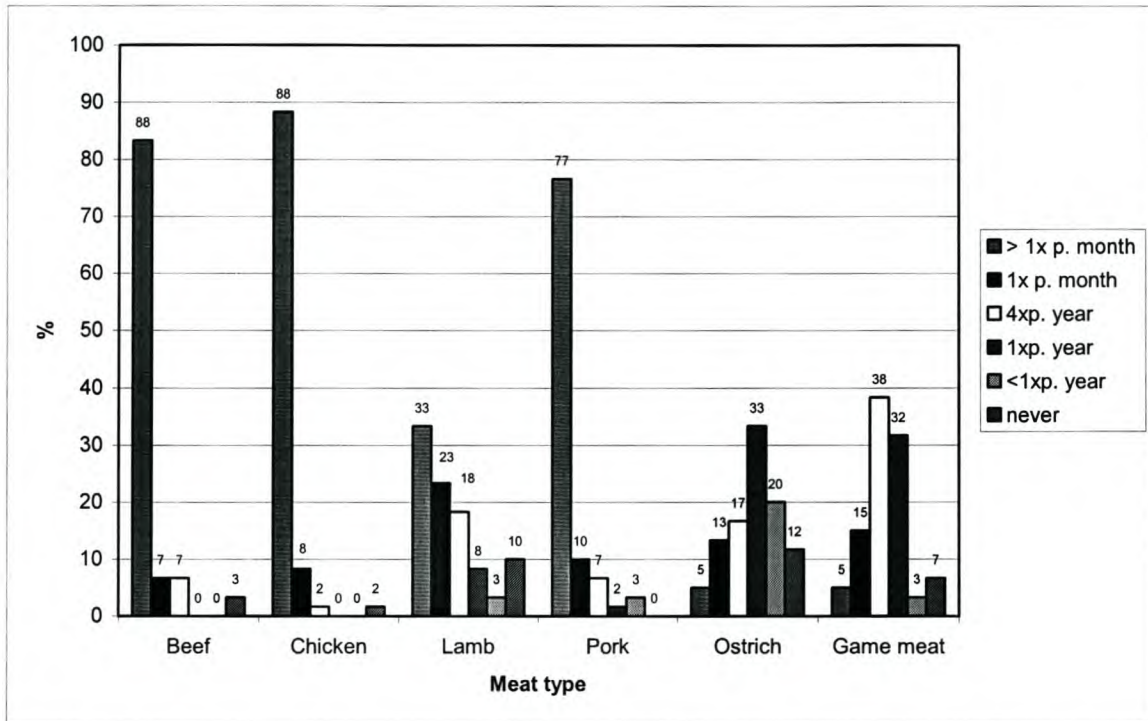
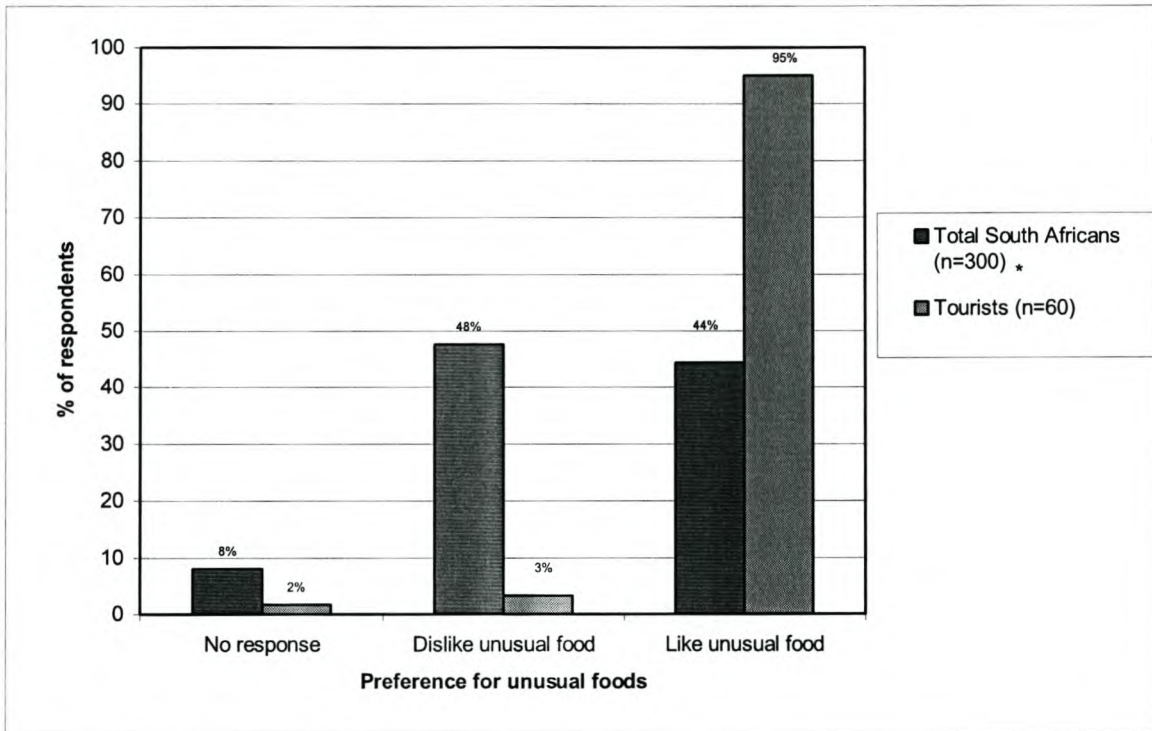


Figure 5
Meat consumption patterns of tourists visiting South Africa

According to Armitstead (1998) consumers are increasingly aware of food issues, including BSE (*Bovine Spongiform Encephalopathy*/Mad-cow disease), genetic modification and fatty acid contents. These growing health concerns have led to a demand for low-kilojoule and low-cholesterol products. The respondents were asked to indicate whether they considered the health aspects of food when they buy and consume food. Health aspects of food were important to more than 81.67%. The respondents were subsequently asked whether they considered game meat to have any health benefits and, if any, to list these benefits. Eighty percent (80%) of the respondents were of the opinion that game meat has health benefits. Some of the health benefits that the respondents listed they thought game meat possesses included “low in fat” (32%), “low in cholesterol” (32%), “low in kilojoules” (32%) and “no BSE”. Game meat is lower in fat than either beef, pork or mutton and is reported to have an average fat content of between two and three percent (Schönfeldt, 1993). It is also lower in saturated and higher in polyunsaturated fatty acids than beef (Viljoen, 1999). According to Hoffman and Bigalke (1999) game meat can be seen as an organic product, as game meat ranching conforms to the requirements for organic agricultural enterprises. These requirements include sustainable soil fertility, minimal damage to the environment, minimal use of non-renewable resources, the enhancement of biological cycles involving micro-organisms, plants and animals, prohibition of agro-chemical pesticides and the careful attention to the impact of farming on the environment and the conservation of wildlife and natural habitats (Madge, 1995; Lampkin & Padel, 1994).

Most of the tourists (95%) indicated that they enjoy eating unusual or exotic foods from time to time (Fig. 6). Crafford, Hoffman, Muller and Schutte (2002b) researched the purchasing behaviour and perceptions of game meat by South African consumers and found that only 44.33% of South African consumers like eating unusual foods.



* Adapted from Crafford *et al.* (2002b)

Figure 6

Preference of tourists visiting South Africa for unusual foods, compared to that of South African consumers

3.3 Consumer purchasing behaviour

The questions on the tourists' buying behaviour was aimed at identifying what influences their purchasing of game meat. According to Verbeke and Vieane (1999) Belgian consumers are concerned with the safety of meat, as the past five years have been characterised by numerous meat-safety crises. European consumers are therefore mainly concerned with the safety of the meat they buy. In order to give insight into the tourist's attitudes towards consuming game meat, they were asked whether they would eat game meat if it was offered to them on that specific day. The majority of tourists (86.67%) indicated that they would eat game meat. Respondents were asked to explain why they would or would not eat game meat. Most respondents (67%) indicated that they would eat game meat because they liked its taste, while reasons for not wanting to eat it included that respondents were afraid wildlife might become extinct (3%). Two percent (2%) of the respondents mentioned that game meat is typical of Africa and therefore they would eat it in South Africa.

Steenkamp (1997) identified a number of current food trends and indicated that exotic and ethnic food types are currently well liked by consumers and will become increasingly popular. Tourists were asked whether they would eat game meat in South Africa as well as in their own country. No significant difference existed between the percentage of respondents who indicated that they would order game meat in a restaurant in South Africa (91.57%) and the number of respondents who would order game meat in their own country (88.33%). Consumers were asked to indicate on a semantic differential line ranging from “dislike to order” (1) to “like to order” (7) to what extent they would like to order different meat types in South African restaurants, with the left-hand side of the line indicating that they dislike ordering a meat type and the right hand side of the line indicating that they like to order a meat type. Most respondents (77%) indicated game meat (on the right-hand side of the scale) as a meat type that they would like to order in a restaurant, followed by ostrich (72%) and chicken (68%). In comparison with this data, Crafford *et al.* (2002b) found that only 49.11% of South African consumers indicated game meat as a meat type that they like to order in restaurants.

Only ten percent (10%) of the respondents have ever hunted. Half of the respondents (50%) felt positive about the culling of game animals, while twelve percent (12%) considered culling to be a negative occurrence. Thirty-two percent (32%) of the respondents indicated that they felt neutral about culling, while six percent (6%) did not respond (Fig. 7).

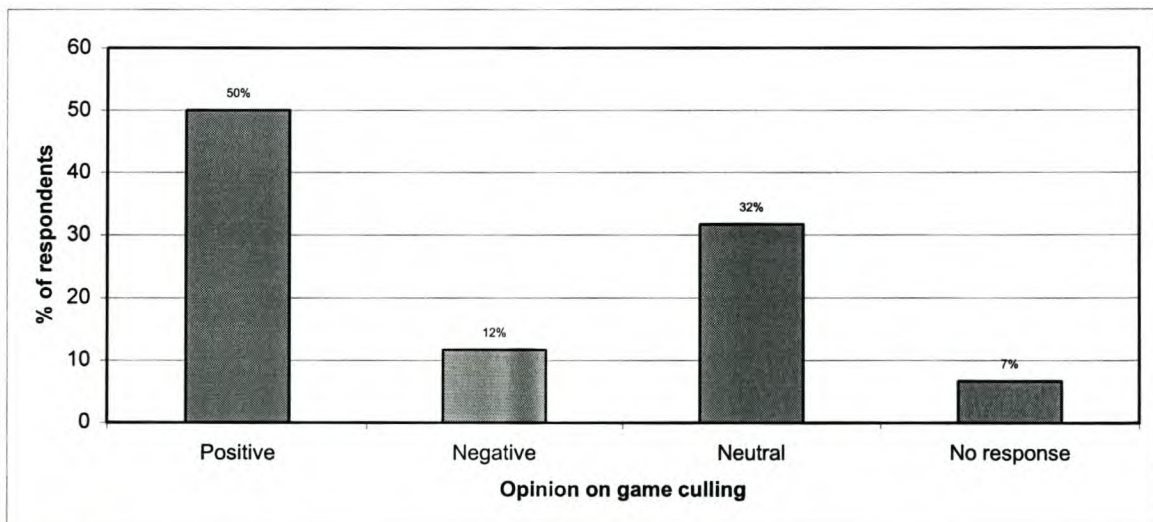
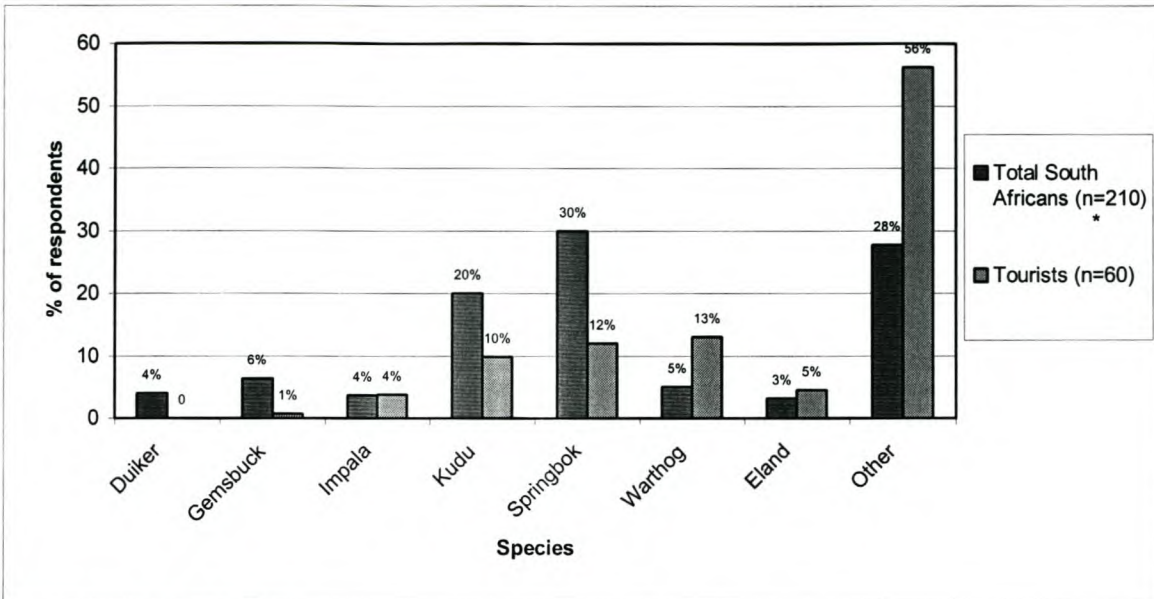


Figure 7

Respondents' opinion on game culling

The majority of tourists (68.33%) have eaten game biltong (salted, dried meat). The species of fresh game meat that these respondents have eaten differs from that of the South African consumers (Crafford *et al.*, 2002b), as many of the respondents also listed the venison that they have eaten in Europe. Respondents' answers thus included game birds, kangaroo, deer, European reedbuck and wild pig, which are not considered as game meat for the purpose of this study. The South African game species that most tourists have eaten included warthog, springbok and kudu (Fig. 8).



* Adapted from Crafford *et al.* (2002b)

Figure 8

Game species eaten by South African consumers and tourists

Promotion can be defined as the marketing communications that inform, persuade and remind potential buyers of a product in order to influence an opinion or elicit a response. Promotion involves personal selling, advertising, sales promotions and public relations (Lamb *et al.*, 2001). Most of the respondents (60%) were not aware of any game meat promotions in South Africa during their stay. This correlates with the findings of Crafford *et al.* (2002a), who found that only 20% of the game meat-selling restaurants in their research indicated that they actively promote game meat.

4. CONCLUSIONS

The purpose of this study was to identify the purchasing patterns and the perceptions of game meat by tourists visiting South Africa. It is evident that tourists visiting South Africa enjoy game meat, know it well and are aware of the health benefits associated with it. It is also clear that tourists want to consume game meat in Africa, but they also want to eat it in their own countries. This provides an opportunity for the export of game meat.

Meat safety scares in Europe have caused many meat consumers to consider the safety of meat above all other qualities. As game meat can be seen as organic, tourists perceive it as safe and healthy.

The respondents indicated that they were not aware of any marketing efforts for game meat. It is apparent that restaurants should promote game meat to tourists, as the tourists in this research indicated that they are keen to eat game meat.

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CHAPTER 5

Retailing of South African game meat: Current trade and marketing trends

ABSTRACT

The purchasing and marketing of game meat by supermarkets and butcheries in the Western Cape Province of South Africa was researched by the survey method. Two structured, self-administered questionnaires were developed that were completed by supermarket and butchery meat buyers. Only two of the supermarket groups in South Africa indicated that they do market game meat. The research found that springbok (*Antidorcas marsupialis*) was the species that most respondents sold. Both of the respondent groups gave contradictory answers regarding the availability of game meat. Both Supermarket groups indicated that they would sell more game meat if available and that a central marketing structure would help facilitate this, and also ensure consistent meat quality. However, only 13 of the 20 butcheries that sell game meat were in favour of a central marketing structure. The respondents indicated that consumers are not adequately informed about the health benefits and cooking methods of game meat. Some of the butchery and supermarket meat buyers were, however, also ignorant of the qualities of meat that are important when buying game meat. It is evident that game meat marketers should exercise stricter control over the quality of game meat. The research showed that supermarkets and butcheries are not promoting game meat extensively enough.

1. INTRODUCTION

The South African game industry operates as a free-market enterprise, with the advantage that it generates opportunities for individual game ranchers and game meat producers. This, however, also creates several problems for producers and consumers alike. In South Africa, for example, there are no standardised cuts or quality standards in place for game meat (Hoffman, 2001). This means that any individual producer may sell any type of game meat cut or quality. Consequently this allows the legal selling of game meat of inferior quality, for example, meat that is pale, soft and exudative (PSE) or dark, firm and dry (DFD), to be sold alongside game meat of good quality. It is also very difficult for individual farmers to market and sell their game meat profitably, because the volume of meat a single farmer can supply is seldom sufficient to interest wholesalers (Conroy & Gaigher, 1982).

Game ranching is a relatively new agricultural industry in South Africa, though already relatively well established. According to Eloff (2002) South Africa had over five thousand (5061) exempted game ranches in the year 2000. A game ranch that is referred to as "exempted" must have suitable fencing to keep animals on a ranch, and entitles the rancher to utilise game through capture, hunting, or trade in live game. Because South African game animals are free running, culling mostly takes place by shooting. This raises the issue that correct culling procedures will maintain meat quality, while excessive stress, inaccurate shots, incorrect bleeding and insufficient cooling of carcasses result in meat of an inferior quality. With all of the utilisation

methods for game, cropping of game animals is necessary because most game ranches do not have predators that aid in the control of animal numbers (Hoffman & Bigalke, 1999).

Eloff (2002) indicated that the prices of some game animals (e.g. springbok/*Antidorcas marsupialis* and warthog/*Phacochoerus aethiopicus*) at live game auctions are decreasing. South African game ranchers will therefore need to find different utilisation methods to increase profit margins. The worldwide tendency towards natural food products and the fact that the South African game industry operates as a free-market enterprise can create lucrative opportunities for the game meat industry. The marketing of game meat on a bigger and more organised scale, and with greater sophistication than has been the case to date, could increase profit margins on game meat (Berry, 1986; Hoffman, 2001). Warfield, Ford and Mitchel (1996) researched the marketing of crocodile meat in Australia and suggest that exotic meat marketing should be targeted at tourists and restaurants and that promotional activities should be centred around point of sale activities.

Being a growing industry in South Africa, it is important to obtain as high a financial return as possible for game meat. Game meat is generally considered a luxury product and therefore fetches high prices even though individual farmers' sale of game carcasses is not subject to any regulation (Conroy & Gaigher, 1982). According to Hoffman (2001), the major game meat processing plants in South Africa seldom sell more than five to eight percent (5-8%) of their production locally.

There is a misconception about the influence of seasonality on the cropping and production of game meat. Game is perceived as a seasonal product, because the traditional hunting season is normally during wintertime. It is furthermore apparent that misconceptions exist regarding the feeding habits and mating patterns of game animals, which leads to the belief that game meat is a product that can only be acquired during wintertime. Every province in South Africa has its own "Hunting Proclamation". In the Western Cape Province the Hunting Proclamation of the Department of Nature Conservation (1974) regulates the cropping/culling of game animals. This legislation, however, does not restrict the culling /cropping of animals on exempted game ranches. The only relevant issue regarding the seasonality of game meat is the fact that ambient temperatures are cold enough during winter to prevent carcasses from spoiling before being dressed and cooled. During summer months meat easily spoils as carcasses are exposed to high temperatures in the sun before the carcass is collected and dressed (Hoffman & Bigalke, 1999). This problem can be overcome in summer if farms are equipped with the necessary cooling facilities and animals are collected and dressed immediately after cropping has taken place. It is thus apparent that the season or time of year does not necessarily have to hamper the cropping and production of game.

A number of universal trends in food consumer behaviour can be identified due to international demographic developments, the increase in tourism, the emergence of global marketing strategies, rapid dissemination of information through mass media and government attempts to influence food consumption. Due to the spread of foot-and-mouth disease, the occurrence of dioxin in poultry, and BSE (*Bovine Spongiform Encephalopathy*/Mad-cow disease) in the 1990s consumers are concerned about the safety and quality of meat products. This has brought about a considerable decrease in meat consumption around the world. Younger consumers are tending to consume less red meat and more chicken and pork, due to the negative

publicity surrounding red meat and health. Nutritional guidelines place increasing emphasis on reducing the ratio of n-6/n-3 polyunsaturated fatty acids in the diet (Dransfield, 2001). Consumers are increasingly concerned about the environment and are therefore interested in free-range and organic products, as well as products produced by natural production methods (Steenkamp, 1997). According to Hoffman and Bigalke (1999) game meat can be seen as an organic product, as game meat ranching conforms to the requirements for organic agricultural enterprises. These requirements include sustainable soil fertility, minimal damage to the environment, minimal use of non-renewable resources, the enhancement of biological cycles involving micro-organisms, plants and animals, prohibition of agro-chemical pesticides and the careful attention to the impact of farming on the environment and the conservation of wildlife and natural habitats (Madge, 1995; Lampkin & Padel, 1994).

According to Bakula and Kedzior (2001), the sensory characteristics are the most important quality attributes of meat and meat products. Game meat is lower in fat than either beef, pork or mutton/lamb and is reported to have an average fat content of between two and three percent (Schönfeldt, 1993). It is also lower in saturated and higher in polyunsaturated fatty acids than beef (Viljoen, 1999). Although juiciness of meat is directly related to the intramuscular lipids and moisture content of meat, the moisture level of the cooked product is mainly responsible for its juiciness. The moisture content of game meat compares favourably with that of beef (Jansen van Rensburg, 1997 & Von La Chevallerie, 1970). Although game meat is less succulent than beef because of lower levels of fat, it is incorrect to assume that it is less juicy than beef.

It is virtually impossible to obtain reliable data of game meat marketing, consumption and consumer perceptions of game meat in South Africa. Consumers are increasingly concerned about meat safety and health. Game meat is a natural resource that is low in fat and can be considered as an organic product. At present no organisation controls the quality and marketing of game meat. Against this background the purchasing and marketing of game meat by South African supermarkets and butcheries were studied. The purpose of this research was to identify current game meat trade and marketing tendencies and to identify the possibilities that exist for game meat in the retail sector.

2. MATERIALS AND METHODS

2.1 Research design

In order to study the trade and marketing of South African game meat, the survey procedure was used. Data were collected by method of the questionnaire technique. Structured questionnaires were designed for supermarket regional meat buyers and butchery meat buyers respectively. The questionnaires were designed to be self-administered in order to give respondents the opportunity to complete the questionnaires in their own time. Interviews were, however, conducted with the supermarket meat buyers, because it was foreseen that additional information had to be obtained from this group. The layout, formatting and sequencing of the questionnaires were carefully planned to ensure that the design of the questionnaires contributed positively to the successful completion thereof. For the same reason the length of the questionnaire was limited to prevent reluctance to respond within the respondent groups.

The questionnaires were developed after an extensive literature review and were designed with the aid of the dendrogram technique (Schutte, 1992). A dendrogram is a visual presentation that conceptualises links and illustrates the different issues pertaining to a specific subject. The dendrograms developed for this study provided the structure for the questionnaires and the interpretation of the data as questions were designed to address the issues indicated on the lowest levels of each of the branches conceptualised by the dendrograms (Fig. 1 and Fig. 2).

Questions were generated regarding the argumentative factors contributing to the problem. In order to get maximum control over the respondent's frame of reference and to ensure that response categories were in line with logical responses, different types of structured questions were used, for example, open questions, closed questions, rank ordering, semantic differential scales and intensity scales. The questions were arranged in a logical order, with similar types of questions following one another.

Formal testing of the questionnaires was done as part of a preliminary study to confirm the validity and reliability of the testing instrument. A two percent (2%) sample of the size of the total respondent group was chosen for this formal testing. All difficulties with the completion of the questionnaires were attended to, in order to ensure that the questionnaires could be self-administered and that translation of the questions did not produce any ambiguities

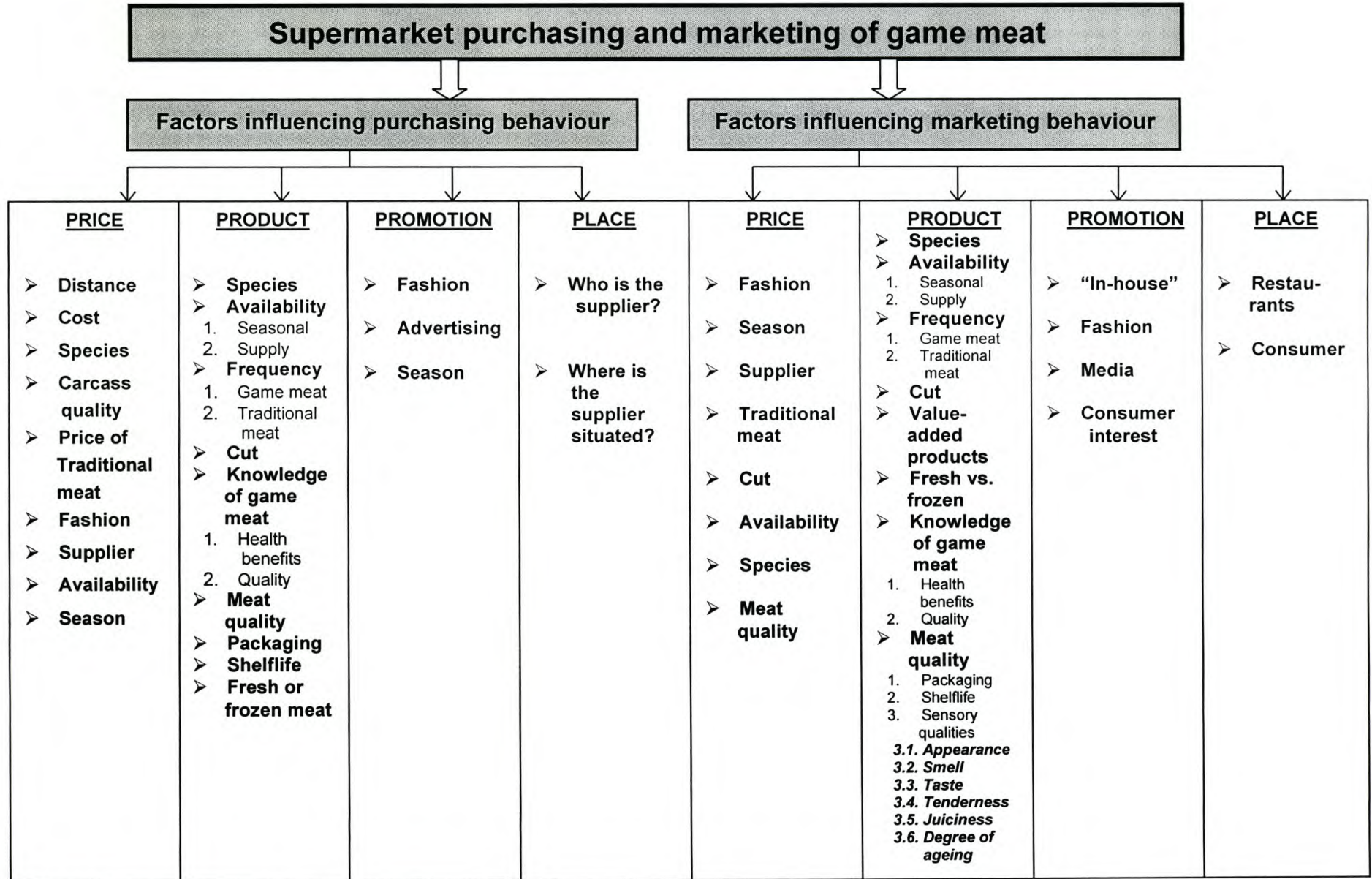


Figure 1

Dendrogram developed to quantify supermarkets' trade and marketing of game meat

Butchery purchasing and marketing of game meat

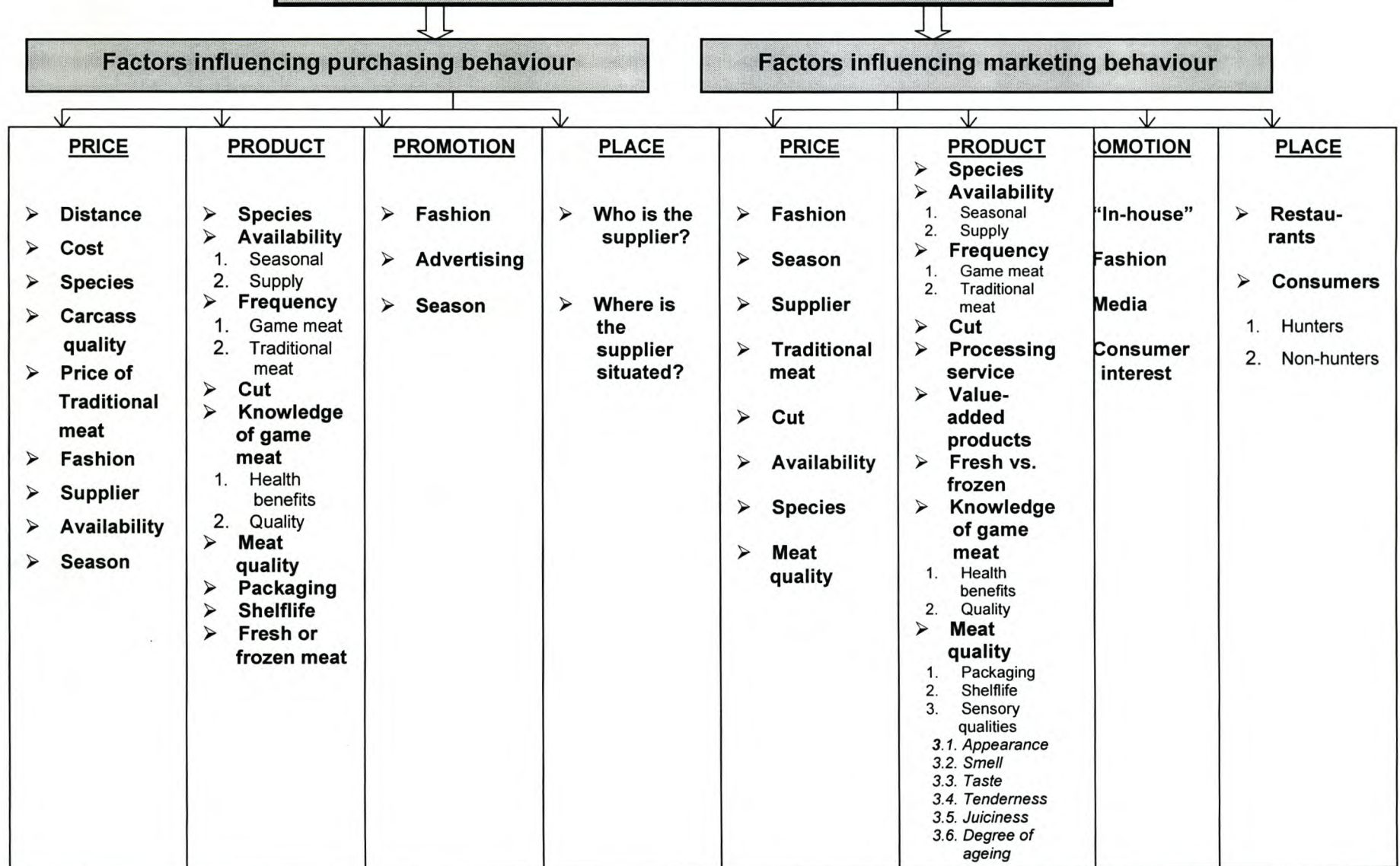


Figure 2

Dendrogram developed to quantify butcheries' trade and marketing of game meat

2.2 Research area

The Cape Peninsula, Western Cape Province of South Africa, was chosen as area of research. There is no reason to expect that the buying pattern of game meat for inhabitants of this area would differ from that of other areas in the Western Cape of South Africa. No research of this kind has ever been done in this research area and the nature of this research is thus exploratory and descriptive.

2.3 Sample size and research procedure

As the objective of this study was to explore the buying and supplying behaviour for game meat, respondents had to be selling game meat. The four main supermarket groups in South Africa were all contacted in order to establish if game meat was available. Only two of the supermarket groups indicated that they do sell game meat. The meat market managers of these two supermarket groups for the Western Cape region were therefore interviewed. Both these meat market managers manage the butcheries of around thirty outlets of their Supermarket groups in the Western Cape.

After contacting municipal, provincial as well as national authorities, it was established that no comprehensive list of butcheries exists for this research area. A list of butcheries was then compiled with the aid of the telephone directories of the Cape Peninsula and Boland areas. A list of 173 butcheries with their telephone numbers was compiled and sorted into alphabetical order. A random number between one and twenty was selected with the help of a computerised random list. The number chosen was the first possible respondent on the list. The total number of possible respondents on the list was then divided by the number of respondents needed (twenty) to give the position of the identified respondents on the list.

As the butcheries chosen for this group had to be selling game meat, these chosen butcheries had to be contacted to identify if they did sell game meat. If a chosen butchery did not sell game meat, it had to be replaced by another. This was done by replacing the identified respondent with the respondent on the list below the originally identified respondent. If this butchery also did not supply game meat, the respondent preceding the originally chosen respondent would be contacted. This replacement continued, alternating between respondents below or preceding the original identified respondent, until a respondent was found that did sell game meat. This process continued until twenty randomly chosen respondents from the butchery group were identified. In order to identify the twenty respondents that did sell game meat, 144 (83%) of the 173 butcheries were contacted before twenty respondents (13.9%; n=144) could be identified. These identified respondents were then asked if they would be willing to complete a questionnaire in their own time and a suitable appointment was then made.

2.4 Data analysis

The completed questionnaires were coded to prepare them for data capture. A template with numeric values (1-7) was used for the unstructured line scales in order to evaluate the positions that respondents indicated on the line scale. A numeric value was then given to the indication on each line scale. The SAS (1999) package was then used to analyse the data. Chi-squared (χ^2) frequencies were used to test for statistical

influence of independent variables on dependent variables. The Chi-square test is used where hypotheses concerning variances have to be tested, frequency distributions need to be analysed and the independence of variables needs to be indicated (Blumen, 1992). Basic statistical analysis was also performed on data that involved numeric values. Percentage means and standard deviation tests were then performed with the SAS (1999) package. The confidence limit used in this analysis was ninety-five percent (95%) throughout. All the discussed effects are, unless otherwise stated, significant ($p \leq 0.05$). Missing percentages in the results and discussion are due to no-response data.

3. RESULTS AND DISCUSSION

3.1 Supermarkets

Two of the four supermarket groups in South Africa indicated that they sell game meat. The other supermarkets in the Western Cape indicated that, because of a lack of availability and quality control for high volumes of game meat, they are not willing to sell game meat. The two supermarket groups that do sell game meat, supplied information on their buying and selling of game meat in the Western Cape region of South Africa. The data they supplied indicate buying and selling patterns for the whole Western Cape and not for individual outlets. For the purpose of the discussion the two supermarket groups will be referred to as Supermarket A and Supermarket B.

Both these supermarkets have several stores in the Western Cape region that sell game meat. Neither of the supermarket groups could indicate how many of their stores sold game meat. According to the meat buyers, sale patterns differ from year to year. They did, however, indicate that stores in the northern suburbs of Cape Town, predominantly inhabited by Afrikaans-speaking consumers, had a higher demand for game meat than the southern suburbs, predominantly inhabited by English-speaking consumers.

3.1.1 Purchasing of game meat

South Africa differs considerably from other game meat-producing countries in that utilisation of game is a private industry, operated as a free-market enterprise. Few large game meat production plants exist and there is no central organisation to market and control the cropping methods and production of game meat (Conroy & Gaigher, 1992). The questions on the purchase of game meat by supermarkets in the Western Cape were aimed at identifying how the supermarkets source game meat, what problems they experience in the supply chain of game meat and at establishing what type and quality of game meat is available to them to purchase. The marketing mix (price, product, promotion and place) was used as a structure for the discussion of data (Lamb *et al.*, 2001).

3.1.1.1 Supermarket Group A

Supermarket Group A indicated that they buy game only in the winter months, end of June to September. They buy approximately 15 000 kg of fresh game meat, two times per week during these months. Game meat is purchased as whole carcasses. They do not know which species of game they buy and thus sell it

as venison and not as a specified game species. This supermarket normally buys game meat from a wholesaler that sources game meat from all over South Africa and Namibia. They make use of this supplier as it is usually reliable and delivers game meat directly to the respective stores where it is sold. This supplier never offers any information on game meat to them. According to this supermarket, their strongest constraint when buying game meat is its availability. They are only able to buy game meat in winter as it is not available to them through the rest of the year in the bulk amounts that they need to buy game meat. Supermarket A admits that the quality of game meat that they buy is not always consistent. They ascribe this problem to the fact that their volume requirement for game meat is very high, making it difficult to control quality. No standardised cuts or quality standards for game meat exists in South Africa (Hoffman & Bigalke, 1999). According to Conroy and Gaigher (1982) it is very difficult for individual farmers to market their game meat, as a single farmer cannot supply sufficient amounts to interest wholesalers.

The qualities that Supermarket Group A considers important when they purchase game meat include tenderness, colour and correct cuts. Game meat is purchased as whole carcasses and cut by each individual store butchery. These individual butcheries are then responsible for the cut and the packaging of the meat. Supermarket Group A contradicts itself as it suggested that they buy game meat in carcasses, but they consider correct cuts an important quality when they purchase game meat. This supermarket group gives no special attention to the packaging of game meat. The respondent was asked to indicate on a line scale the degree to which a list of factors influences this supermarket's buying behaviour for game meat. Numeric values were then given for each answer factor (see 2.4) with a value of 1, indicating that a factor did not influence buying behaviour, and a value of 7, indicating that a factor influenced buying behaviour to a large extent. The factors that this respondent indicated as having an influence to a large extent on buying of game meat included the quality of game meat, the seasonal availability of game meat and the reliability of the supplier (Fig 3).

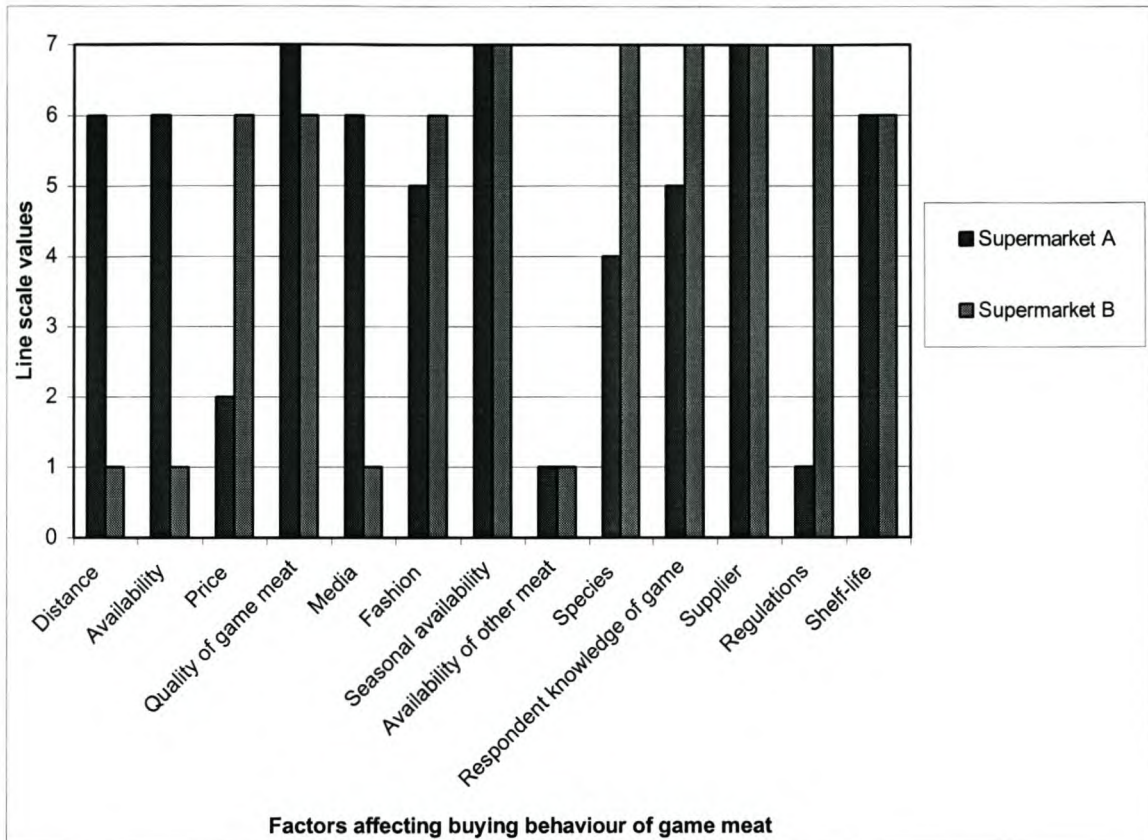


Figure 3

Factors that affect supermarkets buying behaviour of game meat, as indicated on a line scale of one to seven, with one (1) indicating that a factor has no influence on buying, and seven (7) indicating that a factor has an influence to a large extent

When asked to name the strongest constraining factor of this supermarket's buying of game meat, the respondent indicated that the poor availability of game meat restricted their purchasing and marketing of game meat.

3.1.1.2 Supermarket group B

Supermarket B indicated that they buy game meat from March to June each year. The highest volume of game meat is bought during the month of May. This supermarket group indicated that they are able to buy and sell game meat during summer months, but they choose to market game meat during winter, which is perceived as the traditional hunting season.

Supermarket B has its own hunting team that crops animals two times per year in Namibia, the Northern Cape Province and the Western Cape. The hunting teams crop 1500 animals at a time, two times during the months of March to June resulting in a harvest of 3000 animals per season. Only animals cropped by headshots are accepted. This supermarket group then buys the dressed carcasses, head and skin off and weighed per kilogram, from the farmer. No carcasses under 16 kilograms are accepted. The carcasses are transported by the supermarket's own cooled trucks and then distributed to the different stores. The butcheries of each store are responsible for the cutting, packaging and promotion of the game meat.

According to the respondent, the supply of game meat to this supermarket is reliable and of constant quality, as enough game animals are always available and the supplier knows the specifications of this supermarket. The species that are available in large enough amounts for supermarket B to buy are gemsbuck (*Oryx gazella*), springbok (*Antidorcas marsupialis*) and kudu (*Tragelaphus strepsiceros*). The supplier never supplies this supermarket with any information (e.g. nutritional information) regarding game meat.

Supermarket B considers the size of game carcasses, the species of game and the price at which it can be obtained as the most important factors to consider when they purchase game meat. The respondent was asked to indicate on a line scale the degree to which a list of factors influences this supermarket's buying behaviour of game meat. The factors that this respondent indicated as having an influence to a large extent on buying of game meat included the seasonal availability of game meat, species, the respondent's knowledge of game meat, the supplier and regulations regarding game meat (Fig. 3). This supermarket groups contradicts itself regarding the availability of game meat. They indicated that game meat is also available to them during summer months, but they choose to market it only in winter. The respondent then indicates that the availability of game meat influences their buying behaviour, whilst they indicated earlier that game meat is available to them throughout the year. This respondent also indicates that regulations regarding game meat influence their purchasing of game meat. No quality standards or standardised cuts for game meat exist in South Africa. Regulations regarding game meat focus on the conservation of species. Regulations could therefore not hamper the respondents purchasing of game meat.

3.1.2 Marketing of game meat

According to Meisinger (2001) marketing does not merely entail selling products. Marketing can be defined as the process by which a profit is generated through the managing of resources and activities that will ascertain and fulfil the needs and desires of people who buy products and services. The questions on the marketing of game meat by the respondents were aimed at identifying who the game meat consumer is, what product of game meat is available to the consumer and what promotional activities respondents employ to market game meat.

3.1.2.1 Supermarket group A

In order to establish the price at which game meat is sold, relative to other meat types, the respondent was asked to rank six meat types in order of price. Mutton/lamb was rated most expensive, followed by game meat, ostrich, beef and chicken, with pork the least expensive meat type according to this respondent. The respondent was asked to indicate on a line scale the extent to which a list of factors influenced their supermarket's selling of game meat. The factors that were indicated as having an influence to a large extent on their selling of game meat included the availability of game meat, the quality of game meat and the seasonal availability of game meat (Fig. 4).

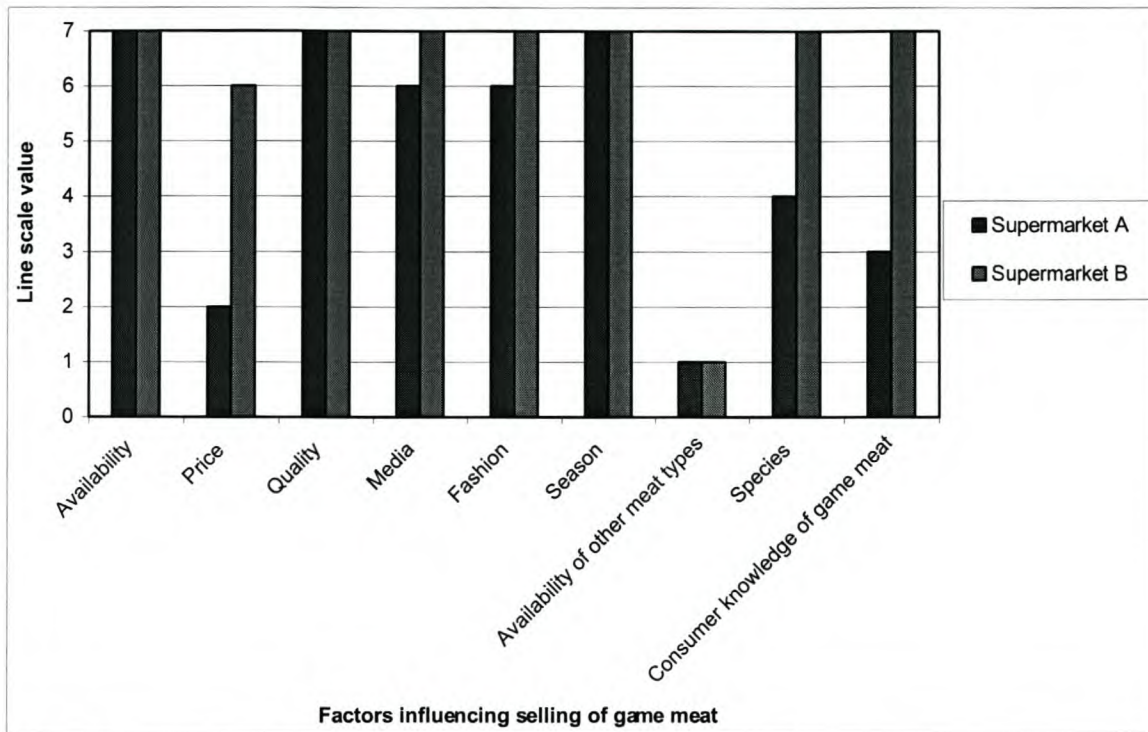


Figure 4

Factors that affect supermarkets selling behaviour of game meat, as indicated on a line scale of one to seven, with one (1) indicating that a factor has no influence on buying, and seven (7) indicating that a factor has an influence to a large extent

This supermarket group sells all game meat as “venison” and does not distinguish between species. Game meat is sold as roasts, goulash and sausage. Frozen game meat is not often sold, as it is very unpopular with consumers. The respondent was asked to rate the popularity of different meat types in supermarket A. Lamb/mutton was rated most popular, with pork and beef second most popular, followed by chicken, with ostrich and game meat rated least popular. Crafford, Hoffman, Muller and Schutte (2002a) studied the purchasing perceptions of game meat among South African consumers and found that lamb, chicken and beef were the meat types consumers rated as the most popular. Game meat is available in this supermarket from June to September every year. According to the respondents, no demand for game meat exists during the summer months. The respondent did, however, indicate that the seasonal availability of game influences their buying and selling of game meat. As they do not have a demand for game meat during summer, seasonal availability surely would not restrict their selling of game meat.

In order to identify the importance of the sensory qualities of game meat for consumers, the respondent was asked to indicate on a line scale to what extent, according to them, a list of qualities of meat is important to the consumer when they buy meat, in comparison with when they buy game meat. This respondent indicated that consumers consider all buying qualities less important when they buy game meat, in comparison with when they buy other meat types (Fig. 5). The largest difference between qualities for game meat versus qualities for traditional meat was indicated for colour. In South Africa game meat is often perceived to be of a dark and unattractive red colour. Apart from stress, another explanation for the darker

colour of game meat is the fact that game animals are more active than traditionally farmed animals, causing more myoglobin to build up in the muscles, resulting in a darker red colour (Hoffman, 2001).

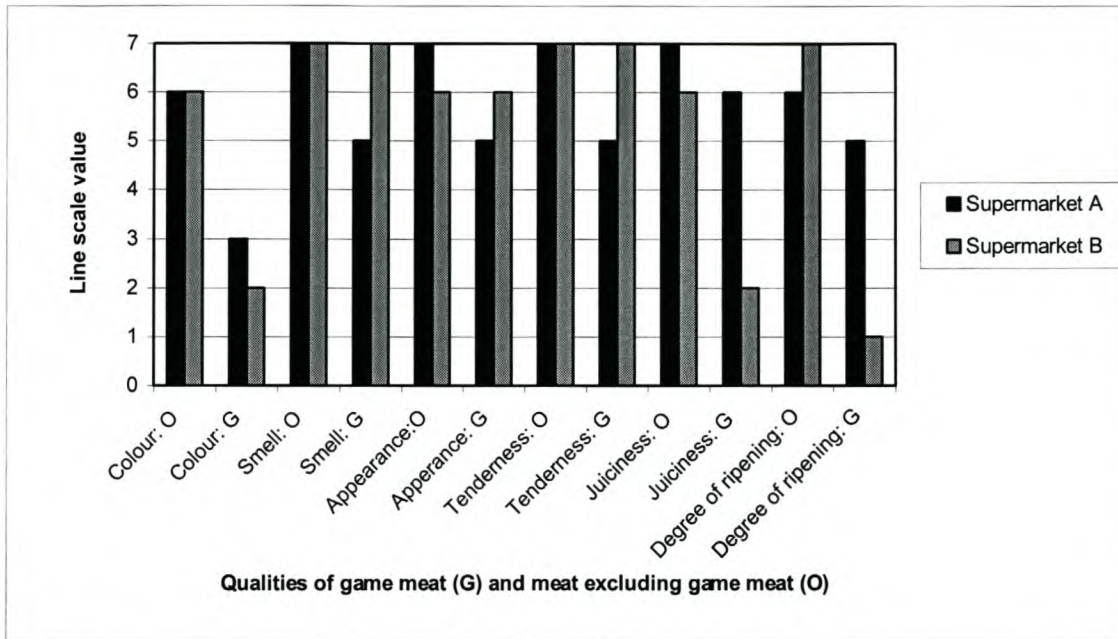


Figure 5

The degree to which (minimum of 1 and maximum of 7) the sensory qualities of meat are important to consumers, according to supermarket meat buyers. A value of one (1) indicates that a quality does not is not at all important, while a value of seven (7) indicates that a quality is very important

The respondent was asked how they considered consumers perceived game meat. According to this supermarket group, consumers see game meat as a unique, traditionally South African product. This respondent further indicated that South Africans perceive game meat as a tough meat type. According to Hoffman (2001), shear values for impala are similar to those reported for pigs, thus indicating that the tenderness of game meat is similar to that of pork. According to Von La Chevallerie (1970) tenderness of game meat is similar to beef.

Consumers also are not aware of the health benefits of game meat. This supermarket group has, however, never done any promotion on game meat and does not supply recipes or suggest preparation methods. This supermarket group has never received any complaints from the public about their selling of game meat.

The respondent indicated that they do sell all the game meat that they have for sale and would be able to sell 75% more than they currently sell, if more game meat was available to them to buy. Supermarket A felt that the establishment of a central organisation for the marketing and supplying of game meat would result in higher sales of game meat.

3.1.2.2 Supermarket group B

The respondent was also asked to rank six meat types in order of price so as to compare the price of game meat relative to that of other meats. Supermarket B ranked mutton/lamb as the most expensive followed by beef, game meat, ostrich and pork, with chicken the least expensive meat type in this supermarket. The respondent was asked to indicate on a line scale the extent to which a list of factors influenced their supermarket's selling of game meat. The factors that were indicated as having an influence to a large extent on their selling of game meat included the availability of game meat, quality of game meat, the seasonal availability of game meat, species available, fashion, the media and the degree of knowledge that consumers have of game meat (Fig. 3). Supermarket Group B again contradicts previous statements regarding the availability of game meat to them. Crafford *et al.* (2002a) found that only 54% of South Africans are aware of the health benefits associated with game meat, whilst only 44% of consumers indicated that they know how to prepare and cook game meat.

Supermarket B mostly sells springbok/*Antidorcas marsupialis* and gemsbuck/*Oryx gazella* meat, but also occasionally sells kudu/*Tragelaphus strepsiceros*. Springbok meat is cut and sold as shoulder, leg, saddle, deboned flank and goulash. Gemsbuck and kudu is sold as deboned leg, deboned flank and fillet. Game meat sausage is also sold. Game meat is packed with rinds of streaky bacon in order to enhance the attractiveness of the packaging. Game meat is sold fresh as, according to this respondent, frozen game meat is very unpopular with consumers. The respondent was asked to rate the popularity of different meat types in supermarket B. Beef was rated most popular, followed by chicken and lamb, pork and game, with ostrich the least popular meat type. Game meat is sold in this supermarket group from the end of March to the end of June, with the highest sales during the month of May. The demand for game meat in this supermarket group is high during the start of winter and decreases towards the end of the season. The respondent indicated that this supermarket is able to sell game meat during summer months, but that there would be no interest from the consumer in buying game meat during this time.

Supermarket B has received individual complaints in the past from individual customers who are opposed to their selling of game meat, as these consumers considered the cropping/culling of game animals as cruel. The respondent was asked to indicate on a line-scale the extent to which, according to them, a list of qualities of meat is important to the consumer when they buy meat, in comparison with when they buy game meat. This respondent indicated that consumers consider colour, juiciness and degree of ageing less important when they buy game meat, in comparison with when they buy other meat types (Fig. 4). The respondent was asked how they considered consumers perceived game meat. According to this supermarket group, consumers see game meat as a very tasty meat type, with the disadvantage that it can be dry and is difficult to prepare and cook. Juiciness of meat is directly related to the intramuscular lipids and moisture content of meat. The lipids in meat function as lubrication and ensure juiciness. The water remaining in the cooked meat product is, however, mainly responsible for the juiciness of meat (Jansen van Rensburg, 1997). Although game is less succulent than beef because of the low fat content, the moisture content of game meat compares favourably with that of beef and it is therefore incorrect to assume that game meat is less juicy than beef. Supermarket B believes that consumers are aware of the health benefits

of game meat and consider game a fashionable meat type to buy, but that consumers are sometimes reluctant to buy it, because they do not know how to cook game meat.

Supermarket B holds each store in their retail chain responsible for its own in-store marketing of game meat. This is done in the format of a competition between the different store butcheries, where each butchery of the respective stores must create a promotional exhibit on game meat. Recipe leaflets are also provided and the butcher informs customers on the recommended cooking methods for game meat. This supermarket sometimes supplies game meat to restaurants. According to the respondent, this supermarket group would be able to sell approximately 20% more game meat if more were available to them. Supermarket B's respondent felt very strongly that the marketing of game meat in general should be improved and that the establishment of a central organisation for the marketing of game meat would further improve game meat sales.

3.1.3 Discussion of Supermarket Groups

The two supermarket groups (A and B) that do sell game meat have two very different approaches in their buying behaviour for game meat. It is apparent that supermarket A has inadequate quality control over its game meat, as it buys from wholesalers that sell the game meat to them as venison. This supermarket also does not attempt to inform consumers about cooking methods or nutritional value. Supermarket B has more control over the quality of game meat and does more to inform respondents. Both these supermarket groups acknowledge that better marketing of game meat is necessary in order to inform consumers on the positive attributes of game meat. It has to be said, however, that it is apparent that both these supermarkets find it difficult to source large volumes of good-quality game meat and therefore understandable that they are not willing to spend a great deal of money on the marketing of a product that they cannot supply to the consumer reliably.

Contradictions regarding the availability of game meat were also demonstrated in the study of Crafford, Hoffman, Muller and Schutte (2002b), in that restaurant meat buyers indicated that poor availability influenced their marketing of game meat. These restaurant buyers, however, sold most game meat during summer and indicated that they are able to supply their demand of game meat during summer. It is apparent that the supermarkets in this research consider game meat as a seasonal product and will continue to market game only during winter.

3.2 Butcheries

The butcheries that participated in this research all sell fresh game meat for a period of more than one month per year. The respondent group included wholesaler butcheries, as well as privately owned butcheries.

3.2.1 Purchasing behaviour for game meat

The main objective for studying the butcheries' purchasing of game meat was to identify problems in the game meat supply chain and to establish the factors that influence butcheries' buying patterns for game meat. The price of game meat will be discussed with the marketing of game meat (3.2.2).

3.2.1.1 Product

A product can be defined as anything, both favourable and unfavourable, that a person receives in an exchange. Game meat is a consumer good and can further be classified as a speciality product (Lamb *et al.*, 2001). According to Kastner *et al.* (2001) USA consumers expect meat products to be of consistent palatability, to be safe and convenient, and to be affordable. The purpose of the questions on game meat as a product was to identify the quality of game meat, the species available, and the cuts and packaging available to butcheries to purchase, as well as to identify whether the butcheries had difficulty in obtaining game meat (availability) and what the butchery meat buyers' knowledge of game meat is.

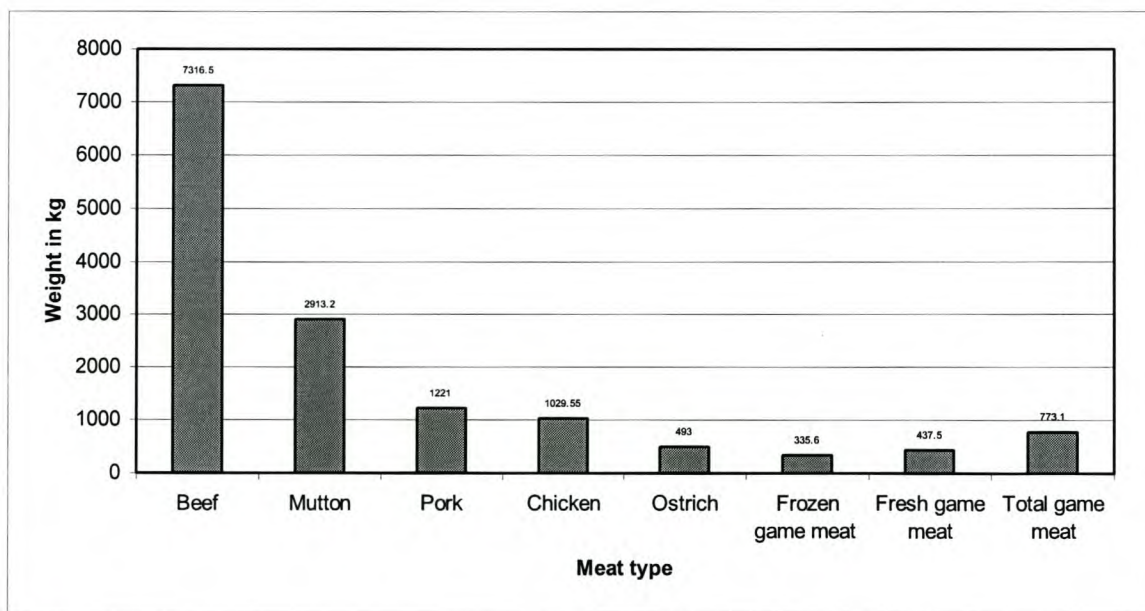


Figure 6

The average amount of meat that the butchery respondents buy per week

In order to establish the purchasing pattern of different types of meat by the respondents, they were asked to indicate how often and how much they purchase of the different meat types (Fig. 6). The average amount for each meat type that the respondents bought per week was calculated. As the sizes and turnover of the respondents' butcheries differ, the average percentage of meat that respondents buy per week was calculated for each meat type per year (Fig. 7).

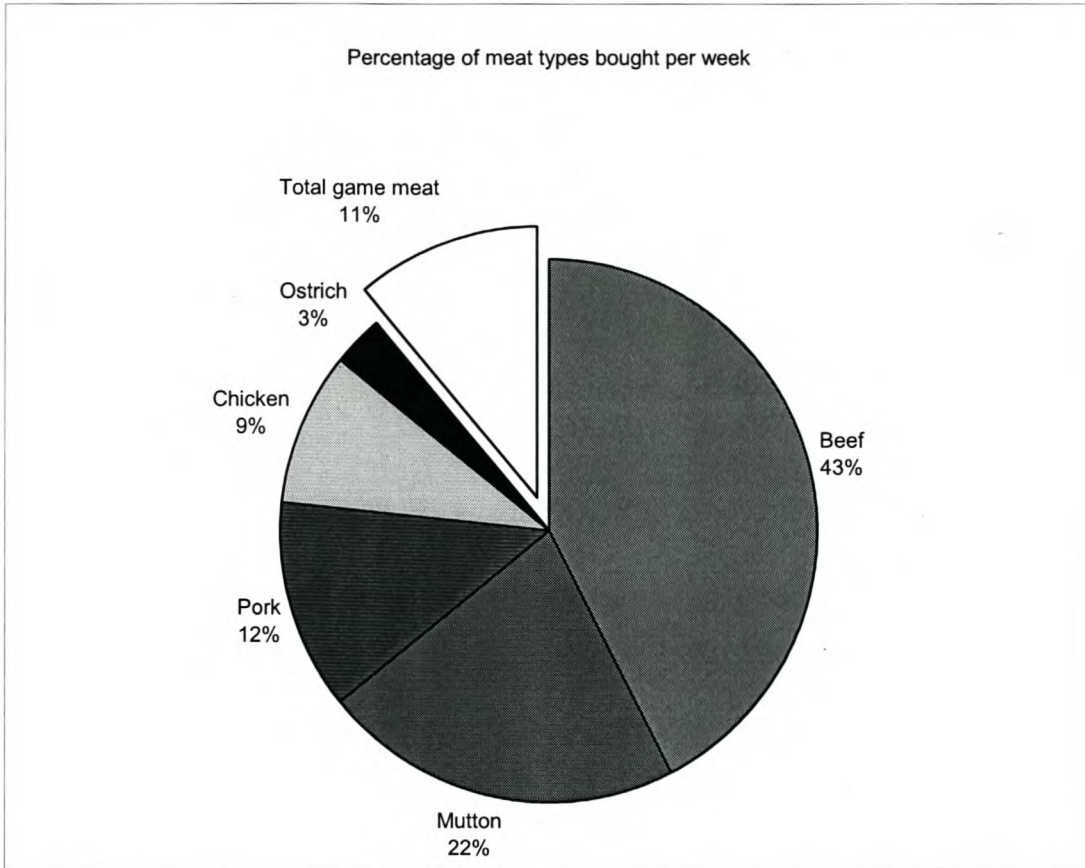


Figure 7

Average percentage of meat types bought per week by butcheries in the Western Cape Province

Beef, followed by mutton/lamb and pork constituted most of the meat bought per week, whilst the total amount of game meat purchased amounted to only 11.01%. This is, however, 7% more than the amount of ostrich and chicken respondents buy per week. The species that are most often available to the butchers included springbok, kudu and gemsbok. Species that are mostly unavailable included bushbuck, duiker, reedbuck, red hartebeest, black wildebeest and zebra. Respondents were asked to indicate on a list of game species whether they purchase the species often, sometimes/occasionally or never. Springbok was the species that most respondents (n=12) purchase often, while eight respondents purchase springbok occasionally. Half of the respondents often purchase kudu, while seven of the respondents purchase it occasionally and three respondents never purchase it (Fig. 8).

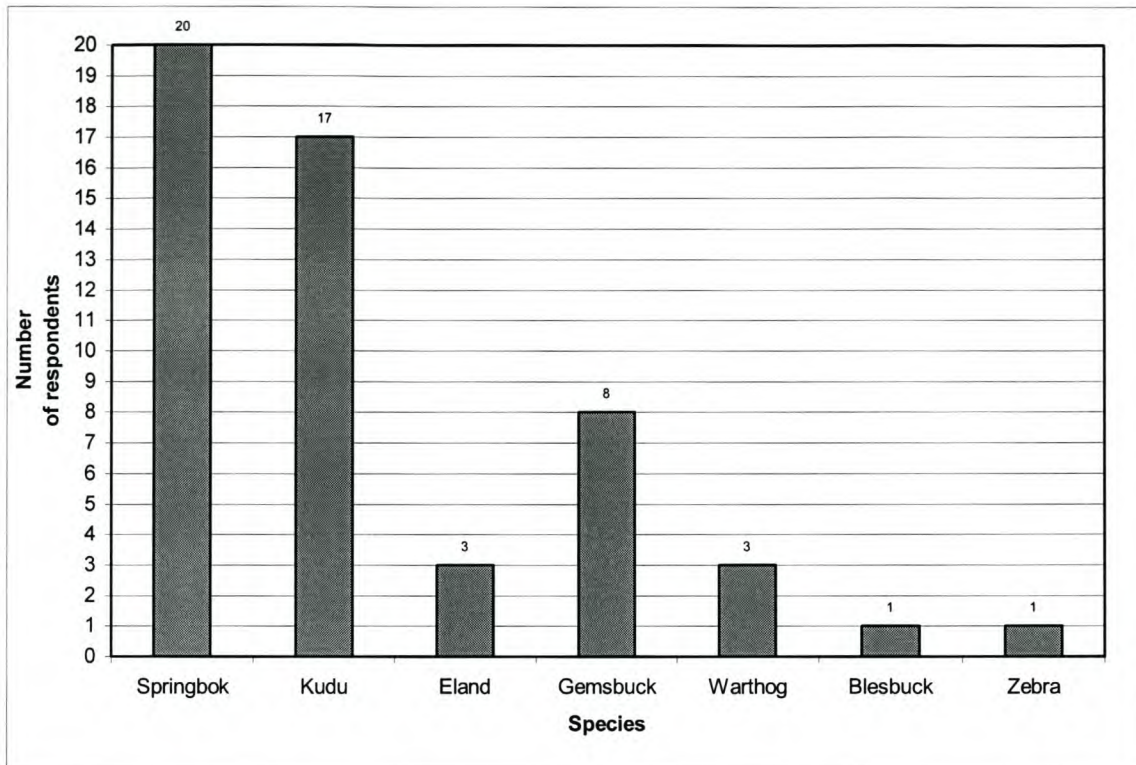


Figure 8
Game species sold by the butchery respondents

Respondents had to indicate on a line scale to what degree they felt a list of factors influenced their purchasing patterns of game meat. Factors that were highlighted as influencing the purchasing of game meat included distance from the supplier, quality of game meat, seasonal availability of game meat, availability of other meat types, the butcher's knowledge of game meat and the supplier. For the purpose of this study the term "seasonal availability" was used to identify whether respondents considered it easier to obtain game meat during winter than at other times of the year.

The respondents were asked to specify the strongest constraining factors that they experience when purchasing game meat. The seasonal availability and the effort involved in obtaining game meat were named by 12 of the respondents as the strongest constraining factors, whilst others indicated the price of game meat and the quality of the meat that is available to them to purchase as strong restraining factors.

Most of the respondents (85%) indicated that they are aware of the health benefits associated with game meat. Respondents were subsequently asked to name the qualities that they consider important when they purchase game meat. A number of qualities were named, but no significant similarities were found. The qualities mentioned included freshness (n=5), type of shot with which the animal was culled (n=3), cleanness of the meat (n=3), the colour of the meat (n=1), if the carcass was bled and cut correctly (n=3) and the age of the animals (n=5). Twelve of the respondents indicated that the game meat they purchase is of consistent quality. The rest of the respondents indicated that the meat they purchase is not of consistent quality, because animals are sometimes badly shot and sizes of carcasses differ depending on the area they come from.

Thirteen of the respondents purchase game meat in the form of carcasses, while five purchase game meat in cuts and two respondents purchase both cuts and carcasses. The respondents who purchase carcasses were asked to indicate how they determine the cuts into which they divide the carcasses. Three of the respondents cut carcasses in the manner requested by customers, while four respondents cut game carcasses similar to that of either mutton or beef.

Respondents were also asked to indicate during which months of the year they purchase game meat. The number of respondents that purchase game meat in each of the twelve months was calculated (Fig. 9). Differences in the number of butcheries that purchase game meat and sell game meat can be accounted for by the fact that the respondents also sell frozen game meat.

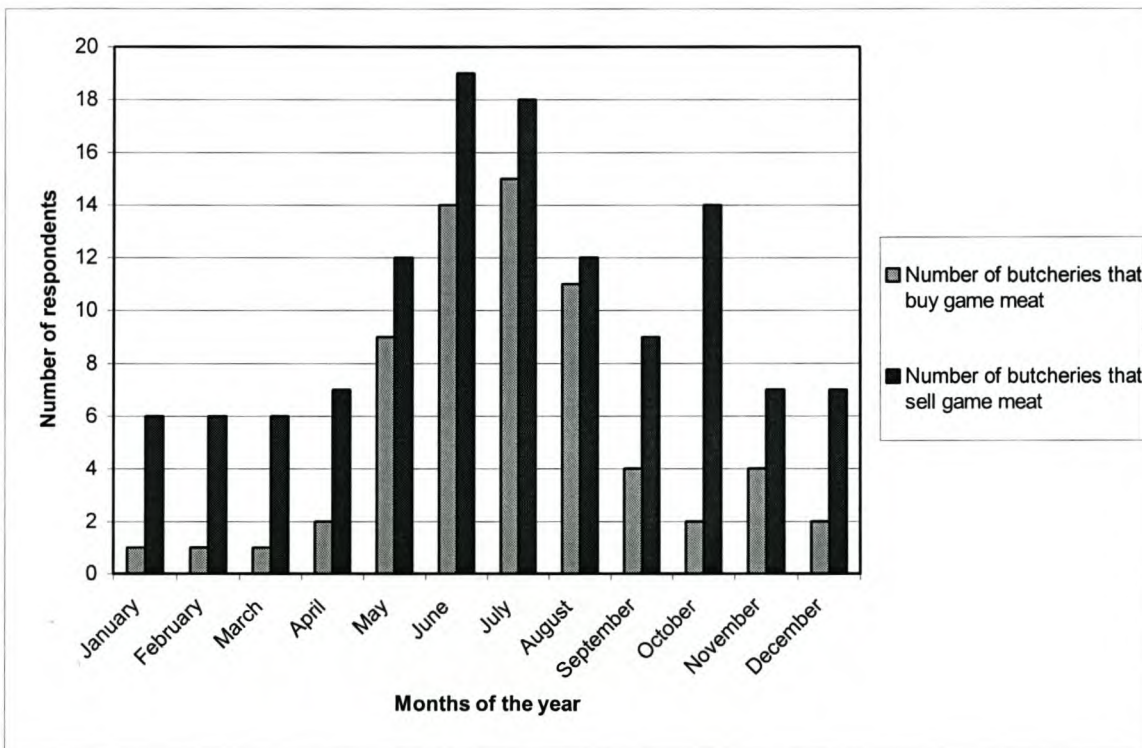


Figure 9
Months of the year that butchery respondents buy and sell game meat

Only one of the respondents indicated that game meat was purchased throughout the year (January to December). Fourteen of the respondents have a demand for game meat during the summer months (November to February), whilst sixteen (80%) of the respondents indicated that they are able to obtain game meat during summer and fourteen (n=14) respondents indicated that they could obtain enough game meat during summer to supply the demand for game meat. The contradiction regarding the availability and seasonal availability of game meat is again apparent. Most respondents indicated that the availability and seasonal availability of game meat influence their buying of game meat; however, here they indicate that most of them can obtain game meat during summer and have a demand for game meat during summer.

3.2.1.2 Promotion

Promotion can be defined as the communications by marketers that inform, persuade and remind potential buyers of a product in order to influence an opinion or elicit a response. Promotion involves personal marketing, advertising, sales promotions and public relations (Lamb *et al.*, 2001). According to Meisinger (2001) promotion involves those activities that build awareness, establish confidence, gain exposure, improve merchandising and offer incentives regarding a product. According to Issanchou (1996) food quality is not an inherent characteristic of food, but is assigned to the physical characteristics of the product and the communications surrounding the product. The purpose of the questions on the promotion of game meat was to identify what type of information, if any, is provided by the suppliers of game meat to the butcheries as well as the South African media to influence or support the buying of game meat.

Ninety-five percent (95%) of the respondents are not aware of any marketing efforts to promote game meat by any form of media. Respondents were asked if they ever receive any promotional information on game meat. Only one of the respondents indicated that receipt of any information. This respondent indicated that the supplier informs them on the properties of game meat.

The respondents were asked how they feel about the establishment of an organisation that controls the selling and marketing of game meat. Thirteen of the respondents felt positively about the possibility of such an organisation and said that this would increase the availability and quality of game meat, improve marketing and educate the consumer. The respondents who felt negatively about such an organisation indicated that the game industry would become too commercialised, resulting in excessively high prices for game meat.

3.1.2.3 Place

It is important that an effective distribution channel should be set in place for any product. A distribution channel can be defined as a set of interdependent organisations that ease the transfer of ownership as products move from producer to business user or consumer (Lamb *et al.*, 2001). According to Meisinger (2001) place has to do with the channels which make products available to consumers. For the purpose of this study, place refers to the supplier, where it is situated, where the meat the supplier provides comes from, and why the respondents use a particular supplier.

Most of the respondents (n=14, 70%) purchase game meat directly from farmers or hunters. The rest of the respondents purchase from abattoirs and wholesalers, whilst one of respondents indicated that, apart from the game meat they purchase locally, they also import kangaroo meat from Australia. The respondents had to indicate where their main suppliers of game meat are located. Suppliers are located in the Western Cape, Northern Cape, North-West Province and Eastern Cape Province of South Africa and also in Namibia and Zimbabwe. Restaurants in the research of Crafford *et al.* (2002b) indicated that most of them purchase game meat from wholesalers. According to fifteen (75%) of the respondents, their supply of game meat is usually reliable, while four indicated that their supply is unreliable; one did not respond. The respondents who indicated their supply is unreliable said that suppliers often do not deliver on the promised dates and

that carcasses differ in size and shot positions where different hunters are concerned. Head or neck shots are preferred when cropping game, as these types of shots normally kill the animal instantly. A shoulder or rib shot could result in animals running substantial distances before dying, an unacceptable practice from a conservation and meat-quality perspective and also results in a substantial loss of meat (Hoffman & Bigalke, 1999).

The respondents were asked to indicate why they make use of their specific suppliers. Nine of the respondents indicated that they use a supplier because of the fair prices that are charged, while four respondents indicated that their suppliers are used because of reliability. Three respondents indicated that they use their supplier because it is the only supplier they can find.

3.2.2 Marketing behaviour for game meat

According to Meisinger (2001) marketing does not merely entail selling products. Marketing can be defined as the process by which a profit is generated through the managing of resources and activities that will ascertain and fulfil the needs and desires of people who buy products and services. Schiffman and Kanuk (1997) suggest that consumers often use the volume of advertising of a product as a measure of the quality of the product. Products that are not new but are extensively promoted can therefore be perceived as being of a higher quality than a similar product that is not as extensively promoted.

The respondents were asked to indicate on a line scale the extent to which a list of factors influenced their selling behaviour for game meat. The seasonal availability of game meat was the factor that most respondents (n=16, 80%) indicated as an influence on their selling of game meat. Other factors that influenced selling of game meat included, the price of game meat and the consumer's degree of knowledge of game meat. Respondents indicated that the media and fashion did not influence their selling of game meat. As discussed earlier, the contradiction regarding the availability of game meat again emerges.

3.2.2.1 Price

Consumers often consider price to be the most important variable when making buying decisions. Price is compared to the perceived value of a product. Unlike what many retailers believe, the value of a product is determined by consumers and not by retailers (Lamb *et al.*, 2001). The objective of the questions regarding the price, for which the butcheries market game meat, was to establish how the price of game meat compares to the price of other meat types (beef, mutton/lamb, pork, chicken and ostrich). The current average prices for mutton, beef and game meat as asked by a supermarket and butchery is shown in Table 1.

Table 1

Prices of mutton, beef and game meat in Rand per kg at a retailer of each of the respondent groups (August 2002)

Species	Cut	Supermarket price (R/kg)	Butchery price (R/kg)
Mutton	Leg	39.98	35.98
Beef	Silverside	36.98	34.98
Game meat (Springbok)	Leg	25.98	39.98

Butchery meat buyers were asked to arrange different meat types in order of price, from the most expensive to the least expensive. Beef was rated as the most expensive meat type, with mutton and game the second and third most expensive. Game meat was followed by ostrich and pork, with chicken as the least expensive meat type. The respondents indicated that the price of game meat has an effect on their selling of game meat. Table 1 illustrates current prices of game meat in a supermarket and butchery setting. This illustrates that game meat is in fact marketed at a more expensive price than either mutton/lamb or beef.

Dransfield, Zamora and Bayle (1998) studied the effect of information and price index on the consumer selection of steaks and found that consumers preferred buying higher-priced steaks to lower-priced steaks when they had no knowledge of its eating quality. After tasting the steaks, consumers chose the most tender meat, regardless of its price. This correlates with the findings of Groves (2001), who found that consumers expected more expensive products to be of a higher quality, as well as those of Verbeke and Viaene (1999), who reported that consumers perceive meat with low prices to have low quality. Dransfield *et al.* (1998) further concludes that most consumers are not prepared to pay more for meat, when basing their judgement solely on the appearance of meat, but are prepared to pay more for guarantee of quality.

3.2.2.2 Product

According to Bukula and Kedzior (2001) the most important qualities that consumers look for in a meat product are the sensory qualities. According to Kastner *et al.* (2001) USA consumers expect meat products to be of consistent palatability, to be safe and convenient, and to be affordable.

Respondents were asked to indicate on a semantic differential line ranging from "unpopular" (1) to "popular" (7) to what extent they would consider different fresh meat types to be popular with consumers, with the left-hand side of the line indicating that a meat type is unpopular and the right hand side of the line indicating that a meat type is popular. Mutton/lamb was rated as the most popular meat type, followed by beef and chicken. Pork meat was the fourth most popular meat type, with game meat and ostrich the least popular meat types. This correlates with the findings of Crafford *et al.* (2002a) who found that consumers rated mutton/lamb as the meat type they were most likely to buy in a butchery.

Respondents were asked to indicate the popularity of different products of game meat. These game meat products included frozen game meat, game biltong, dried game sausage, fresh game sausage and fresh game meat. Most respondents indicated game biltong (n=17, 85%) and dried sausage (n=16, 80%) as a popular game product. Half of the respondents indicated that fresh game meat is a popular meat type. Nine (9) respondents indicated that game sausage is a popular game meat product.

Respondents were asked to indicate on a line scale the extent to which a list of qualities were perceived to be important to the consumer pertaining to game meat and meat other than game meat (e.g. pork, lamb, chicken). According to the respondents, consumers regard the qualities of smell and ripeness as less important than colour, appearance, tenderness and juiciness for meat other than game. For all the qualities listed, consumers regarded them as less important when applied to game meat than to other meat types (Fig. 10).

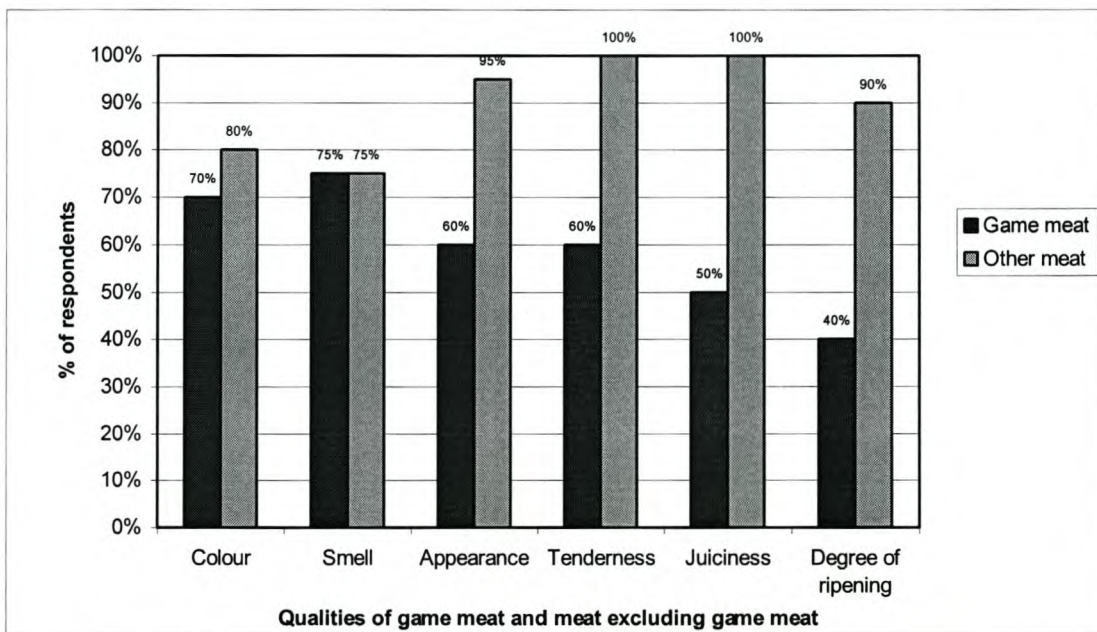


Figure 10
Percentage of butcheries indicating the different sensory qualities that are perceived to be important to the consumer

Thirteen of the respondents indicated that they give special attention to the packaging of game meat. Four of the respondents indicated that they trim and lard game meat before they package it, while nine respondents vacuum pack the meat.

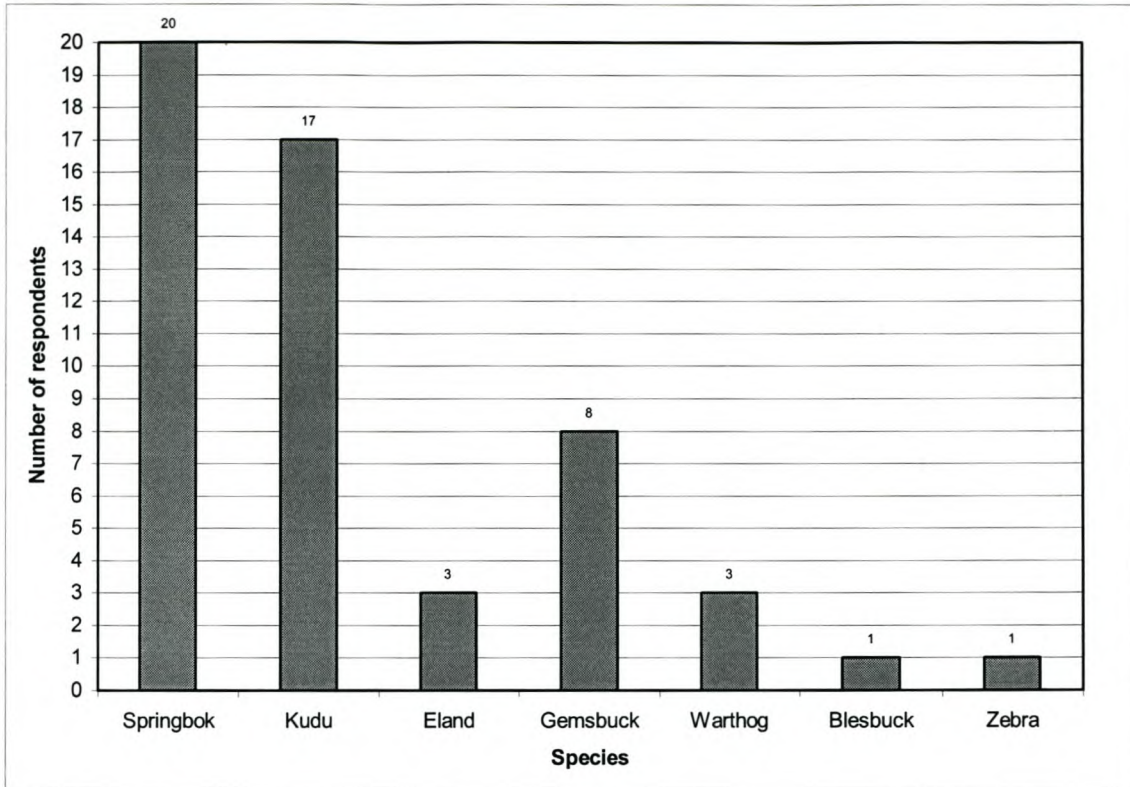


Figure 11
Game species usually sold by butcheries in the Western Cape

Respondents were asked to indicate which species of game meat they usually sell (Fig. 11). All of the respondents (100%, n=20) usually offer springbok meat, while 85% (n=17) offer kudu regularly. Crafford *et al.* (2002a) found that springbok is the game species most consumers have eaten. Von La Chevallerie (1972) found springbok to be the most tender of the game species and also found that sensory analysis on a number of game species rated springbok to be superior in flavour compared to other game species. It is also interesting to note that these species are the dominant species found in the regions where the butcheries indicated that their game meat suppliers were situated.

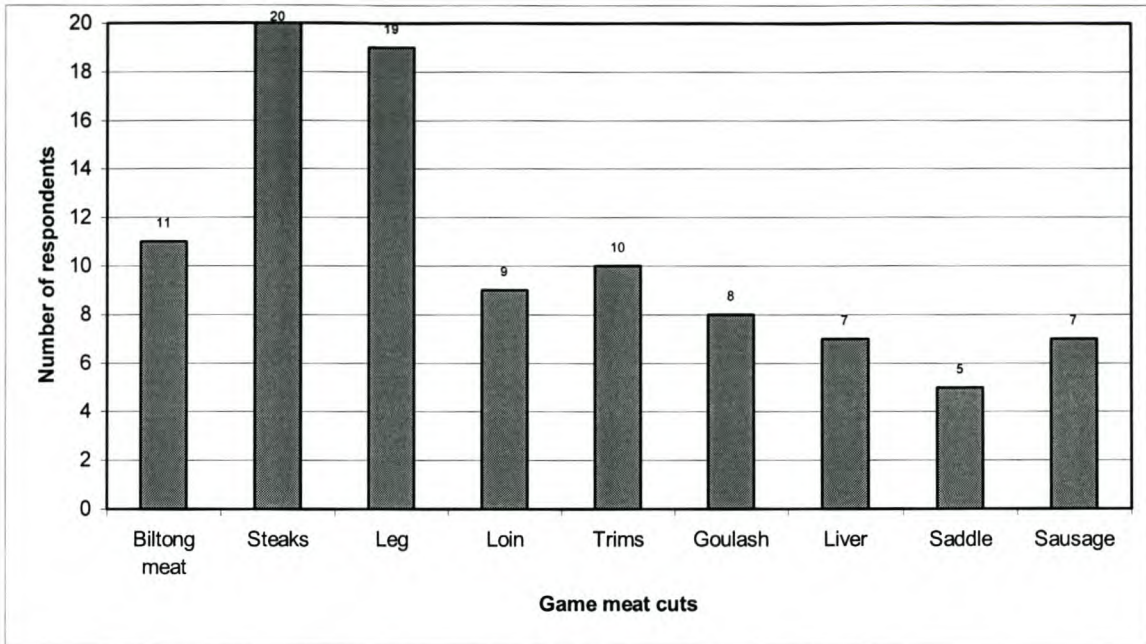


Figure 12

Game meat cuts usually sold by butcheries

Respondents were asked to indicate the different game meat cuts that they market (Fig. 12). All of the respondents (100%, n=20) offer game meat steaks, while 95% (n=19) offer leg cuts. It seems that bone-in cuts are not offered regularly. Jansen van Rensburg (1997) found that bone-in cuts tend to be juicier than steaks or loins and also have a more typical game flavour.

Most of the respondents (90%, n=18) indicated that they sell more game meat at certain times of the year, with the most game meat being sold during the winter months (June, n=16; July, n=17; August, n=14). These are, however, the months that most of the respondents indicated that they do offer game meat. Two of the respondents indicated that they have a specific demand for game meat during December. This could possibly be linked to the festive season. Six of the respondents did, however, indicate that they do sell game meat from January to December.

Most of the respondents (n=16, 80%) indicated that sell value-added game meat products. Fifteen of the respondents indicated that they sell game biltong, dried sausage and fresh sausage, while ten of the respondents sell deboned shoulder and nine sell rolled game roasts. Seven of the respondents sell marinated game fillets and marinated game kebabs. Other value-added products that the respondents sell include smoked game meat (n=2), game meat salami (n=1) and game carpaccio (thinly sliced raw fillet) (n=1).

Respondents did not agree on the reasons why more consumers do not purchase game meat. Some of the respondents ascribed this to consumers' lack of knowledge of cooking methods and positive attributes of game meat, whilst other respondents said that the taste of game discouraged consumers from purchasing game meat. Other reasons included the high price of game meat and insufficient marketing of game meat. Six of the respondents have had customers who were not in favour of their selling of game meat. Most of

these customers thought it cruel to hunt and were therefore opposed to the sale of game meat. According to thirteen of the respondents, consumers are not aware of the health benefits of game meat.

Respondents were asked to indicate what they thought consumers see as the positive and negative attributes of game meat. According to the respondents, the positive attributes that consumers attribute to game meat include that game meat is healthy and low in fat, it is a different type of meat that provides consumers with a variation from other meat types and it has a different taste. Negative attributes that were listed included the poor availability of game meat, the price of game meat, the lack of knowledge of cooking and preparation methods for game meat, and the fact that game meat can sometimes be drier than other meat types. This correlates with the findings of Crafford *et al.* (2002a) in their study of consumer perceptions of game meat.

3.2.2.3 Promotion

According to Jansen van Rensburg (1992) it is imperative that game meat marketers be personally involved in the promotion of game meat. The questions surrounding the promotion of game meat by the respondents were aimed at establishing what type of promotion the respondents have undertaken for game meat. The respondents were asked if they have ever made any effort to inform consumers on the health benefit of game meat. Eight of the respondents indicated that they have attempted to do so, with six indicating that they have conversations with their customers on game meat, while one respondent labelled game meat sausage with a "low-fat" label and one respondent gave cooking demonstrations on game meat in the butchery. Thirteen of the respondents regard game meat as a fashionable meat type. Half of the respondents (n=10) indicated that they do recommend cooking methods for specific cuts and species of game meat to consumers.

3.2.2.4 Place

The questions on the place of marketing were aimed at establishing who the consumer is that purchases game meat from butcheries. Twelve of the respondents supply game meat to restaurants as well as retail consumers, while eight only sell to retail consumers. Most of the respondents (n=17, 85%) indicated that some of their clients are hunters. These respondents (n=17) were asked to indicate what percentage of their game meat-purchasing customers are hunters. The respondents indicated that an average of 14.75% of their game meat-purchasing clients are hunters. Fifteen of the total respondent group indicated that they offer a processing service to hunters for the game meat that they themselves hunt.

4. CONCLUSIONS

Of the four main supermarket retail groups in South Africa, only two sell any form of fresh game meat. The other two supermarket groups indicated that, because of a lack of availability and quality control for high volumes of game meat, they are not willing to sell game meat.

It is possible to conclude that the supermarkets that do sell game meat should improve their sourcing of game meat and apply strict quality control over game meat before comprehensive marketing is done. Steenkamp (1997) noted that value-added products that are also time-saving for the consumer, will become increasingly popular. A market niche for game meat can be created if value-added products (e.g. kebabs, steaks marinated sauces, stir-fry strips with recipes, etc.) are developed that facilitate cooking, and recipes and information are supplied with game meat, as it is apparent that consumers need educating regarding the health aspects and preparation methods for game meat.

There is no quality grading system for game meat in South Africa. The butchery respondents did not agree on the qualities that are important when they buy game meat. It is therefore possible to conclude that the game meat that butcheries sell is of varying quality. The butchery respondents further indicated that consumers do not consider the quality of game meat as important as that of other meat types. This correlates with the findings of Crafford *et al.* (2002a) that consumers regard the sensory qualities (colour, smell, appearance, tenderness, juiciness and ripeness) of meat less important when they buy game meat than when they buy meat other than game. There is no reason why good-quality game meat should not be subject to the same quality standards than other meat types. It can thus be concluded that consumers are uneducated regarding the sensory qualities of game meat, and because the meat that retailers such as butcheries and supermarkets sell varies in quality, consumers are led to believe that they should expect game meat to be of poor quality.

Consumers are, according to supermarket and butchery respondents, poorly educated regarding the health aspects and preparation methods of game meat. This correlates with the findings of Crafford *et al.* (2002a) on consumer perceptions regarding game meat. There is no organisation that controls the marketing of game meat and it is therefore the responsibility of butcheries and supermarkets that sell game meat to inform consumers and market game meat. Schiffman and Kanuk (1997) suggest that consumers often use the volume of advertising of a product as a measurement of the quality of the product. Products that are not new but are extensively promoted can therefore be perceived as being of a higher quality than a similar product that is not as extensively promoted. If the volume of advertising by the supermarkets and butcheries in this research is used as a measure of quality, then the quality of game meat should be perceived as poor. Crafford *et al.* (2002a) found that consumers indicated that most of them are not aware of any marketing effort by any form of media to promote game meat.

High-priced game meat can provide an initial advantage to promoting game meat, as according to Dransfield *et al.* (1998), consumers will perceive expensive meat to be of superior quality. This will possibly promote game meat to consumers who do not know South African game meat. It is, however, important that the product that is presented is of superior quality, otherwise consumers will not be willing to pay more for game meat than for other meat types. According to Crafford *et al.* (2002a), South African consumers are not willing to pay more for game meat than other meat types.

The contradictions regarding both the supermarkets' and butcheries' perceptions of the availability of game meat was discussed in the results. It is interesting to note that Crafford *et al.* (2002b) found the same contradiction in their research regarding the purchasing and marketing of game meat by restaurants. It is

thus possible to conclude that not only the perceptions of consumers, but also that of marketers of game meat, suffer from a lack of knowledge regarding game meat.

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CHAPTER 6

Purchasing and marketing of game meat in South African restaurants

ABSTRACT

The purchasing and marketing of game meat by South African restaurants was researched by the survey method with the aid of a structured, self-administered questionnaire. Chi-squared frequencies were used to test the independence of data. The research group consisted of 20 restaurant meat buyers that purchase game meat regularly. The results showed many contradictions regarding the price and availability of game meat. The South African game meat market operates as a free-market enterprise, providing copious opportunities for producers and marketers. Restaurants are not making use of this opportunity. Restaurants indicated that they buy more game meat per week than either pork or ostrich, and that they sell most game meat during the summer month of December. This research showed that restaurant meat buyers are poorly educated regarding the sensory and quality attributes, as well as the marketing of game meat. Springbok (*Antidorcas marsupialis*) and kudu (*Aepyceros melampus*) were indicated as the two game species that most respondents regularly have available. All of the restaurants indicated that they offer game meat steaks, whilst 13 indicated that they offer game loin and 11 indicated that they offer game goulash. It was identified that most game meat eaters in restaurants are tourists visiting South Africa. This provides numerous opportunities for the restaurant industry as well as for export possibilities.

1. INTRODUCTION

A number of universal trends in food consumer behaviour can be identified due to international demographic developments, the increase in tourism, the emergence of global marketing strategies, rapid dissemination of information through mass media and government attempts to influence food consumption. Consumers are seeking to economise on products that are less important in order to allow themselves to buy luxury products. For example, consumers buy in-store brands for necessary grocery items, whereas they buy exotic, gourmet and ethnic items for unnecessary pleasures. A growing trend exists that more consumers regularly eat at restaurants or take-away restaurants (Steenkamp, 1997).

South Africa is experiencing a surge in tourism at the moment. According to Van der Merwe and Saayman (2002) tourism is the fourth largest industry in South Africa and is currently growing at a steady rate. According to the Cape Town tourism bureau (2001), Cape Town International airport's statistics show an increase of 30% in international departures and arrivals from April 1995 to December 2001, thus indicating that South Africa's popularity as a tourist destination is growing steadily. This surge in tourism gives South African industries ample opportunities to market "African" products, specifically for tourists. South African game meat could be an ideal product to market to tourists. Introducing game meat as a quality product to overseas tourists could also strengthen the export possibilities for game meat. According to recent research

by Crafford, Hoffman, Muller and Schutte (2002a) on the expectations and perceptions of South African game meat among tourists visiting South Africa, 100% (n=60) of the tourists participating in their research have eaten South African game meat, while 86.67% indicated that they would eat game meat again in South Africa, because they liked it. This research confirms that South African game meat is an ideal product to market to tourists visiting South Africa.

The purpose of this research is to study the purchasing and marketing of game meat by South African restaurants. In order to illustrate the necessity of the study, it is vital to understand the game meat market in South Africa.

The game meat market in South Africa is unique in that meat, obtained from free-running animals, is sold in a free-market environment. Meat from all game animals is generally referred to as venison (Jansen van Rensburg, 1997). It is, however, advisable that South Africa should distinguish game meat from venison, as game animals farmed for meat in Australia, New Zealand, Europe and America originate predominantly from domesticated animals, whereas South African game meat originates from wild, free-running ungulates. For the purpose of this study, game meat will refer to meat from game antelope in Africa.

What further differentiates South African game meat is the fact that a large array of species is collectively referred to as game meat. In South Africa game species mostly consist of the order of *Artiodactyla* and the family *Bovidae:Antelope*. The *Antelope* family consists of eight families of subspecies and is comprised of a total of over thirty-eight species of varying sizes, ranging from animals as small as the blue duiker (*Cephalophus monticola*) with an average live weight of 4 kg, to animals as large as the buffalo (*Syncerus caffer*), with an average live weight of 800kg; all are suitable for consumption (Smithers, 1983). Of these species, springbok (*Antidorcas marsupialis*) is the species most favoured to farm with and the species most utilised for meat production (Jansen van Rensburg, 1992). Game ranching can be considered as an organic agricultural system, as game animals are free-running, live and feed on their natural habitat and there is no intervention such as dipping, or feeding with growth stimulants and hormones.

At present, approximately nine thousand (9000) agricultural properties in South Africa commercially utilise game animals. Of these properties, 5061 are exempted game ranches, signifying that the landowner can utilise the animals for which the exemption certificate was issued, in any way he chooses, at any time of the year (Eloff, 2002). Game ranches that are not exempted have to adhere to the Ordinance on the Nature and Environmental Conservation of the provincial government (1974), in which the ranch is situated. Game animals are utilised through different activities, including meat production, hunting, live animal sales and eco-tourism. These different utilisation methods provide game ranchers with many opportunities, as all the different utilisation methods can be employed simultaneously on one game ranch. Since South African game animals are free running, culling/cropping for meat production takes place by shooting. The culling/cropping of game animals is an essential component of wildlife management, as most game ranches are without natural predators and animal numbers need to be controlled (Lewis, Pinchin & Kestin, 1997).

According to Hoffman and Bigalke (1999), the carcass yields of wild ungulates usually vary between 56 and 66%, whilst the carcass yield of sheep is on average 46% (Van Zyl, Von La Chevallerie & Skinner, 1969). Meat from stressed animals is often dark, firm and dry (DFD) and can also have a poor flavour. Correct culling/cropping procedures will increase meat quality, while excessive stress, inaccurate shots, incorrect bleeding and insufficient cooling of carcasses result in meat of an inferior quality (Hoffman & Bigalke, 1999). It is imperative that game carcasses be adequately bled after cropping in order to prevent "gamey" flavours from developing. Von La Chevallerie (1972) found that a definite difference exists between the different game species with regard to flavour, and also ascertained that consumers rated the flavour of springbok (*Antidorcas marsupialis*) as the most superior. South African game meat is often perceived to have a dark and unattractive red colour. This can be explained either by the fact that stress in animals leads to DFD meat, or by the fact that game animals are more active than domesticated animals, causing more myoglobin to build up in the muscles, resulting in a darker red colour meat (Hoffman, 2001). There is, however, also a variation in meat colour between the different species, and mature animals tend to have darker meat than younger animals (Von La Chevallerie & Van Zyl, 1971). Research on the shear values of different game species suggests that the tenderness of game meat is similar to that of pork and beef (Von La Chevallerie, 1970; Hoffman, 2001).

Game meat is lower in fat than either beef, pork or mutton and is reported to have an average fat content of between two and three percent (Schönfeldt, 1993). It is also lower in saturated and higher in polyunsaturated fatty acids than beef (Viljoen, 1999). Although juiciness of meat is directly related to the intramuscular lipids and moisture content of meat, the moisture level of the cooked product is mainly responsible for its juiciness. The moisture content of game meat compares favourably with that of beef (Jansen van Rensburg, 1997 & Von La Chevallerie, 1970). Although game meat is less succulent than beef because of lower levels of fat, it is incorrect to assume that it is less juicy than beef.

The South African game industry operates as a free-market enterprise as no organisation or group controls the production and marketing of game meat in South Africa. This generates opportunities for individual game ranchers and game meat producers. It, however, also creates several problems for producers and consumers alike. For example, in South Africa there are no standardised cuts or quality standards in place for game meat (Hoffman & Bigalke, 1999). This means that any individual producer may sell any type of game meat quality or cut. Consequently, this permits the legal selling of game meat of inferior quality, for example, meat that is pale, soft and exudative (PSE) or dark, firm and dry (DFD), to be sold alongside game meat of good quality. It is also very difficult for individual farmers to market and sell their game meat profitably, because the volume of meat a single farmer can supply is seldom sufficient to interest wholesalers.

Game animals are a natural resource that needs to be utilised in order to sustain it, as animal numbers need to be controlled. Game meat production can provide healthy meat of an excellent quality if correct culling/cropping and slaughtering procedures are practised. No reliable figures of the marketing and consumption of game meat in South Africa exist. Against this background this research is aimed at studying the purchasing and marketing of game meat by South African restaurants. It is foreseen that information

regarding the current game meat marketing situation can provide game ranchers, meat producers, meat retailers and restaurants with valuable information on how to improve game meat marketing.

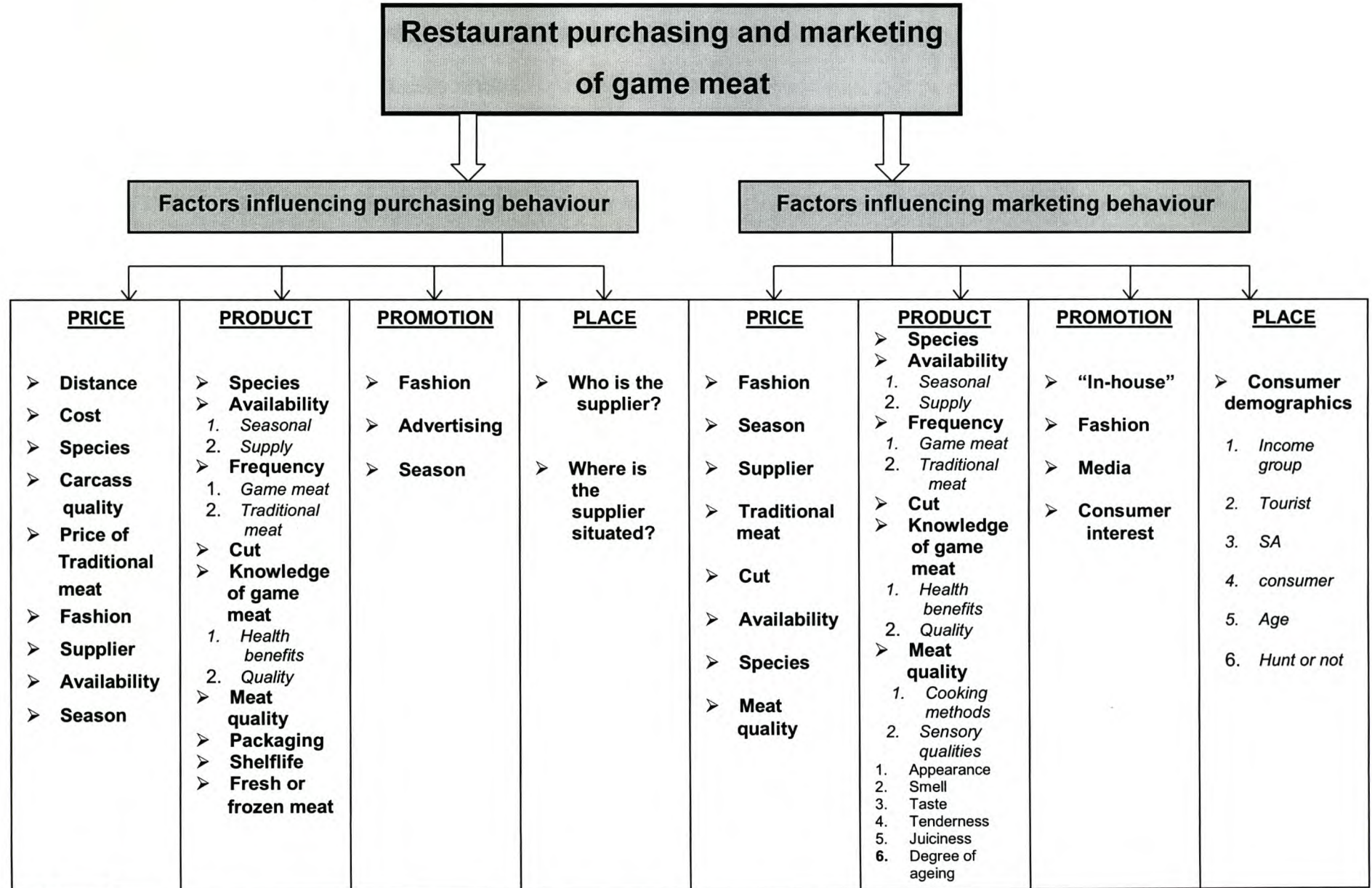


Figure 1
Dendrogram developed to quantify restaurant purchasing and marketing behaviour of game meat

2. MATERIALS AND METHODS

2.1 Research design

In order to study the marketing and supply of South African game meat at restaurants, the survey procedure was used. Data were collected by means of the questionnaire technique. A structured self-administered questionnaire was designed for restaurant meat purchasers. The questionnaire was designed to be self-administered in order to give respondents the opportunity to complete the questionnaires in their own time. The layout, formatting and sequencing of the questionnaire were carefully planned to ensure that the design of the questionnaire contributed positively to the successful completion of the questionnaires. For the same reason the length of the questionnaire was to be limited to prevent reluctance to respond within the respondent groups.

The questionnaires were developed after an extensive literature review and based upon the dendrograms that were developed. The questionnaire was designed with the aid of the dendrogram technique (Schutte, 1992). A dendrogram is a visual presentation that conceptualises links and illustrates the different issues pertaining to a specific subject. The dendrogram developed for this study provided the structure for the questionnaire and the interpretation of the data as questions were designed to address the issues indicated on the lowest levels of each of the branches conceptualised by the dendrogram (Fig. 1).

As both the purchasing and marketing of game meat by restaurants had to be researched, the dendrograms consisted of two main levels, namely purchasing behaviour and marketing behaviour for game meat. Since this study was aimed at investigating the game meat market, the dendrogram was organised around the four Ps of marketing, namely price, product promotion and place (Lamb, Hair & McDaniel 2001). These four factors (price, product, promotion, place) were used as a structure to organise the factors/concepts that influence the purchasing and marketing of game meat.

Questions were generated around argumentative factors contributing to the problem. In order to get maximum control over the respondent's frame of reference and to ensure that response categories are in line with logical responses, different types of structured questions were used, for example, open questions, closed questions, rank ordering, semantic differential scales and intensity scales. The questions were arranged in a logical order, with similar types of questions following one another. The final questionnaires were then translated into the respective languages in which they had to be presented, namely English and Afrikaans.

Formal testing of the questionnaires was done as part of a preliminary study to confirm the validity and reliability of the testing instrument. A two percent (2%) sample of the size of the total respondent group was chosen for this formal testing. All difficulties with the completion of the questionnaires were attended to, in order to ensure that the questionnaires could be self-administered and that translation of the questionnaires did not produce ambiguities.

2.2. Research area

The Cape Peninsula, an urban area surrounding Cape Town in the Western Cape Province of South Africa, was chosen as area of research. There is no reason to anticipate that the purchasing patterns of game meat for inhabitants of this area would differ from those of other areas in the Western Cape of South Africa. As no research of this kind has ever been done in this research area, the nature of this research is exploratory and descriptive. The chosen area is a metropolitan area with numerous restaurants. Tourism contributes 4.6% to the gross domestic product in South Africa (Van der Merwe & Saayman, 2001). Cape Town International airport's statistics show an increase of 30% in international departures and arrivals from April 1995 to December 2001, thus indicating that its popularity as a tourist destination is growing steadily (Cape Town Tourism, 2001).

2.3 Sample size and research procedure

As the objective of this study was to explore the purchasing and supplying behaviour for game meat, respondents had to offer game meat as a part of their menu. After contacting municipal, provincial as well as national authorities, it was established that no comprehensive list of restaurants exists for this research area. A list of restaurants was then compiled with the aid of the telephone directories of the Cape Peninsula and Boland areas. A list of 563 restaurants with their telephone numbers was compiled and sorted into alphabetical order. Franchise restaurants and take-away restaurants were excluded from this list. A random number between one and twenty was selected with the help of a computerised random list. The random number chosen was used as the first possible respondent on the list. The total number of possible respondents on the list was then divided by the number of respondents needed (twenty) to give the position of the identified respondents on the list.

As the restaurants chosen for this group had to offer game meat, the chosen restaurants had to be contacted to identify if they did offer game meat. If a chosen restaurant did not offer game meat, another replaced it. This was done by replacing the identified possible respondent with the respondent on the list below the originally identified respondent. If this restaurant also did not supply game meat, the respondent preceding the originally chosen respondent was contacted. This replacement continued, alternating between respondents below or preceding the original identified respondent, until a respondent was found that did offer game meat. This process continued until twenty randomly chosen respondents from the restaurant group were identified. In order to identify the twenty game meat-selling respondents for this study, 187 (33.2%) of the 563 restaurants were contacted before twenty respondents (10.6%, n=187) could be identified.

2.4 Respondent profile

The twenty restaurants identified as respondents for this research, all sell game meat regularly. Most of them are situated in areas where many tourists visit. Price ranges of the dishes on the restaurant menus attract customers from the middle- to upper-class socio-economic group. One of the restaurants is situated in a game

reserve, whilst four of the restaurants are in hotels. Two of the restaurants are on wine farms, whilst the rest are privately-owned restaurants situated in urban areas.

2.5 Data analysis

The completed questionnaires were coded. A template with numeric values (1-7) was used for the unstructured line scales in order to evaluate the positions that respondents indicated on the line scale. A numeric value was then given to the indication on each line scale. The SAS (1999) package was used to analyse the data. Chi-squared (χ^2) frequencies were used to test for statistical influence of independent variables on dependent variables. The Chi-square test is used where hypotheses concerning variances have to be tested, frequency distributions need to be analysed and the independence of variables needs to be indicated (Blumen, 1992). Basic statistical analysis was also performed on data that involved numeric values. Percentage means and standard deviation tests were then performed with the SAS (1999) package. The confidence limit used in this analysis was ninety-five percent (95%) throughout. All the discussed effects, unless otherwise stated, are significant ($p \leq 0.05$). Missing percentages in the results and discussion is due to no-response data.

3. RESULTS AND DISCUSSION

3.1 Purchasing behaviour of game meat

The main objective for studying the restaurants' purchasing of game meat was to identify problems in the game meat supply chain and to establish the factors that influence restaurants' buying patterns of game meat. The twenty restaurants that were chosen as respondents for this research project all market game meat during at least one season of the year.

3.1.1 Price

Price is that which is given up in exchange to acquire a good or service. Consumers often consider price to be the most important variable when making buying decisions. Price is compared to the perceived value of a product. Unlike what many retailers believe, the value of a product is determined by consumers and not by retailers (Lamb *et al.*, 2001). The objective of the questions regarding the price for which the restaurants buy game meat was to establish how the price of game meat compares to the price of other meat types (beef, mutton/lamb, pork, chicken and ostrich).

Respondents were asked to rank six meat types (beef, mutton/lamb, pork, chicken and ostrich and game meat) in order of price, with 1 the least expensive and 6 the most expensive. Game meat was rated as most expensive by most of the respondents, with beef rated second most expensive, followed by ostrich. Mutton/lamb was the fourth most expensive, followed by pork, with chicken rated the least expensive meat type.

This is contrary to the findings of Crafford, Hoffman, Muller and Schutte (2002b), who studied the purchasing and marketing of game meat by butcheries and supermarkets in South Africa. The butchery meat buyers in their research indicated that they rated beef as the most expensive meat type they purchase, followed by mutton/lamb, with game meat the third most expensive meat type. The supermarket meat buyers, however, indicated mutton/lamb as the most expensive meat type they purchase, followed by beef and then game meat. The type of supplier the restaurants use could account for the fact that restaurant meat buyers rated game meat as the most expensive meat type. Most of the restaurants (n=16, 80%) indicated that they buy their game meat from a meat wholesaler, whilst the butcheries and supermarkets in the research of Crafford, *et al.* (2002b) indicated that they mostly buy game meat directly from farmers and hunters; therefore no middleman was involved.

3.1.2 Product

A product can be defined as anything, both favourable and unfavourable, that a person receives in an exchange. Game meat is a consumer good and can further be classified as a speciality product (Lamb *et al.*, 2001). According to Kastner *et al.* (2001) USA consumers expect meat products to be of consistent palatability, to be safe and convenient, and to be affordable. The purpose of the questions surrounding game meat as a product was to identify the quality of game meat, the species available, and the cuts and packaging available to restaurants to purchase, as well as to identify whether the restaurants had difficulty in obtaining game meat (availability) and what the restaurant meat buyers' knowledge of game meat is.

The list of possible influences on the retailing of game meat that were identified in the dendrograms was used to measure respondents' opinion of the degree to which these factors played a role in their purchasing behaviour of game meat. Respondents had to indicate on a line scale to what degree each of the factors influence their purchasing pattern of game meat.

Factors that were highlighted as influences on the respondents' purchasing of game meat included availability of game meat (n=17), regulations (n=14), seasonal availability of game meat (n=14), price (n=13) and quality of game meat (n=13). No quality standards or standardised cuts for game meat exist in South Africa. Regulations regarding game meat focus on the conservation of species. Regulations could therefore not hamper the respondents' purchasing of game meat. A misconception exists surrounding the seasonal availability of game meat. The South African winter months of June, July and August are the traditional hunting season. Game meat can, however, also be hunted/cropped during the rest of the year if animals are kept on an exempted game ranch. For the purpose of this study the term "seasonal availability" was used to identify whether respondents considered it easier to obtain game meat during winter than during other times of the year. Many of the respondents (n=14) therefore indicated that they have difficulty in obtaining game meat in other seasons apart from winter. Respondents were also asked to indicate during which months of the year they purchase game meat. The amounts of respondents that purchase game meat in each of the twelve months were calculated (Fig. 2).

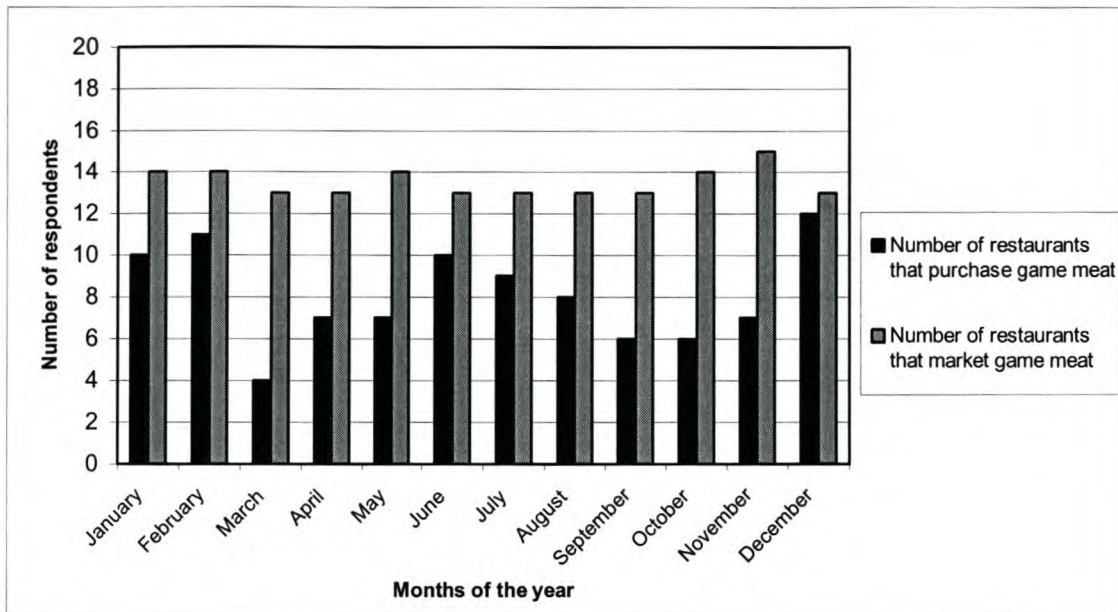


Figure 2
Months of the year in which respondents purchase and market game meat

Three of the respondents indicated that they purchase game meat throughout the year (January to December). All of the respondents indicated that they are able to buy game meat during the summer months (November to February). This contradicts the respondents' (n=14) indication that the seasonal availability of game meat is an influence on their buying of gaming, especially since the respondents further indicated that most of them (90%, n=18) are able to supply the demand for game meat that they experience during summer months. The differences in the number of respondents buying and selling game meat per month can be accounted for by the fact that most of the game meat the respondents buy is frozen. The factors that were considered by most respondents not to influence their purchasing of game meat included the media (n=13), availability of traditional meat, i.e. lamb, beef or pork, (n=13) and fashion (n=11).

The respondents were requested to specify the strongest constraining factors that they experience when purchasing game meat. Seven of the respondents indicated that the availability of game meat is their strongest constraining factor, whilst six of the respondents indicated price as the strongest constraining factor. Five of the respondents indicated that the quality of the game meat that is available to them occasionally prevents them from purchasing it.

Respondents were subsequently asked to name the qualities that they consider important when they purchase game meat. A number of qualities were named, but no significant similarities were found. The qualities mentioned by the respondents included freshness (n=2), the colour of the meat (n=2), whether the carcass was bled and cut correctly (n=4), the amount of fat on the meat (n=2) and the age of the animals (n=3). Most of the respondents (95%, n=19) indicated that the game meat they purchase is of a consistent quality. According to

Issanchou (1996) food quality is not an inherent characteristic of food, but is assigned to the physical characteristics of the product and the communications surrounding the product. It is important to identify the marketing communications (e.g. product information, advertising or recipes) that the supplier of the product provides in order to understand the restaurant buyers' perception of what quality should be. Seventeen (85%) of the respondents were aware of the health benefits associated with game meat.

In order to establish the purchasing pattern of different types of meat by the respondents, they were asked to indicate how often and how much they purchase of different meat types (Fig. 3). The average amount for each meat type that the respondents bought per week was calculated. Mutton /lamb (45.03 kg) and beef (41.25 kg) were on average the meat types that the respondents bought most of, followed by chicken (31.18 kg) and game meat (18.53 kg). Pork (14.3 kg) and ostrich (12.52 kg) were bought the least.

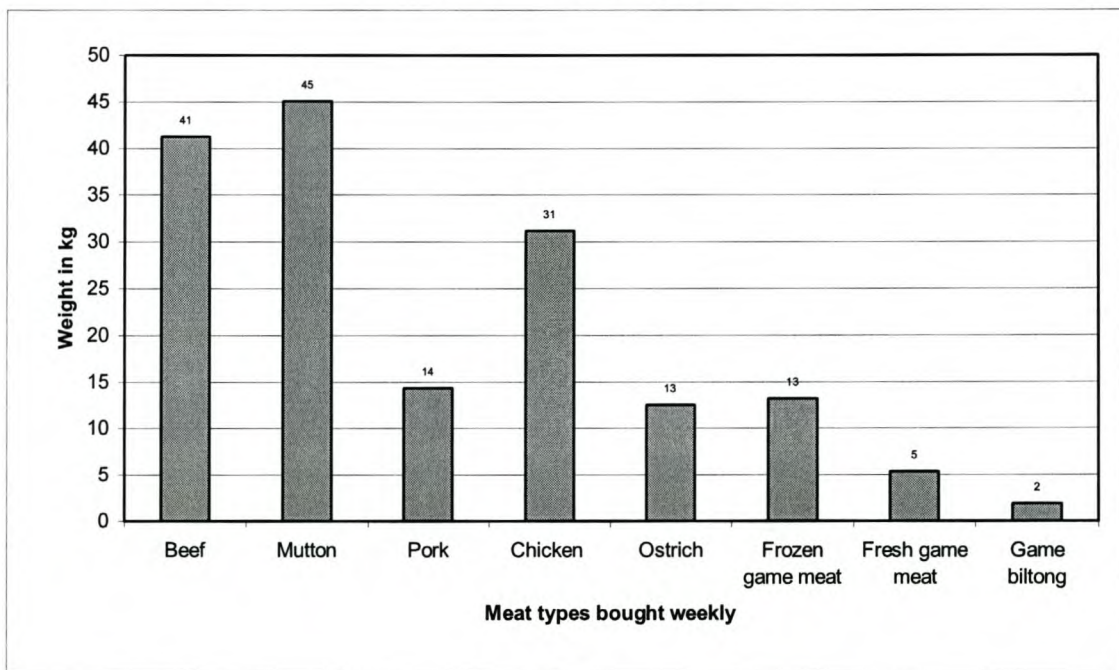


Figure 3
The amount of different meat types that restaurants buy per week

As the sizes of the restaurants differ, the percentages of different meat types that they buy weekly were also calculated (Fig. 4).

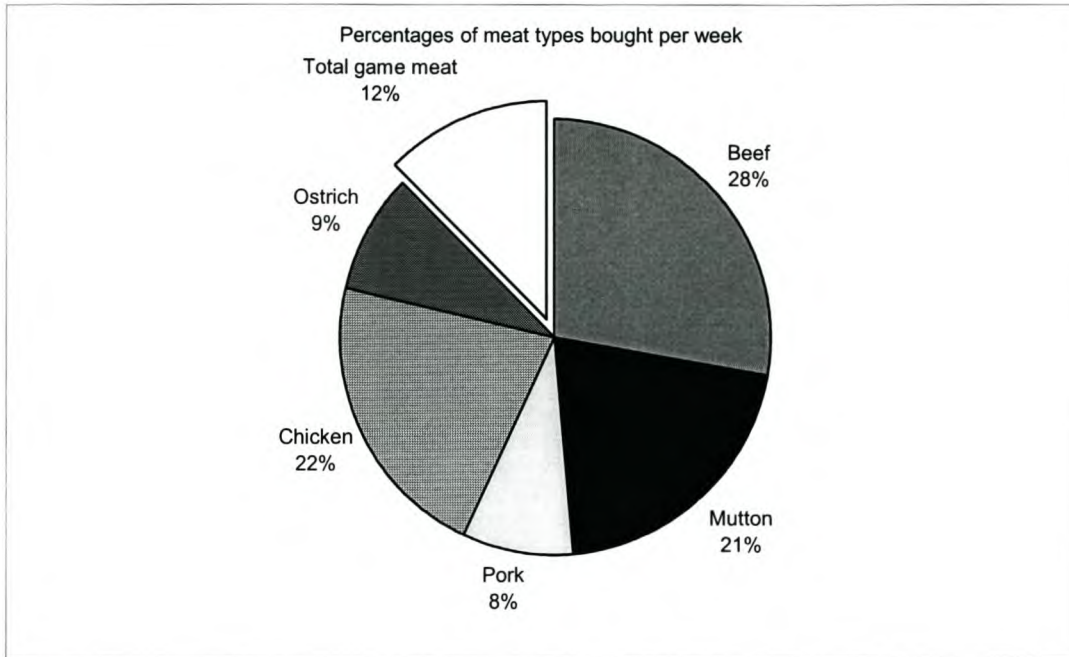


Figure 4
Percentage of meat bought per week by restaurants

This indicated that beef accounted for the highest percentage of meat bought per week (27.86%), followed by chicken (21.68%) and mutton/lamb (20.84%), with the total game meat accounting for 12.49% (8.67% frozen; 3.82% fresh) of the weekly meat purchase. According to these results, 69.4% of the game meat bought by the respondents is frozen. The thawing of frozen meat results in moisture losses and could cause meat to be slightly drier and less juicy than fresh meat (Jansen van Rensburg, 1997). According to Buys (1993) international trends indicate a shift from frozen products towards fresh products. Fresh game meat would therefore provide better-quality meat than frozen game meat. Ostrich (8.88%) and pork (8.25%) were the meat types that the restaurants on average buy the least.

In South Africa game species mostly consist of the order of *Artiodactyla* and family *Bovidae*: Antelope (Smithers, 1983). Respondents were asked to indicate which game species are available. Most respondents indicated springbok/*antidorcas marsupialis* (n=17), kudu/*tragelaphus strepsiceros* (n=13) and warthog/*phacochoerus aethiopicus* (n=10) as the species that are often available to purchase. According to Jansen van Rensburg (1992), springbok accounts for 60% of South African game meat that is consumed. Species that are mostly unavailable to purchase included blue wildebeest/*connochaetes taurinus* (n=18), bushbuck/*tragelaphus scriptus* (n=17), black wildebeest/*connochaetes gnou* (n=16), red hartebeest/*alcelaphus buselaphus* (n=15), zebra/*equus zebra* (n=15) and reedbuck/*redunca arudinum* (n=14). The unavailability of these species could be accounted for by the fact that these species naturally occur in regions far from the Western Cape Province.

Most of the respondents (90%, n=18) purchase game meat in the form of cuts, while one respondent purchases game meat in the form of carcasses and one did not respond. Most of the respondents (n=17) indicated that the game meat they buy is vacuum packaged. According to Skinner and Louw (1996) vacuum packaging is very effective at reducing lactic acid bacteria and pseudomonad counts in game meat.

3.1.3 Promotion

Promotion can be defined as the communications by marketers that inform, persuade and remind potential buyers of a product in order to influence an opinion or elicit a response. Promotion involves personal marketing, advertising, sales promotions and public relations (Lamb *et al.*, 2001). According to Meisinger (2001) promotion involves those activities that build awareness, establish confidence, gain exposure, improve merchandising and offer incentives regarding a product. The purpose of the questions on the promotion of game meat was to identify what type of information, if any, is provided by the suppliers of game meat to the restaurants as well as the South African media to influence or support the buying of game meat.

Respondents were asked if they ever receive any promotional information on game meat. Eight of respondents indicated that they receive information on game meat from their supplier. The information that these respondents receive is usually on the quality and attributes of the meat that is supplied. Ninety percent (n=18) of the respondents are not aware of any marketing efforts to promote game meat by any form of media.

As no organisation exists that controls or promotes the marketing of game meat, the respondents were asked how they would feel about the establishment of an organisation that controls the selling and marketing of game meat. Ten of the respondents felt positively about the possibility of such an organisation, and said that this would increase the availability and quality of game meat, improve marketing and educate the consumer. Three respondents felt negatively about such an organisation, whilst seven respondents did not respond to this question.

3.1.4 Place

It is important that an effective distribution channel of distribution should be set in place for any product. A distribution channel can be defined as a set of interdependent organisations that ease the transfer of ownership as products move from producer to business user or consumer (Lamb *et al.*, 2001). According to Meisinger (2001) place has to do with the channels which makes products available to consumers. For the purpose of this study, place refers to the supplier, where it is situated, where the meat the supplier provides come from, and why the respondents use a particular supplier.

Most of the respondents (n=16, 80%) purchase game meat from wholesaler butcheries. The rest of the respondents purchase game meat from hunters. Radder (2001) studied the supply and demand of exotic meat in restaurants in the Eastern Cape Province, South Africa, and found that 44% of the respondents buy exotic

meat from butcheries, whereas 35% buy game meat from hunters or farmers. Crafford *et al.* (2002b) researched the game meat purchasing and marketing behaviour of butcheries and supermarkets, and found that most of the butcheries (70%) in their research purchase game meat directly from farmers or hunters.

The respondents had to indicate where their main suppliers of game meat are located. The suppliers indicated by the respondents are mostly located in the Western Cape Province of South Africa (n=16), but four respondents also purchase game meat from Namibia. According to seventeen (85%) of the respondents, their supply of game meat is usually reliable, while three indicated that their supply is erratic. The butcheries in the research of Crafford *et al.* (2002b) indicated that 75% of them consider their supply of game meat reliable. Radder (2001) indicated that 61% of restaurants that offer exotic meat in the Eastern Cape Province of South Africa experience no difficulties when purchasing game meat, while 39% of respondents indicated that they experienced problems relating to the seasonal availability and prices of game meat when they purchase it.

The respondents were asked to indicate why they make use of their specific suppliers (Fig. 5).

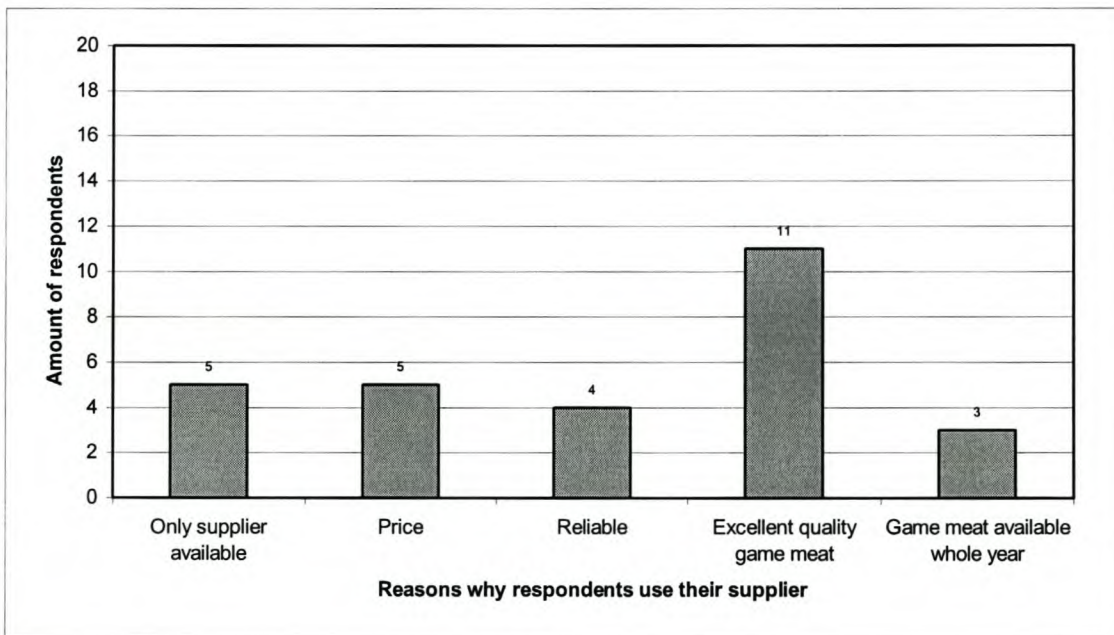


Figure 5

Reasons why respondents make use of their game meat suppliers

Eleven of the respondents indicated that they use their suppliers because of the excellent quality of game meat that they supply, while five respondents indicated that their suppliers are used because of the affordable prices of their game meat. Five respondents indicated that they use their supplier because it is the only supplier they can find.

3.2. Marketing behaviour for game meat

According to Meisinger (2001) marketing does not merely entail selling products. Marketing can be defined as the process by which a profit is generated through the managing of resources and activities that will ascertain and fulfil the needs and desires of people who buy products and services.

The respondents were asked to indicate on a line scale the extent to which a list of factors influenced their marketing behaviour of game meat. The availability, seasonal availability and quality of game meat were the factors that most respondents (n=14, 70%) indicated as having an influence on their marketing of game meat. The seasonal availability of game meat, as discussed in 3.2.1.2., again provides a contradiction in the respondents' answers, as the respondents indicated that game meat sales are highest during the month of December (summer), whilst eighteen of the twenty respondents indicated that they are able to supply their demand for game meat during summer.

As there are no quality standards or grading for game meat, it is understandable that the quality of game meat could influence the respondents' marketing of it; however, another contradiction in the responses is evident, as nineteen 95% of the respondents indicated that their supply of game meat is of constant quality. The respondents subsequently did not agree on how they defined the quality of game meat (see 3.1.2, par. 4). Other factors indicated as influences on the respondents' marketing of game meat included degree of consumer knowledge on the nutritional value of game meat (n=12) and the species of game that is available (n=10). Respondents indicated that the media (n=12), fashion and availability of traditional meat types (n=5) did not influence their marketing of game meat at all.

3.2.1 Price

The questions regarding the price for which game meat is marketed were firstly aimed at identifying whether the price of game meat in restaurants had any influence on whether consumers ordered it or not, and secondly they were aimed at comparing the price at which game meat is bought with the price at which it is sold. Only nine of the respondents indicated that the price of game meat has an effect on their marketing of game meat. The research of Crafford *et al.* (2002b) showed that most of the butchereries participating in their research indicated that the price of game meat did influence their selling of game meat. Crafford, Hoffman, Muller and Schutte (2002c) found that only 22% (n=63) of the 300 consumers participating in their research indicated that they are willing to pay more for game meat than other meat types. According to Issanchou (1996) consumer perceptions of food are not only dependent on the person, but also on the context in which food is consumed.

Dransfield, Zamora and Bayle (1998) studied the effect of information and price index on the consumer selection of steaks and found that consumers preferred buying higher-priced steaks to lower-priced steaks when they had no knowledge of eating quality of the meat. After tasting the steak, consumers chose the most tender meat, regardless of its price. This correlates with the findings of Groves (2001), who found that consumers expected

more expensive products to be of a higher quality, as well as of Verbeke and Viaene (1999), who reported that consumers perceive meat with low prices to have low quality. Dransfield *et al.* (1998) further conclude that most consumers are not prepared to pay more for meat, when basing their judgement solely on the appearance of meat, but are prepared to pay more for guarantee of quality.

In order to establish the price of game meat, relative to that of traditional (beef, mutton/lamb, pork and chicken) meat types and ostrich meat, respondents were asked to indicate whether game meat is priced higher than other meat types in their restaurant (Table 1).

Table 1
Responses to the selling price of game meat relative to other meat types

Meat type	Is the game meat more expensive on your menu than the following meat types?		
	Not available	No	Yes
Mutton/lamb	1	7	12
Beef	1	9	10
Pork	1	5	14
Ostrich	1	8	11
Chicken	1	4	15

Chicken (75%, n=15) and pork (70%, n=14) were indicated by most respondents as meat types that are offered at a lower price than game meat. Apart from these two meat types, there seem to be no correlation between the pricing of game meat by the respondents, since 90% (n=18) of the respondents indicated that game meat is the most expensive meat type they purchase, but apparently not the most expensive meat type they sell. Current supermarket and butchery prices of game meat are illustrated in Table 2, indicating that game meat leg is marketed as more expensive in a butchery, but less expensive in a supermarket than beef silverside or leg of mutton. Butcheries and supermarkets in the research of Crafford *et al.* (2002b) indicated that beef is the most expensive meat type, followed by mutton and then game meat. Consumers in the research of Crafford *et al.* (2002c) indicated game meat as the most expensive meat type available to them. It seems that a lack of knowledge of game meat and unsophisticated buying behaviour by game meat suppliers and consumers alike are leading to many contradictions regarding the price of game meat. It could be that the free-market system under which game meat is marketed could further contribute to these contradictions.

Table 2

Prices of mutton, beef and game meat in Rand per kg at a retailer of each of the respondent groups (August 2002)

Species	Cut	Supermarket price (R/kg)	Butchery price (R/kg)
Mutton	Leg	39.98	35.98
Beef	Silverside	36.98	34.98
Game meat (Springbok)	Leg	25.98	39.98

3.2.2 Product

According to Bukula and Kedzior (2001) the most important qualities that consumers look for in a meat product are the sensory qualities. According to Kastner *et al.* (2001) USA consumers expect meat products to be of consistent palatability, to be safe and convenient, and to be affordable.

Respondents were asked to indicate on a semantic differential line ranging from “unpopular” to “popular” the popularity of different meat types on their menu. The left side of the scale indicated that a meat type is unpopular, while indications to the right show that a meat type is popular. Most respondents rated beef (n=19) and chicken (n=19) as the most popular meat types, followed by ostrich (n=18) and mutton/lamb (n=17). Game meat was rated popular by fourteen of the respondent, with eleven indicating pork as a popular meat type. These data correlate with the findings of Crafford *et al* (2002c), who studied game meat consumption by South African consumers. According to their research, chicken is the meat type favoured by most South African consumers to order in a restaurant, followed by lamb and beef. Pork and game meat were found to be the fourth and fifth preferred meat type to order, respectively. Ostrich was, however, found to be the least preferred meat type to order. Tourists visiting South Africa, however, indicated game meat as the meat type (77%, n=60) they would prefer to order in South African restaurants, followed by ostrich (72%) and chicken (68%).

According to Meiselman and MacFie (1996) acceptance and perceived quality of food is formed first by its taste or flavour, then by the texture and lastly by the appearance. Respondents were asked to indicate on a line scale the extent to which a list of qualities were important to the consumer pertaining to game meat and meat other than game meat (e.g. pork, lamb, chicken) (Fig. 6).

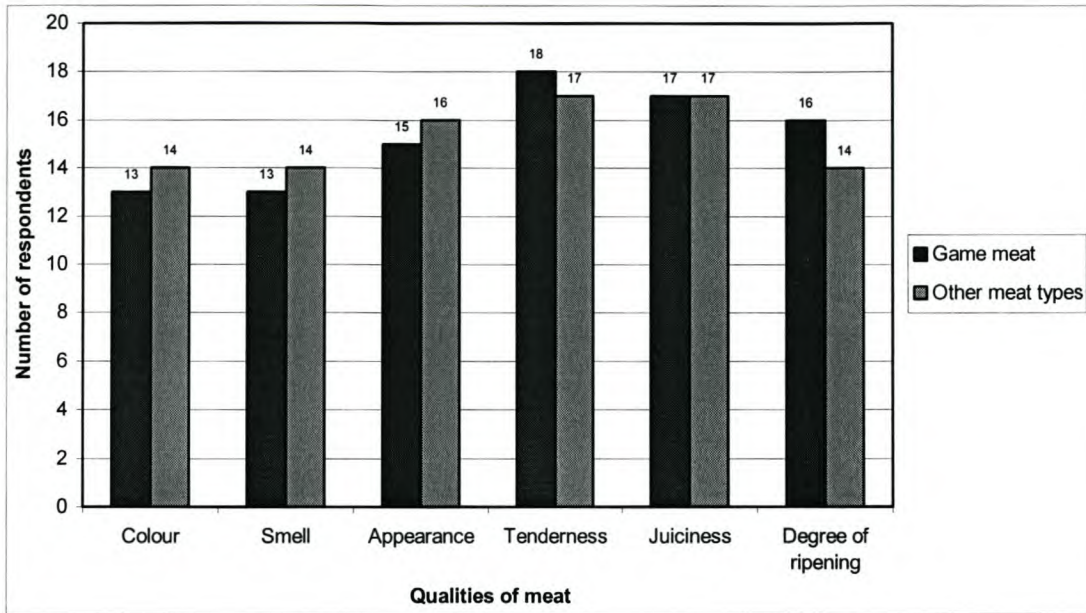


Figure 6

Qualities of game meat compared to qualities of other meat types considered important by consumers

Most respondents ($n=18$) indicated that the tenderness of meat is important to consumers. No significant differences were indicated for qualities of game meat in comparison with other meat types. Butcheries in the research of Crafford *et al.* (2002b), however, indicated that according to them, the qualities of general appearance, tenderness, juiciness and ripeness were not as important to consumers when buying game meat as when buying traditional meat types (e.g. beef and pork). Consumers, on the other hand, indicated that all the qualities listed in the question (colour, smell, appearance, tenderness, juiciness and degree of ripening) are less important when they buy game meat than when they buy traditional meat types (Crafford *et al.*, 2002c). The qualities of colour, smell and general appearance are perceived differently in cooked meat than in raw meat, and consumers visiting the responding restaurants do not see the raw meat, but only evaluate the quality of the cooked product. This can account for the differences in the responses of the butcheries and consumers versus the restaurant meat buyers.

Respondents were asked to indicate which species of game meat they usually offer (Fig. 7). Most of the respondents (85%, $n=17$) usually offer springbok (*Antidorcas marsupialis*) meat, while 75% ($n=15$) offer kudu (*Tragelaphus strepsiceros*) regularly. Von La Chevallerie (1972) found springbok to be the most tender of the game species and also found that sensory analysis on a number of game species rated springbok to be superior in flavour compared to other game species. Crafford *et al.* (2002c) found that most South African consumers indicated that springbok and kudu are the species that most of them have eaten.

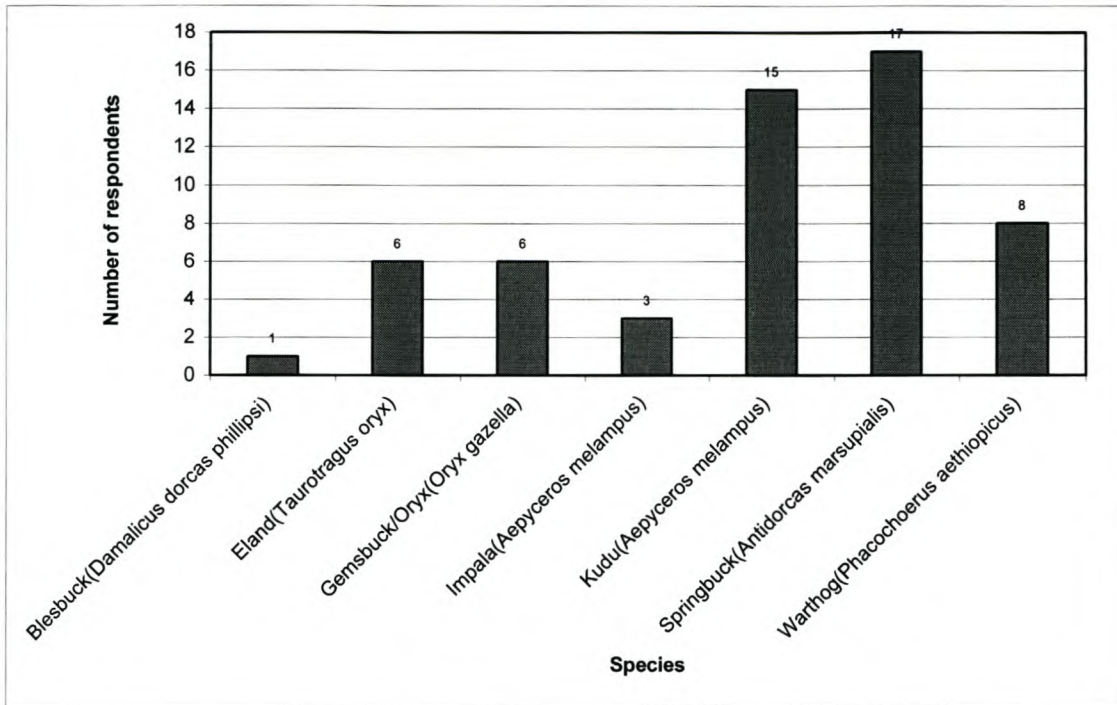


Figure 7

Species of game meat that is regularly marketed by restaurants that sell game meat

There are no standardised cuts for game meat, but Hoffman and Bigalke (1999) suggest that the standardised South African cuts for beef, lamb and pork be applied to game meat. All of the respondents (100%, n=20) offer game meat steaks, while eleven (11) offer goulash and thirteen (13) offer loin. It seems that bone-in cuts are not offered regularly. Jansen van Rensburg (1997) found that bone-in cuts tend to be juicier than steaks or loins and also have a more typical game flavour. Bone-in cuts, however, tend to lose more moisture when thawed than boneless cuts do, and since more than 69.4% of the game meat purchased by the respondents is frozen, boneless cuts would be advised (Jansen van Rensburg, 1997).

Most of the respondents (85%, n=17) indicated that they offer more game meat at certain times of the year than at other times. Most respondents indicated that they sell more game meat during December (n=11) and January (n=9), which is summer and traditionally holiday months in South Africa (Fig. 8).

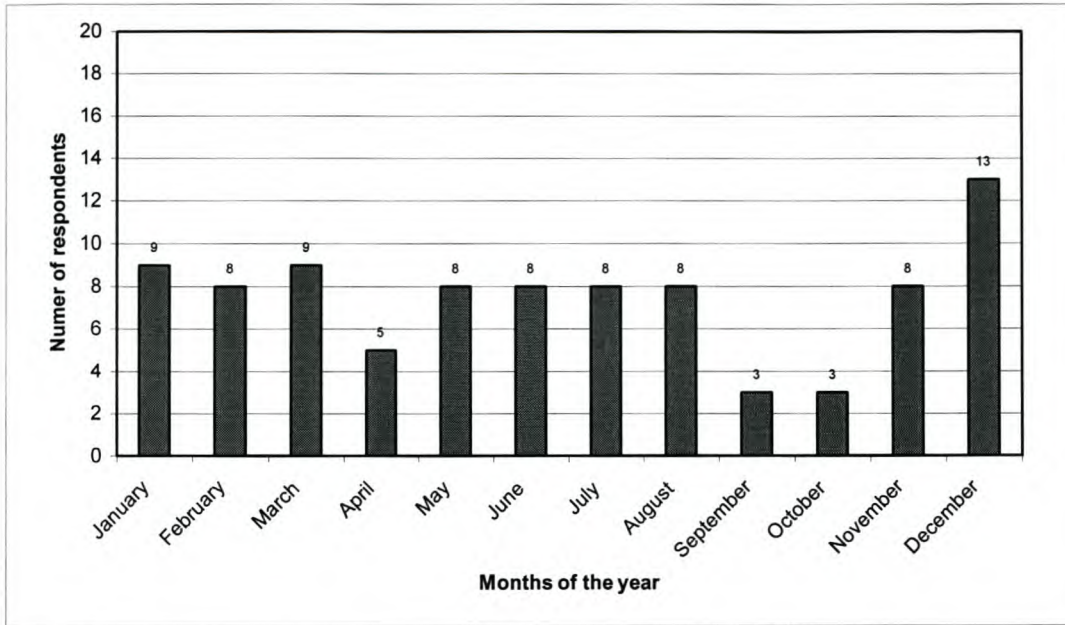


Figure 8

Months in which game meat sales are the highest according to the respondents

Some of the respondents also indicated that they sell more game meat during the winter months (June, n=8; July, n=8; August, n=8). Twelve of the respondents offer game meat throughout the year (January to December) (Fig. 2). Fourteen of the respondents indicated that they experience a demand for game meat during the summer months (December, January and February), while eighteen respondents indicated that, if they have a demand for game meat during summer, they are able to supply the demand. This again reflects on the contradiction that respondents indicated that seasonal availability of game meat influences their marketing of game meat, whilst they sell the most game meat during summer. Fifty percent (50.17%) of the consumers in the research of Crafford *et al.* (2002c) indicated that it is not possible to obtain game meat during summer time, whilst thirty percent of the butchery respondents offer game meat throughout the year (Crafford *et al.*, 2002b). Butcheries and supermarkets sell most game meat during the winter months of May to July.

Respondents did not agree on the reasons why more consumers do not purchase game meat. Some of the respondents ascribed this to consumers' lack of knowledge of game meat (n=7), whilst other respondents indicated that consumers did not buy game meat because they are not familiar with it (n=5). Butcheries in the research of Crafford *et al.* (2002b) also did not agree on the reasons why consumers do not buy more game meat. Radder (2001) found that restaurants ascribed a lack of consumer interest in game meat to the fact that consumers are not familiar with game meat. Four of the respondents have had customers who were not in favour of their marketing game meat. Most of these customers thought it cruel to hunt and were therefore opposed to the selling of game meat. According to eleven of the respondents, consumers are not aware of the health benefits of game meat. Crafford *et al.* (2002c) found that 54% (n=300) of the consumers in their research indicated that they were aware of the health benefits of game meat, whilst 80% of tourists indicated that they are

aware of the health benefits associated with game meat (Crafford *et al.*, 2002a). Most of the game meat eaters in restaurants are, however, tourists visiting South Africa (see 3.2.4, par. 2).

Respondents were asked to indicate what they thought consumers see as the positive and negative attributes of game meat. According to the responses, the positive qualities that consumers attribute to game meat include that game meat is healthy (n=4) and low in fat (n=6), it is a different type of meat that offers a variation from other meat types (n=6) and it has a different taste (n=8). Negative attributes that were listed included the price of game meat (n=2), the taste of game meat (n=3) and the fact that game meat is not always available on restaurant menus (n=2). Consumers in the research of Crafford *et al.* (2002c) also indicated what they considered the positive attributes of game meat to be, namely that it is healthy and low in fat, while the negative attributes of game meat are the price and the fact that it is not always available.

The respondents were asked to indicate which meat types they consider the most versatile. Most responses (n=12) considered chicken to be versatile, while eight responses indicated mutton/lamb and seven indicated beef as versatile. This correlates with Crafford *et al.* (2002c), who found that consumers rated chicken as the most versatile meat type. Respondents were subsequently asked what cooking methods they use when preparing game meat. Most of the responses indicated that the respondents grill (n=12), panfry (n=11) and stew (n=9) game meat. Respondents were asked to indicate which percentage of their menu comprises of game meat dishes. On average, 8.55% of starters, 18.4% of main meals, 5.85% of the buffet and 6.05% of "special" menu items are game meat. Radder (2001) found that game meat constituted less than 5% of the menus of most restaurants in the Eastern Cape Province of South Africa that sells game meat.

3.2.3 Promotion

According to Jansen van Rensburg (1992) it is imperative that game meat marketers be personally involved in the promotion of game meat. The respondents were asked if they have ever made any efforts to inform consumers on the health benefit of game meat. Only four of the respondents indicated that they have attempted to do so by having conversations with their customers on game meat. The butcheries in the research of Crafford *et al.* (2002b) indicated that only eight of the twenty have ever done any promotion on game meat, whilst 79.33% of a group of 300 South African consumers indicated that they have never seen any promotion on game meat in South African shops or restaurants (Crafford *et al.*, 2002c). Eight of the respondents regard game meat as a fashionable meat type, which correlates with their answer that fashion does not influence their purchasing behaviour for game meat (see 3.2.2, par. 3).

3.2.4 Place

Place in the marketing chain usually indicates the distribution channels, but it also includes the consumer to which a product is distributed. Between two and four customers out of ten customers visiting the respondent restaurants order game meat. In a study on the consumption of game meat by South African consumers and

tourists, Crafford *et al* (2002c) found that 44.26% (n=127) of the South African respondents and 91.75% (n=55) of tourists respondents indicated that they would order game meat in a restaurant in South Africa.

The respondents were asked to indicate the demographic profile of the typical game meat-eating customer. According to the respondents, the average game meat eater in their restaurants is between the age of 31 and 40 (n=17), has a professional occupation (n=18) and has a tertiary qualification (n=17). The majority of respondents indicated that most of the game meat eaters in their restaurants are tourists (n=16). Radder (2001) found that the typical game meat eater in a restaurant in the Eastern Cape of South Africa is a foreigner or South African businessman over the age of forty, in the middle- to high-income group. It is apparent that restaurant marketing activities for game meat should be aimed at tourists visiting South Africa. Most of the respondents (n=12) indicated that they did not know if some of their clients are hunters.

4. CONCLUSIONS

The purpose of this research was to study the game meat purchasing and marketing behaviour of restaurants in South Africa. According to Kupiec (2001) and Steenkamp (1997), consumers are increasingly eating away from home on a regular basis. Furthermore, South African tourism is growing steadily (Van der Merwe & Saayman, 2001). According to Crafford *et al* (2002a) 91.75% of tourists visiting South Africa would order game meat in restaurants. It is interesting to see that the restaurants buy on average more game meat than pork or ostrich per week. It is therefore evident that an excellent opportunity for the marketing of game meat exists in the South African restaurant industry. It is, however, apparent that the restaurant industry has not yet taken full advantage of this opportunity.

The many contradictions in the responses as well as the lack of agreement by the respondents on important aspects such as quality characteristics of meat lead to the conclusion that the restaurant meat buyers are in fact poorly educated regarding the quality and sensory attributes and the marketing of game meat. It seems that the purchasing and marketing of game meat is approached in a very unsophisticated way. Meisinger (2001) suggests that meat should be marketed and not "sold", as selling merely implies ordering and delivering of a product, whilst marketing implies generating a profit by managing resources and planning activities that will fulfil the needs of consumers.

Most of the respondents indicated that one of their main restrictions in the marketing of game meat is its availability. This contradicts the respondents indication that most of them (n=18) can easily obtain a reliable supply of game meat and that all of the respondents are able to buy game meat during the summer months. Seasonal availability is therefore apparently not a problem, seeing that the restaurants sell most game meat during the summer month of December.

The price for which game meat is purchased and marketed, as well as the perception of what game meat costs, provides an interesting circle of possibilities. Consumers perceive game meat to be more expensive than other

meat types, but it is marketed less expensive than beef and mutton/lamb in supermarkets and more expensive than beef or mutton/lamb in butcheries. The respondents in this research indicated that game meat is the most expensive meat type that they purchase, but there was no correlation between responses on the selling price of game meat relative to beef or mutton/lamb. According to Dransfield (2001) high meat prices are associated with exceptional quality, but knowledge of the eating quality of meat has a more important influence on buying of meat than its price does.

High-priced game meat can provide an initial advantage in promoting game meat, as according to Dransfield *et al.* (1998) consumers will perceive expensive meat to be of superior quality. This will possibly promote game meat to tourists and consumers who do not know South African game meat. It is, however, important that the product that is presented is of superior quality, otherwise consumers will not be willing to pay more for game meat than other meat types. According to Crafford *et al.* (2002c) South African consumers are not willing to pay more for game meat than other meat types. The restaurant industry should therefore focus on marketing game meat to tourists rather than South African consumers.

The respondents indicated that many consumers are unfamiliar with game meat and lack knowledge on the positive attributes of game meat; however, only four of the respondents have ever promoted game meat in their restaurants.

According to Steenkamp (1997) product quality, price, brand name, freshness and guarantee are the most important criteria that form perceptions of a product. As no standards for game meat quality exists in South Africa and no brand names exist for game meat, the marketing of game meat in restaurants relies solely on the individual restaurants. It is, therefore, apparent that copious opportunities exist within the game meat market, if restaurants can market good quality game meat as an exotic product.

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CHAPTER 7

Conclusions and recommendations

The South African game meat industry operates on the principle that meat from free-running animals is sold in a free-market environment. The free-running nature of game animals provides organic meat with a favourable nutritional value, whilst the free-market environment provides individual producers and marketers with good profit margin opportunities. Conversely, the free-running nature of game animals requires strict control over culling/cropping and meat handling in order to maintain meat quality, whilst the free-market environment leaves individual producers and marketers with the responsibility of marketing their own game meat.

The purpose of this research was to study the current purchasing and marketing behaviour of game meat by supermarkets, butcheries and restaurants; and to investigate the perceptions about and purchasing of game meat by South African consumers and tourists visiting South Africa. This research confirmed that the South African game meat industry is plagued by numerous misconceptions and contradictions. It is evident that both consumers and marketers of game meat have contradictory beliefs regarding the seasonal availability of game meat. Consumers as well as some of the supermarket, butchery and restaurant meat buyers are in general ill-informed regarding the sensory qualities, health benefits and preparation and cooking methods of game meat. Ironically, the research showed that tourists visiting South Africa were the respondent group that were the most knowledgeable regarding the sensory qualities and health benefits of game meat.

As no standardised cuts or quality control for game meat exist in South Africa, the individual marketers are responsible for the quality control of game meat. The game meat marketers in this research (supermarkets, butcheries and restaurants) did not agree on the qualities that are important when buying game meat, whilst South African consumers were not as critically inclined towards game meat, as they indicated that subjectively they do not rate game meat to meet the same quality standards that other meat types do.

It is evident that the game meat industry needs to promote game meat more extensively, in order to form positive perceptions of game meat and to inform consumers of the health benefits, cooking methods and sensory qualities of game meat. An organisation that controls quality and marketing of game meat could assist in the successful marketing of game meat. Consumers indicated that they would buy more game meat if they were better informed on its qualities. The literature that was reviewed for this research suggests that branded products generally create high-quality expectations among consumers. Branding and nutritional labelling could therefore be employed to create higher-quality expectations of game meat. Standardised cuts for game meat would also increase consumer confidence in game meat.

This research succeeded in identifying target markets for game meat. Restaurants should market game meat for European tourists, whilst supermarkets and butcheries should focus on marketing game meat to white consumers and consumers with higher educational qualifications, but also target coloured and black consumers.

This research also provided an insight into the problems and the prospects of the game meat industry. It is evident that for the successful marketing of game meat, numerous changes should be made in the way game meat is currently marketed. Some of the recommendations for the marketing of game meat in South Africa that arises from this research are summarised in Table 1.

Table 1
Recommendations for the marketing of game meat in South Africa

PRICE	PRODUCT	PROMOTION	PLACE
➤ Higher prices for best cuts (e.g. fillets, leg)	➤ Standardised cuts and quality control	➤ Supplying of information and training to butchers and chefs	➤ Restaurants should target the tourist market
➤ Lower prices for other cuts (e.g. goulash, bone-in cuts)	➤ Market different species by species name	➤ Information on nutritional benefits, health, safety, preparation and cooking to consumers	➤ Butcheries should target the higher-educational group and provide high-quality cuts (e.g. fillet)
➤ Target prices at target markets	➤ Packaging with recipes and serving suggestions	➤ Promote game meat to target markets	➤ Supermarkets should provide value-added game meat products and cheaper cuts
➤ Market smaller quantities of meat in value-added products to increase profit margins	➤ Brand game meat products ➤ Value-added products (e.g. sosaties, marinated fillets, stir-fry strips, salami)	➤ Challenge consumer perceptions of game meat by supplying information on the game meat industry and qualities of game meat ➤ In-store promotional activities (eg. cooking demonstrations, recipe leaflets)	

This research is a pilot study for further investigation into the marketing possibilities of game meat. Further research is necessary to identify the marketing possibilities of game meat outside the research area for this study. More scientific information is also needed on the sensory acceptance of different game species in comparison with traditional domesticated meat types. The effect of branding and packaging on consumer

acceptance of game meat as well as the effect of game meat promotion on consumer buying behaviour could provide valuable information on successful marketing techniques for game meat.

To conclude, it is important to acknowledge that this research was characterised by widespread interest in game meat and its marketing and that both consumers and marketers indicated that they want to know more about game meat. It was also evident that the game meat marketers in this research indicated that they would be able to sell more game meat if marketing is done more effectively and that consumers indicated that they were more likely to buy game meat if they were better informed on the preparation, cooking methods and nutritional value of game meat.

Die **Departement Veekundige Wetenskappe**, in samewerking met die **Departement Verbruikerswetenskap, Universiteit van Stellenbosch**, is tans besig met 'n navorsingsprojek rondom die verspreiding en verbruik van wildsvleis onder die algemene verbruiker, toeriste, supermarkte, slaghuise en restaurante. **Die studie fokus hoofsaaklik op vars en bevrore wildsvleis (bv. Springbok, Koedoe, ens.). Wildsbiltong en -droëwors is slegs van toepassing waar dit spesifiek genoem word.** Die ondersoek word in die Kaapse Metropolpool gedoen.

U is een van 394 respondente wat op 'n ewekansige wyse geselekteer is. Om hierdie rede is u inligting van groot belang om die studie in sy doel te laat slaag. Die navorser waarborg u anonimiteit. Alle inligting sal as vertroulik hanteer word, en u naam of u maatskappy se naam sal in geen navorsingsuitset verskyn nie.

Daar is nie regte of verkeerde antwoorde in die vraelys nie, ons verlang slegs u eerlike mening. Ons vertrou dat u die onderhoud sal geniet. Baie dankie vir u tyd en inset om van hierdie studie 'n sukses te maak.

Dr. Louw Hoffman
Departement Veekundige
Wetenskappe/Department
of Animal Science

Dr. De Wet Schutte
Unisearch

The **Department of Animal Science**, in conjunction with **the Department of Consumer Science, University of Stellenbosch**, is currently engaged in a research project on the distribution and consumption of game meat among general consumers, tourists, supermarkets, butcheries and restaurants. **The study focuses primarily on fresh and frozen game meat (eg. Springbok, Kudu, etc.). Game biltong and dried sausage are only relevant where specifically mentioned.** This study is being undertaken in the Cape Metropole.

You are one of 394 of respondents who have been selected on a random basis. Your input is of great importance to us and will contribute to the success of the project. The researcher guarantees your anonymity. All information will be considered confidential and your name or company's name will not be published in any research output.

There are no correct or wrong answers in this questionnaire – we only need your honest opinion. We trust you will enjoy the interview. Thank you for your time and input towards the success of this study.

Ms/Me Nina Muller
Departement Verbruikerswetenskap /
Department of Consumer
Science

Karlien Crafford
Navorsers/Researcher
Tel: (021) 808 3996
Cell: 083 7117 281

Hoe om hierdie vraelys te voltooi:

1. Omkring slegs die syfer langs die blokkie wat die meeste met u standpunt of gegewens ooreenstem.
2. Waar 'n stippellyn verskyn moet u die verlangde antwoord verskaf.

Voorbeeld:

6. Drink u koffie?

NEE	1
JA	②

6.1 Indien ja, hoe gereeld?

2 keer per dag

How to complete this questionnaire:

1. Circle the number alongside the block that agrees most closely with your point of view.
2. Supply the correct answer where there is a dotted line.

Example:

6. Do you drink coffee?

NO	1
YES	②

6.1 If yes, how often?

Twice per day

GAME MEAT / VENISON

Rek.nr. 1

1. What do you think of first when game meat is mentioned?

Plek 2

1.1.....

3

1.2 and what else?.....

4

1.3 and what else?.....

5

2. Do you eat meat?

NO	1
YES	2

231

2.1 If **no**, why not?.....

232

.....

233

-IF YOU DO NOT EAT MEAT, PLEASE GO TO QUESTION 22 ON PAGE 6

▶ 3. Have you ever eaten game meat?

NO	1
YES	2

234

3.1 If **yes**, where did you eat it?

.....

235

3.2 If **yes**, which species have you eaten?

.....

236

▶ 4. Would you order game meat in a restaurant?

NO	1
YES	2

237

5. Would you buy game meat and cook it yourself?

NO	1
YES	2

238

5.1 If **yes**, where would you buy it?

Outlet	
Butchery	1
Supermarket	2
Private dealer	3

239

▶ 6. If information on game meat was available to you, would you buy game meat or buy it more often?

NO	1
YES	2

240

7. How often do you generally eat the following types of meat?

Types of meat	More than once per month	Once per month	Four times per year	Once per year	Less than once per year	Never
Beef	1	2	3	4	5	6
Chicken	1	2	3	4	5	6
Mutton/Lamb	1	2	3	4	5	6
Pork	1	2	3	4	5	6
Ostrich	1	2	3	4	5	6
Game meat	1	2	3	4	5	6

- 241
- 242
- 243
- 244
- 245
- 246

8. Would you eat game meat if it was served to you today?

NO	1
YES	2

- 247

8.1 Why do you say that?

.....

- 248

9. Have you ever eaten game biltong?

NO	1
YES	2

- 249

10. Would you be willing to pay more for game meat than other types of meat?

NO	1
YES	2

- 250

10.1 Why do you say that?

.....

- 251

11. How often would you say is game meat available at the following outlets in your area?

Outlet	Not at all available	Sometimes available	Regularly available
Supermarkets	1	2	3
Butcheries	1	2	3
Restaurants	1	2	3

- 252
- 253
- 254

12. Would you be able to buy game meat from these outlets during the summer months, if you would want to?

NO	1
YES	2

- 255

13. Arrange the following types of meat in ascending order with regard to price with 1 as the least expensive and 6 as the most expensive

Meat type	Order of rank		
Mutton/Lamb	<input type="checkbox"/>	35
Beef	<input type="checkbox"/>	36
Chicken	<input type="checkbox"/>	37
Ostrich	<input type="checkbox"/>	38
Pork	<input type="checkbox"/>	39
Game meat	<input type="checkbox"/>	40

14. Which qualities are important when you make a decision about buying meat?

..... 112

..... 113

15. Indicate what you see as positive and negative qualities of game meat?

Positive qualities	Negative qualities		
1.....	1	<input type="checkbox"/>	<input type="checkbox"/> 185-186
2	2	<input type="checkbox"/>	<input type="checkbox"/> 187-188
3	3	<input type="checkbox"/>	<input type="checkbox"/> 189-190

16. With which one of the following types of meat would you be able to use in the greatest variety of dishes?

Meat type			
Mutton/Lamb	1	<input type="checkbox"/>	209
Beef	2		
Chicken	3		
Ostrich	4		
Pork	5		
Game meat	6		

17. Do you know how to prepare and cook game meat?

NO	1
YES	2

256

17.1 If **yes**, how would you prepare and cook game meat?.....

257

.....

18. Indicate with an X on the lines below to what degree you would like or dislike ordering each of the following types of meat **in a restaurant**.

Type of meat	Dislike to order		Like to order
Beef	Dislike to order	-----	Like to order
Chicken	Dislike to order	-----	Like to order
Mutton/Lamb	Dislike to order	-----	Like to order
Pork	Dislike to order	-----	Like to order
Ostrich	Dislike to order	-----	Like to order
Game meat	Dislike to order	-----	Like to order

258

259

260

261

262

263

19. Indicate with an X on the lines below to what degree you would like or dislike to buy each of the following types of meat **in a shop / butchery**.

Type of meat	Dislike to buy		Like to buy
Beef	Dislike to buy	-----	Like to buy
Chicken	Dislike to buy	-----	Like to buy
Mutton/Lamb	Dislike to buy	-----	Like to buy
Pork	Dislike to buy	-----	Like to buy
Ostrich	Dislike to buy	-----	Like to buy
Game meat	Dislike to buy	-----	Like to buy

264

265

266

267

268

269

20. Indicate with an X on each of the following lines to what extent you feel each of the following factors play a role in your **buying of game meat**.

E.g. Cut	Not at all	X	To a large extent	
BUYING OF MEAT				
Availability of game meat	Not at all		To a large extent	<input type="checkbox"/> 90
Price	Not at all		To a large extent	<input type="checkbox"/> 91
Quality	Not at all		To a large extent	<input type="checkbox"/> 92
Media	Not at all		To a large extent	<input type="checkbox"/> 93
Fashion	Not at all		To a large extent	<input type="checkbox"/> 94
Season	Not at all		To a large extent	<input type="checkbox"/> 95
Availability of other meat types	Not at all		To a large extent	<input type="checkbox"/> 96
Species	Not at all		To a large extent	<input type="checkbox"/> 97
Your knowledge of game meat	Not at all		To a large extent	<input type="checkbox"/> 98

21. Indicate with an X on the lines below to what extent each of the following **qualities of 1) ALL TYPES OF MEAT EXCLUDING GAME and 2) GAME MEAT** is important to you. Please answer the question with respect to both types of meat.

QUALITIES OF MEAT				
COLOUR 1) Meat excluding game.	Not at all		To a large extent	<input type="checkbox"/> 99
	Not at all		To a large extent	<input type="checkbox"/> 295
SMELL 1) Meat excluding game	Not at all		To a large extent	<input type="checkbox"/> 100
	Not at all		To a large extent	<input type="checkbox"/> 296
GENERAL APPEARANCE 1) Meat excluding game	Not at all		To a large extent	<input type="checkbox"/> 101
	Not at all		To a large extent	<input type="checkbox"/> 297
TENDERNESS 1) Meat excluding game	Not at all		To a large extent	<input type="checkbox"/> 102
	Not at all		To a large extent	<input type="checkbox"/> 298
JUICINESS 1) Meat excluding game	Not at all		To a large extent	<input type="checkbox"/> 103
	Not at all		To a large extent	<input type="checkbox"/> 299
DEGREE OF AGEING 1) Meat excluding game	Not at all		To a large extent	<input type="checkbox"/> 104
	Not at all		To a large extent	<input type="checkbox"/> 300

22. When you choose a food type, do you generally consider its health aspects?

NO	1	<input type="checkbox"/>	270
YES	2		

23. Do you think that eating game meat has health benefits?

NO	1	<input type="checkbox"/>	109
YES	2		

23.1 If **yes**, which benefits?.....
 110
 111

24. According to your opinion is game meat in fashion at the moment?

NO	1	<input type="checkbox"/>	191
YES	2		

25. According to your knowledge, do shops and restaurants supply any information regarding game meat?

NO	1	<input type="checkbox"/>	271
YES	2		

25.1 If, **yes**, what type of information do they supply?

 272

26. Since January 2001 until now, are you aware of any marketing effort to promote game meat through any form of media in South Africa?

NO	1	<input type="checkbox"/>	199
YES	2		

27. Have you ever hunted?
 273

NO	1
YES	2

28. How many times **per year** do you eat in a restaurant?

Restaurant meals per year		<input type="checkbox"/>	274
Never	1		
1-5 times	2		
6-12 times	3		
13-24 times	4		
More than 25 times	5		

29. What is your opinion on game culling / harvesting?

.....

275

30. Do you like eating new / unusual / exotic foods from time to time?

NO	1
YES	2

276

31. Indicate your gender:

Gender	
Male	1
Female	2

277

32. Indicate your age group:

Years	
- 20	1
21-30	2
31-40	3
41-50	4
51-60	5
60+	6

278

33. What is your present full time occupation / job?

Occupation/Job	
Housewife	1
Unemployed	2
Pensioner	3
Occupation / Job.....	4

279

33.1 If housewife, unemployed or pensioner, what was you last fulltime occupation/job?

.....

280

34. What is your highest formal educational qualification?

Educational qualification	
Lower than Matric /Grade 12/ Standard 10	1
Matric / Grade 12/ Standard 10	2
Degree / Post Matric Diploma	3

281

35. With which ethnic group do you associate most often?

.....

282

36. What is your total household income before deductions?

Per week	=	Per month	=	Per year	
0 - R 500	=	0 - R 2 000	=	0 - R 24 000	1
R 501 - R 1 500	=	R 2 001 - R 6 400	=	R 24 001 - R 76 800	2
R 1 501 - R 2 000	=	R 6 001 - R 8 000	=	R 76 801 - R 96 000	3
R 2 001 - R 2 500	=	R 8 004 - R10 000	=	R 96 001 - R120 000	4
R 2 501 - R 3 000	=	R10 004 - R12 000	=	R120 001 - R144 000	5
R 3 001 - R 3500	=	R12 001 - R14 000	=	R144 001 - R168 000	6
R 3 501 +	=	R14 001 +	=	R168 001 +	7

283

37. With which group do you identify yourself with regard to faith?

Religious group	
None	1
Jewish	2
Muslim	3
Christian	4
Hindu	5
Other.....	6

284

38. Please add any further comment that you would like to make.

.....

.....

.....

229
 230

Thank you very much for your time

GAME MEAT / VENISON

1. When game meat is mentioned, what is the first thought that enters your mind?

1.1.....

1.2 And what else?.....

1.3 And what else?.....

2. Do you eat meat?

NO	1
YES	2

Rek.nr. 1

Plek 2

3
 4
 5

2.1 If **no**, why not?

232
 233

IF YOU DO NOT EAT MEAT, PLEASE PROCEED TO QUESTION 10 ON PAGE 2

▶3. Have you ever eaten game meat?

NO	1
YES	2

234

3.1 If **yes**, where did you eat it?
.....

235

3.2 If **yes**, which species have you eaten?
.....

236

3.3 If **yes**, how did you respond to it?
.....

285

▶4. Would you order game meat in a restaurant in South Africa?

NO	1
YES	2

286

5. Would you order game meat in a restaurant in your own country?

NO	1
YES	2

287

6. How often do you generally eat the following types of meat?

Types of meat	More than once per month	Once per month	Four times per year	Once per year	Less than once per year	Never
Beef	1	2	3	4	5	6
Chicken	1	2	3	4	5	6
Lamb	1	2	3	4	5	6
Pork	1	2	3	4	5	6
Ostrich	1	2	3	4	5	6
Game meat	1	2	3	4	5	6

241
 242
 243
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 246

7. Would you eat game meat if it was served to you today?

NO	1
YES	2

247

7.1 Why do you say that?

248

8. Have you ever eaten game biltong?

NO	1
YES	2

249

9. Indicate with an X on the lines below to what degree you would like or dislike to order each of the following types of meat in a South African restaurant.

Type of meat	Dislike to order		Like to order
Beef	Dislike to order	-----	Like to order
Chicken	Dislike to order	-----	Like to order
Lamb	Dislike to order	-----	Like to order
Pork	Dislike to order	-----	Like to order
Ostrich	Dislike to order	-----	Like to order
Game meat	Dislike to order	-----	Like to order

288

289

290

291

292

293

10. When you choose a food type, do you generally consider its health aspects?

NO	1
YES	2

270

11. Are you of the opinion that game meat has any health benefits?

NO	1
YES	2

109

11.1 If yes, which benefits?.....

110

111

12. Have you seen any promotion on game meat during your stay in South Africa?

NO	1
YES	2

199

13. Have you ever hunted?

NO	1
YES	2

273

14. What is your opinion on game culling / harvesting?

.....

275

15. Do you enjoy eating new or unusual foods from time to time?

NO	1
YES	2

276

16. Indicate your gender:

Gender	
Male	1
Female	2

277

17. Indicate your age:

Years	
-20	1
21-30	2
31-40	3
41-50	4
51-60	5
60+	6

278

18. What is your current occupation?

.....

279

19. What is the highest level of education attained by you?

.....

281

20. What is your nationality?

.....

301

21. With which group do you identify yourself with regard to faith?

Religion	
None	1
Jewish	2
Muslim	3
Christian	4
Hindu	5
Other.....	6

284

22. Please add any comments that you would like to make

.....

229

230

THANK YOU VERY MUCH FOR YOUR TIME

BUYING AND SELLING OF GAME MEAT IN THE WESTERN CAPE

(1)

Acc. no 1

Place 2

1. When game meat is mentioned, what is the first thought that crosses your mind?

1.1.....

1.2 and what else?.....

1.3 and what else?.....

3

4

5

2. How would you rate the popularity of the following **types of fresh meat**?

Fresh meat types	Unpopular Popular								
	1	2	3	4	5	6	7	8	9
Fresh beef	1	2	3	4	5	6	7	8	9
Fresh chicken	1	2	3	4	5	6	7	8	9
Fresh mutton/lamb	1	2	3	4	5	6	7	8	9
Fresh pork	1	2	3	4	5	6	7	8	9
Fresh ostrich	1	2	3	4	5	6	7	8	9
Fresh game meat	1	2	3	4	5	6	7	8	9

6

7

8

9

10

11

3. How would you rate the popularity of the following **forms of game meat**?

Form of game meat	Not available	Unpopular Popular								
		0	1	2	3	4	5	6	7	8
Frozen game meat	0	1	2	3	4	5	6	7	8	9
Game biltong	0	1	2	3	4	5	6	7	8	9
Dried game sausage	0	1	2	3	4	5	6	7	8	9
Fresh game sausage	0	1	2	3	4	5	6	7	8	9
Fresh game meat	0	1	2	3	4	5	6	7	8	9
Other forms	0	1	2	3	4	5	6	7	8	9
Other forms	0	1	2	3	4	5	6	7	8	9

12

13

14

15

16

17

18

4. How often and how much does your company buy of the following types of meat?

Meat type	How often? (e.g. once a month)	How much? (e.g. 20 kg per month)	
Beef	<input type="text"/> <input type="text"/> 19-20
Mutton/lamb	<input type="text"/> <input type="text"/> 21-22
Pork	<input type="text"/> <input type="text"/> 23-24
Chicken	<input type="text"/> <input type="text"/> 25-26
Ostrich	<input type="text"/> <input type="text"/> 27-28
Frozen game meat	<input type="text"/> <input type="text"/> 29-30
Fresh game meat	<input type="text"/> <input type="text"/> 31-32
Biltong and dry sausage	<input type="text"/> <input type="text"/> 33-34

5. Arrange the following types of meat in ascending order of price with 1 as the least expensive and 6 as the most expensive.

Meat type	Order of rank	
Mutton/lamb	<input type="text"/> 35
Beef	<input type="text"/> 36
Chicken	<input type="text"/> 37
Ostrich	<input type="text"/> 38
Pork	<input type="text"/> 39
Game meat	<input type="text"/> 40

6. Which of the following species of game meat are available to you?

Type of game meat	Often	Sometimes	Never		
1. Blesbuck	1	2	3	<input type="checkbox"/>	41
2. Blue wildebeest	1	2	3	<input type="checkbox"/>	42
3. Bushbuck	1	2	3	<input type="checkbox"/>	43
4. Duiker	1	2	3	<input type="checkbox"/>	44
5. Eland	1	2	3	<input type="checkbox"/>	45
6. Gemsbuck / Oryx	1	2	3	<input type="checkbox"/>	46
7. Impala	1	2	3	<input type="checkbox"/>	47
8. Kudu	1	2	3	<input type="checkbox"/>	48
9. Reedbuck	1	2	3	<input type="checkbox"/>	49
10. Red hartebeest	1	2	3	<input type="checkbox"/>	50
11. Springbuck	1	2	3	<input type="checkbox"/>	51
12. Black wildebeest	1	2	3	<input type="checkbox"/>	52
13. Deer	1	2	3	<input type="checkbox"/>	53
14. Warthog	1	2	3	<input type="checkbox"/>	54
15. Zebra	1	2	3	<input type="checkbox"/>	55
16. Other.....	1	2	3	<input type="checkbox"/>	56
17. Other.....	1	2	3	<input type="checkbox"/>	57
18. Other.....	1	2	3	<input type="checkbox"/>	58

7. Which of the following species of game meat have you ever sold?

Type of game meat	Often	Sometimes	Never		
1. Blesbuck	1	2	3	<input type="checkbox"/>	59
2. Blue wildebeest	1	2	3	<input type="checkbox"/>	60
3. Bushbuck	1	2	3	<input type="checkbox"/>	61
4. Duiker	1	2	3	<input type="checkbox"/>	62
5. Eland	1	2	3	<input type="checkbox"/>	63
6. Gemsbuck / Oryx	1	2	3	<input type="checkbox"/>	64
7. Impala	1	2	3	<input type="checkbox"/>	65
8. Kudu	1	2	3	<input type="checkbox"/>	66
9. Reedbuck	1	2	3	<input type="checkbox"/>	67
10. Red hartebeest	1	2	3	<input type="checkbox"/>	68
11. Springbuck	1	2	3	<input type="checkbox"/>	69
12. Black wildebeest	1	2	3	<input type="checkbox"/>	70
13. Deer	1	2	3	<input type="checkbox"/>	71
14. Warthog	1	2	3	<input type="checkbox"/>	72
15. Zebra	1	2	3	<input type="checkbox"/>	73
16. Other.....	1	2	3	<input type="checkbox"/>	74
17. Other.....	1	2	3	<input type="checkbox"/>	75
18. Other.....	1	2	3	<input type="checkbox"/>	76

8. Indicate with an X on each of the lines below, to what degree you feel each of the following factors play a roll in your company's **game meat buying pattern**.

GAME MEAT BUYING PATTERN			
Eg. Cut	Not at all	_____	To a large extent <input type="checkbox"/> 77
Distance	Not at all	_____	To a large extent <input type="checkbox"/> 78
Availability of game meat	Not at all	_____	To a large extent <input type="checkbox"/> 79
Price	Not at all	_____	To a large extent <input type="checkbox"/> 80
Quality	Not at all	_____	To a large extent <input type="checkbox"/> 81
Media	Not at all	_____	To a large extent <input type="checkbox"/> 82
Fashion	Not at all	_____	To a large extent <input type="checkbox"/> 83
Season	Not at all	_____	To a large extent <input type="checkbox"/> 84
Availability of other meat	Not at all	_____	To a large extent <input type="checkbox"/> 85
Species	Not at all	_____	To a large extent <input type="checkbox"/> 86
Your knowledge of game meat	Not at all	_____	To a large extent <input type="checkbox"/> 87
Supplier	Not all	_____	To a large extent <input type="checkbox"/> 88
Regulations	Not all	_____	To a large extent <input type="checkbox"/> 89
Shelf life	Not at all	_____	To a large extent <input type="checkbox"/> 89

9. Indicate with an X on each of the following lines to what extent you feel each of the following factors play a role in your company's **selling of game meat**.

E.g. Cut	Not at all			To a large extent		
SELLING OF GAME MEAT						
Availability of game meat	Not at all			To a large extent	<input type="checkbox"/>	90
Price	Not at all			To a large extent	<input type="checkbox"/>	91
Quality	Not at all			To a large extent	<input type="checkbox"/>	92
Media	Not at all			To a large extent	<input type="checkbox"/>	93
Fashion	Not at all			To a large extent	<input type="checkbox"/>	94
Season	Not at all			To a large extent	<input type="checkbox"/>	95
Availability of other meat types	Not at all			To a large extent	<input type="checkbox"/>	96
Species	Not at all			To a large extent	<input type="checkbox"/>	97
Consumer knowledge of game meat	Not at all			To a large extent	<input type="checkbox"/>	98

10. Indicate with an X on the lines below to what extent each of the following **qualities of 1) ALL TYPES OF MEAT EXCLUDING GAME and 2) GAME MEAT** is important to the consumer. Please answer the question with respect to both of the above

QUALITIES OF MEAT						
COLOUR	Not at all			To a large extent	<input type="checkbox"/>	99
1) Meat excluding game.	Not at all			To a large extent	<input type="checkbox"/>	295
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	
SMELL	Not at all			To a large extent	<input type="checkbox"/>	100
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	296
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	
GENERAL APPEARANCE	Not at all			To a large extent	<input type="checkbox"/>	101
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	297
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	
TENDERNESS	Not at all			To a large extent	<input type="checkbox"/>	102
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	298
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	
JUICINESS	Not at all			To a large extent	<input type="checkbox"/>	103
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	299
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	
DEGREE OF AGEING	Not at all			To a large extent	<input type="checkbox"/>	104
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	300
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	

11. What is the strongest restraining factor in your company's purchasing of game meat?..... 105
 106

12. Do you give special attention to the packaging of game meat?

NO	1
YES	2

107

12.1 If **yes**, what do you do?

108

→13. Do you think there are any health benefits associated with game meat?

NO	1
YES	2

109

13.1 If **yes**, which health benefits?..... 110
 111

→14. Which qualities of meat do you normally consider when you buy game meat?

112
 113

15. Is the game meat that you receive usually of a constant quality?

NO	1
YES	2

114

15.1 Why do you say that?

115

16.1 Do you purchase game meat as carcasses or as cuts?

Cuts	1
Carcasses	2

116
 117

16.1 If **carcasses**, how do you determine the cuts into which you divide the carcasses?

118

17. What species and cuts per species of game meat do you usually offer?

Species	Cuts per species	
1.....	<input type="checkbox"/> 119 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 120-122
2.....	<input type="checkbox"/> 123 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 124-126
3.....	<input type="checkbox"/> 127 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 128-130
4.....	<input type="checkbox"/> 131 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 132-134
5.....	<input type="checkbox"/> 135 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 136-138
6.....	<input type="checkbox"/> 139 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 140-142

18. During which month(s) of the year do you usually buy the most game meat?

.....

143

19. Are there certain times of the year at which you usually sell more game meat than at other times?

NO	1
YES	2

144

19.1 If **yes**, which time of the year?.....

.....

145

20. During which month(s) of the year is game meat available in your outlets?

.....

146

21. Is there, according to your information, a demand for game meat during the summer months?

NO	1
YES	2

147

22. If you should want it, would you be able to buy game meat in summer?

NO	1
YES	2

148

22.1 If **yes**, would you be able to supply the demand?

NO	1
YES	2

149

▶23. Do you sell value-added game meat products?

NO	1
YES	2

150

23.1 If **no**, have you sold it in the past?

NO	1
YES	2

151

▶23.2 If **yes**, which of the following products have you sold?

Game meat products			
Biltong	1	<input type="checkbox"/>	152
Dried sausage	2	<input type="checkbox"/>	153
Marinated fillet	3	<input type="checkbox"/>	154
Rolled roast	4	<input type="checkbox"/>	155
Deboned shoulder	5	<input type="checkbox"/>	156
Kebabs/Sosaties	6	<input type="checkbox"/>	157
Sausage	7	<input type="checkbox"/>	158
Other.....	8	<input type="checkbox"/>	159
Other.....	9	<input type="checkbox"/>	160

24. Where is your main supplier of game meat located?

Place			
Botswana	1	<input type="checkbox"/>	161
Gauteng	2	<input type="checkbox"/>	162
KwaZulu-Natal	3	<input type="checkbox"/>	163
Mpumelanga	4	<input type="checkbox"/>	164
Namibia	5	<input type="checkbox"/>	165
Northern Province	6	<input type="checkbox"/>	166
Northern Cape	7	<input type="checkbox"/>	167
North-west Province	8	<input type="checkbox"/>	168
Eastern Cape	9	<input type="checkbox"/>	169
Free state	10	<input type="checkbox"/>	170
Western Cape	11	<input type="checkbox"/>	171

25. From who do you usually buy game meat?

Supplier			
Abattoir	1	<input type="checkbox"/>	172
Farmer / hunter	2	<input type="checkbox"/>	173
Wholesaler	3	<input type="checkbox"/>	174
Importer	4	<input type="checkbox"/>	175
Private dealer	5	<input type="checkbox"/>	176

25.1 Why do you make use of this supplier?..... 177

26. Is the supply of game meat to you usually reliable?

NO	1	<input type="checkbox"/>	178
YES	2		

26.1 Explain your answer..... 179

27. Why are there not more consumers who buy game meat?..... 180
 181

28. Have you ever come across consumers who are not in favour of your selling of game meat?

NO	1
YES	2

182

28.1 If **yes**, what was their main reason?..... 183

▶ 29. Do you think that consumers are aware of the health benefits of game meat?

NO	1
YES	2

184

30. Viewed from the perspective of the consumer, what do consumers see as the positive and negative attributes of game meat?

Positive attributes	Negative attributes
1.....	1
2	2
3	3

185-186

187-188

189-190

31. Do you think game meat is regarded as a fashion item?

NO	1
YES	2

191

32. Do you ever receive information on game meat?

NO	1
YES	2

192

32.1 If **yes**, what (a) type of information do you receive and who is your (b) source?

(a) Type of information	(b) Source
1.	1.
2.	2.

193-194

195-196

33. Will the establishment of a central organization for supplying and marketing game meat have a positive or negative effect on your sales of game meat?

Positive	1	<input type="checkbox"/>	197
Negative	2		

33.1 Why do you say that?.....
 198

34. Are you aware of any marketing effort to promote game meat through any of the media in South Africa between January 2001 and the present?

NO	1	<input type="checkbox"/>	199
YES	2		

35. Has your company ever made an effort to inform consumers of the health benefits of game meat?

NO	1	<input type="checkbox"/>	200
YES	2		

35.1 If **yes**, what was done?.....
 201

36. Do your shops recommend any cooking methods for specific cuts and species of game meat?

NO	1	<input type="checkbox"/>	202
YES	2		

37. Do you ever supply restaurants with game meat?

NO	1	<input type="checkbox"/>	203
YES	2		

38. If you were able to get a regular supply of good quality game meat, how much do you think you would be able to sell per month?
 294

39. Do you have any further comments?
 229
 230

Thank you very much for your time.

BUYING AND SELLING OF GAME MEAT IN THE WESTERN CAPE

(2)
 Acc. no 1
 Place 2
 3
 4
 5

1. When game meat is mentioned, what is the first thought that crosses your mind?

1.1.....

1.2 and what else?.....

1.3 and what else?.....

2. How would you rate the popularity of the following **types of fresh meat**?

Fresh meat types	Unpopular Popular								
	1	2	3	4	5	6	7	8	9
Fresh beef	1	2	3	4	5	6	7	8	9
Fresh chicken	1	2	3	4	5	6	7	8	9
Fresh mutton/lamb	1	2	3	4	5	6	7	8	9
Fresh pork	1	2	3	4	5	6	7	8	9
Fresh ostrich	1	2	3	4	5	6	7	8	9
Fresh game meat	1	2	3	4	5	6	7	8	9

6
 7
 8
 9
 10
 11

3. How would you rate the popularity of the following **forms of game meat**?

Form of game meat	Not avail-able	Unpopular Popular								
		0	1	2	3	4	5	6	7	8
Frozen game meat	0	1	2	3	4	5	6	7	8	9
Game biltong	0	1	2	3	4	5	6	7	8	9
Dried game sausage	0	1	2	3	4	5	6	7	8	9
Fresh game sausage	0	1	2	3	4	5	6	7	8	9
Fresh game meat	0	1	2	3	4	5	6	7	8	9
Other forms	0	1	2	3	4	5	6	7	8	9
Other forms	0	1	2	3	4	5	6	7	8	9

12
 13
 14
 15
 16
 17
 18

4. **How often and how much** does your company buy of the following types of meat?

Meat type	How often? (e.g. once a month)	How much? (e.g. 20 kg per month)	
Beef	
Mutton/lamb	<input type="checkbox"/> <input type="checkbox"/> 19-20
Pork	<input type="checkbox"/> <input type="checkbox"/> 21-22
Chicken	<input type="checkbox"/> <input type="checkbox"/> 23-24
Ostrich	<input type="checkbox"/> <input type="checkbox"/> 25-26
Frozen game meat	<input type="checkbox"/> <input type="checkbox"/> 27-28
Fresh game meat	<input type="checkbox"/> <input type="checkbox"/> 29-30
Biltong and dry sausage	<input type="checkbox"/> <input type="checkbox"/> 31-32
			<input type="checkbox"/> <input type="checkbox"/> 33-34

5. Arrange the following types of meat in ascending order of price with 1 as the least expensive and 6 as the most expensive.

Meat type	Order of rank	
Mutton/lamb	<input type="checkbox"/> 35
Beef	<input type="checkbox"/> 36
Chicken	<input type="checkbox"/> 37
Ostrich	<input type="checkbox"/> 38
Pork	<input type="checkbox"/> 39
Game meat	<input type="checkbox"/> 40

6. Which of the following species of game meat are **available to you**?

Type of game meat	Often	Sometimes	Never
1. Blesbuck	1	2	3
2. Blue wildebeest	1	2	3
3. Bushbuck	1	2	3
4. Duiker	1	2	3
5. Eland	1	2	3
6. Gemsbuck / Oryx	1	2	3
7. Impala	1	2	3
8. Kudu	1	2	3
9. Reedbuck	1	2	3
10. Red hartebeest	1	2	3
11. Springbuck	1	2	3
12. Black wildebeest	1	2	3
13. Deer	1	2	3
14. Warthog	1	2	3
15. Zebra	1	2	3
16. Other.....	1	2	3
17. Other.....	1	2	3
18. Other.....	1	2	3

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- 42
- 43
- 44
- 45
- 46
- 47
- 48
- 49
- 50
- 51
- 52
- 53
- 54
- 55
- 56
- 57
- 58

7. Which of the following species of game meat **have you ever sold**?

Type of game meat	Often	Sometimes	Never
1. Blesbuck	1	2	3
2. Blue wildebeest	1	2	3
3. Bushbuck	1	2	3
4. Duiker	1	2	3
5. Eland	1	2	3
6. Gemsbuck / Oryx	1	2	3
7. Impala	1	2	3
8. Kudu	1	2	3
9. Reedbuck	1	2	3
10. Red hartebeest	1	2	3
11. Springbuck	1	2	3
12. Black wildebeest	1	2	3
13. Deer	1	2	3
14. Warthog	1	2	3
15. Zebra	1	2	3
16. Other.....	1	2	3
17. Other.....	1	2	3
18. Other.....	1	2	3

- 59
- 60
- 61
- 62
- 63
- 64
- 65
- 66
- 67
- 68
- 69
- 70
- 71
- 72
- 73
- 74
- 75
- 76

8. Indicate with an X on each of the lines below, to what degree you feel each of the following factors play a roll in your company`s **game meat buying pattern.**

GAME MEAT BUYING PATTERN			
Eg. Cut	Not at all	_____	To a large extent <input type="checkbox"/> 77
Distance	Not at all	_____	To a large extent <input type="checkbox"/> 78
Availability of game meat	Not at all	_____	To a large extent <input type="checkbox"/> 79
Price	Not at all	_____	To a large extent <input type="checkbox"/> 80
Quality	Not at all	_____	To a large extent <input type="checkbox"/> 81
Media	Not at all	_____	To a large extent <input type="checkbox"/> 82
Fashion	Not at all	_____	To a large extent <input type="checkbox"/> 83
Season	Not at all	_____	To a large extent <input type="checkbox"/> 84
Availability of other meat	Not at all	_____	To a large extent <input type="checkbox"/> 85
Species	Not at all	_____	To a large extent <input type="checkbox"/> 86
Your knowledge of game meat	Not at all	_____	To a large extent <input type="checkbox"/> 87
Supplier	Not all	_____	To a large extent <input type="checkbox"/> 88
Regulations	Not all	_____	To a large extent <input type="checkbox"/> 89
Shelf life	Not at all	_____	To a large extent <input type="checkbox"/> 89

9. Indicate with an X on each of the following lines to what extent you feel each of the following factors play a role in your company's **selling of game meat**.

E.g. Cut		Not at all		To a large extent	
SELLING OF GAME MEAT					
Availability of game meat	Not at all			To a large extent	<input type="checkbox"/> 90
Price	Not at all			To a large extent	<input type="checkbox"/> 91
Quality	Not at all			To a large extent	<input type="checkbox"/> 92
Media	Not at all			To a large extent	<input type="checkbox"/> 93
Fashion	Not at all			To a large extent	<input type="checkbox"/> 94
Season	Not at all			To a large extent	<input type="checkbox"/> 95
Availability of other meat types	Not at all			To a large extent	<input type="checkbox"/> 96
Species	Not at all			To a large extent	<input type="checkbox"/> 97
Consumer knowledge of game meat	Not at all			To a large extent	<input type="checkbox"/> 98

10. Indicate with an X on the lines below to what extent each of the following **qualities of 1) ALL TYPES OF MEAT EXCLUDING GAME and 2) GAME MEAT** is important to the consumer. Please answer the question with respect to both of the above

		QUALITIES OF MEAT				
COLOUR						
1) Meat excluding game.	Not at all			To a large extent	<input type="checkbox"/>	99
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	295
SMELL						
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	100
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	296
GENERAL APPEARANCE						
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	101
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	297
TENDERNESS						
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	102
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	298
JUICINESS						
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	103
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	299
DEGREE OF AGEING						
1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	104
2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	300

11. What is the strongest restraining factor in your company's purchasing of game meat?.....

105
 106

12. Do you give special attention to the packaging of game meat?

NO	1
YES	2

107

12.1 If **yes**, what do you do?

108

▶13. Do you think there are any health benefits associated with game meat?

NO	1
YES	2

109

13.1 If **yes**, which health benefits?.....

110
 111

▶14. Which qualities of meat do you normally consider when you buy game meat?

112
 113

15. Is the game meat that you receive usually of a constant quality?

NO	1
YES	2

114

15.1 Why do you say that?

115
 116

16. Do you purchase game meat as carcasses or as cuts?

Cuts	1
Carcasses	2

117

16.1 If **carcasses**, how do you determine the cuts into which you divide the carcass?

118

17. What species and cuts per species game meat do you usually offer?

Species	Cuts per species	
1.....	<input type="checkbox"/> 119 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 120-122
2.....	<input type="checkbox"/> 123 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 124-126
3.....	<input type="checkbox"/> 127 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 128-130
4.....	<input type="checkbox"/> 131 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 132-134
5.....	<input type="checkbox"/> 135 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 136-138
6.....	<input type="checkbox"/> 139 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 140-142

18. During which month(s) of the year do you usually buy the most game meat?

.....

143

19. Are there certain times of the year at which you usually sell more game meat than at other times?

NO	1
YES	2

144

19.1 If **yes**, which time of the year?.....

.....

145

20. During which month(s) of the year is game meat available in your outlets?

.....

146

21. Is there, according to your information, a demand for game meat during the summer months?

NO	1
YES	2

147

22. If you should want it, would you be able to buy game meat in the summer?

NO	1
YES	2

148

22.1 If **yes**, would you be able to supply the demand?

NO	1
YES	2

149

23. Do you sell value-added game meat products?

NO	1
YES	2

150

23.1 If **no**, have you sold it in the past?

NO	1
YES	2

151

23.2 If **yes**, which of the following products have you sold?

Game meat products			
Biltong	1	<input type="checkbox"/>	152
Dried sausage	2	<input type="checkbox"/>	153
Marinated fillet	3	<input type="checkbox"/>	154
Rolled roast	4	<input type="checkbox"/>	155
Deboned shoulder	5	<input type="checkbox"/>	156
Kebabs/sosaties	6	<input type="checkbox"/>	157
Sausage	7	<input type="checkbox"/>	158
Other.....	8	<input type="checkbox"/>	159
Other.....	9	<input type="checkbox"/>	160

24. Where is your main supplier of game meat located?

Place			
Botswana	1	<input type="checkbox"/>	161
Gauteng	2	<input type="checkbox"/>	162
KwaZulu-Natal	3	<input type="checkbox"/>	163
Mpumelanga	4	<input type="checkbox"/>	164
Namibia	5	<input type="checkbox"/>	165
Northern Province	6	<input type="checkbox"/>	166
Northern Cape	7	<input type="checkbox"/>	167
North-west Province	8	<input type="checkbox"/>	168
Eastern Cape	9	<input type="checkbox"/>	169
Free state	10	<input type="checkbox"/>	170
Western Cape	11	<input type="checkbox"/>	171

25. Who do you usually buy game meat from?

Supplier			
Abattoir	1	<input type="checkbox"/>	172
Farmer / hunter	2	<input type="checkbox"/>	173
Wholesaler	3	<input type="checkbox"/>	174
Importer	4	<input type="checkbox"/>	175
Private dealer	5	<input type="checkbox"/>	176

25.1 Why do you make use of this supplier?..... 177

.....

26. Is the supply of game meat to you usually reliable?

NO	1	<input type="checkbox"/>	178
YES	2		

26.1 Explain your answer..... 179

27. Why are there not more consumers who buy game meat?

.....

180
 181

28. Have you ever come across consumers who are not in favour of your selling of game meat?

NO	1
YES	2

182

28.1 If **yes**, what was their main reason?.....

183

29. Do you think that consumers are aware of the health benefits of game meat?

NO	1
YES	2

184

30. Viewed from the perspective of the consumer, what do consumers see as the positive and negative attributes of game meat?

Positive attributes	Negative attributes
1.....	1
2	2
3	3

185-186

187-188

189-190

31. Do you think game meat is regarded as a fashion item?

NO	1
YES	2

191

32. Do you ever receive information on game meat?

NO	1
YES	2

192

32.1 If **yes**, what (a) type of information do you receive and who is your (b) source?

(a) Type of information	(b) Source
1.	1.
2.	2.

193-194

195-196

33. Will the establishment of a central organization for supplying and marketing game meat have a positive or negative effect on your sales of game meat?

Positive	1	<input type="checkbox"/>	197
Negative	2		

33.1 Why do you say that?.....

198

34. Are you aware of any marketing effort to promote game meat through any of the media in South Africa between January 2001 and the present?

NO	1	<input type="checkbox"/>	199
YES	2		

35. Has your company ever made an effort to inform consumers of the health benefits of game meat?

NO	1	<input type="checkbox"/>	200
YES	2		

35.1 If **yes**, what was done?.....

201

36. Do your shops recommend any cooking methods for specific cuts and species of game meat?

NO	1	<input type="checkbox"/>	202
YES	2		

37. Do you ever supply restaurants with game meat?

NO	1	<input type="checkbox"/>	203
YES	2		

38. Are some of your clients hunters?

DON'T KNOW	1		
NO	2	<input type="checkbox"/>	204
YES	3	<input type="checkbox"/>	205

38.1 If **yes**, what percentage?.....

→ 39. Do you offer a processing service to hunters?

NO	1	<input type="checkbox"/>	206
YES	2	<input type="checkbox"/>	

40. Do you have any further comments?

.....

.....

.....

<input type="checkbox"/>	229
<input type="checkbox"/>	230

Thank you very much for your time

BUYING AND SELLING OF GAME MEAT IN THE WESTERN CAPE

FOR OFFICE USE ONLY

(3)
 Acc. no 1

Place 2

1. When game meat is mentioned, what is the first thought that enters your mind?

1.1.....

1.2 and what else?.....

1.3 and what else?.....

3

4

5

2. How would you rate the popularity of the following **types of fresh meat**?

Fresh meat types	Unpopular Popular								
	1	2	3	4	5	6	7	8	9
Fresh beef	1	2	3	4	5	6	7	8	9
Fresh chicken	1	2	3	4	5	6	7	8	9
Fresh mutton/lamb	1	2	3	4	5	6	7	8	9
Fresh pork	1	2	3	4	5	6	7	8	9
Fresh ostrich	1	2	3	4	5	6	7	8	9
Fresh game meat	1	2	3	4	5	6	7	8	9

6

7

8

9

10

11

3. How often and how much does your company buy of the following **types of meat**?

Meat type	How often?	How much?
	(e.g. once a month)	(e.g. 20 kg per month)
Beef
Mutton/lamb
Pork
Chicken
Ostrich
Frozen game meat
Fresh game meat
Biltong and dry sausage

19-20

21-22

23-24

25-26

27-28

29-30

31-32

33-34

4. Arrange the following types of meat in ascending order of price with 1 as the least expensive and 6 as the most expensive.

Meat type	Order of rank		
Mutton/Lamb	<input type="checkbox"/>	35
Beef	<input type="checkbox"/>	36
Chicken	<input type="checkbox"/>	37
Ostrich	<input type="checkbox"/>	38
Pork	<input type="checkbox"/>	39
Game meat	<input type="checkbox"/>	40

5. Which of the following species of game meat **are available to you?**

Type of game meat	Often	Sometimes	Never		
1. Blesbuck	1	2	3	<input type="checkbox"/>	41
2. Blue wildebeest	1	2	3	<input type="checkbox"/>	42
3. Bushbuck	1	2	3	<input type="checkbox"/>	43
4. Duiker	1	2	3	<input type="checkbox"/>	44
5. Eland	1	2	3	<input type="checkbox"/>	45
6. Gemsbuck / Oryx	1	2	3	<input type="checkbox"/>	46
7. Impala	1	2	3	<input type="checkbox"/>	47
8. Kudu	1	2	3	<input type="checkbox"/>	48
9. Reedbuck	1	2	3	<input type="checkbox"/>	49
10. Red hartebeest	1	2	3	<input type="checkbox"/>	50
11. Springbuck	1	2	3	<input type="checkbox"/>	51
12. Black wildebeest	1	2	3	<input type="checkbox"/>	52
13. Deer	1	2	3	<input type="checkbox"/>	53
14. Warthog	1	2	3	<input type="checkbox"/>	54
15. Zebra	1	2	3	<input type="checkbox"/>	55
16. Other.....	1	2	3	<input type="checkbox"/>	56
17. Other.....	1	2	3	<input type="checkbox"/>	57
18. Other.....	1	2	3	<input type="checkbox"/>	58

6. Which of the following species of game meat **have you ever sold**?

Type of game meat	Often	Sometimes	Never		
1. Blesbuck	1	2	3	<input type="checkbox"/>	59
2. Blue wildebeest	1	2	3	<input type="checkbox"/>	60
3. Bushbuck	1	2	3	<input type="checkbox"/>	61
4. Duiker	1	2	3	<input type="checkbox"/>	62
5. Eland	1	2	3	<input type="checkbox"/>	63
6. Gemsbuck / Oryx	1	2	3	<input type="checkbox"/>	64
7. Impala	1	2	3	<input type="checkbox"/>	65
8. Kudu	1	2	3	<input type="checkbox"/>	66
9. Reedbuck	1	2	3	<input type="checkbox"/>	67
10. Red hartebeest	1	2	3	<input type="checkbox"/>	68
11. Springbuck	1	2	3	<input type="checkbox"/>	69
12. Black wildebeest	1	2	3	<input type="checkbox"/>	70
13. Deer	1	2	3	<input type="checkbox"/>	71
14. Warthog	1	2	3	<input type="checkbox"/>	72
15. Zebra	1	2	3	<input type="checkbox"/>	73
16. Other.....	1	2	3	<input type="checkbox"/>	74
17. Other.....	1	2	3	<input type="checkbox"/>	75
18. Other.....	1	2	3	<input type="checkbox"/>	76

8. Indicate with an X on each of the lines below, to what degree you feel each of the following factors play a roll in your company's **game meat buying pattern.**

GAME MEAT BUYING PATTERN			
Eg. Cut	Not at all	_____	To a large extent <input type="checkbox"/> 77
Distance	Not at all	_____	To a large extent <input type="checkbox"/> 78
Availability of game meat	Not at all	_____	To a large extent <input type="checkbox"/> 79
Price	Not at all	_____	To a large extent <input type="checkbox"/> 80
Quality	Not at all	_____	To a large extent <input type="checkbox"/> 81
Media	Not at all	_____	To a large extent <input type="checkbox"/> 82
Fashion	Not at all	_____	To a large extent <input type="checkbox"/> 83
Season	Not at all	_____	To a large extent <input type="checkbox"/> 84
Availability of other meat	Not at all	_____	To a large extent <input type="checkbox"/> 85
Species	Not at all	_____	To a large extent <input type="checkbox"/> 86
Your knowledge of game meat	Not at all	_____	To a large extent <input type="checkbox"/> 87
Supplier	Not all	_____	To a large extent <input type="checkbox"/> 88
Regulations	Not all	_____	To a large extent <input type="checkbox"/> 89
Shelf life	Not at all	_____	To a large extent <input type="checkbox"/> 89

9. Indicate with an X on each of the following lines to what extent you feel each of the following factors play a role in your company's **selling of game meat**.

E.g. Cut	Not at all			To a large extent		
SELLING OF GAME MEAT						
Availability of game meat	Not at all			To a large extent	<input type="checkbox"/>	90
Price	Not at all			To a large extent	<input type="checkbox"/>	91
Quality	Not at all			To a large extent	<input type="checkbox"/>	92
Media	Not at all			To a large extent	<input type="checkbox"/>	93
Fashion	Not at all			To a large extent	<input type="checkbox"/>	94
Season	Not at all			To a large extent	<input type="checkbox"/>	95
Availability of other meat types	Not at all			To a large extent	<input type="checkbox"/>	96
Species	Not at all			To a large extent	<input type="checkbox"/>	97
Consumer knowledge of game meat	Not at all			To a large extent	<input type="checkbox"/>	98

10. Indicate with an X on the lines below to what extent each of the following **qualities of 1) ALL TYPES OF MEAT EXCLUDING GAME and 2) GAME MEAT** is important to the consumer. Please answer the question with respect to both of the above

QUALITIES OF MEAT							
COLOUR	1) Meat excluding game.	Not at all			To a large extent	<input type="checkbox"/>	99
	2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	295
SMELL	1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	100
	2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	296
GENERAL APPEARANCE	1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	101
	2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	297
TENDERNESS	1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	102
	2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	298
JUICINESS	1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	103
	2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	299
DEGREE OF AGEING	1) Meat excluding game	Not at all			To a large extent	<input type="checkbox"/>	104
	2) Game meat	Not at all			To a large extent	<input type="checkbox"/>	300

10. What is the strongest restraining factor in your company's purchasing of game meat?.....

105
 106

11. Do you think there are any health benefits associated with game meat?

NO	1
YES	2

109

11.1 If **yes**, which health benefits?.....

110
 111

12. Which qualities of meat do you normally consider when you buy game meat?

112
 113

13. Is the game meat that you receive usually of constant quality?

NO	1
YES	2

114

13.1 Why do you say that?

115
 116

14 Do you purchase game meat as carcasses or as cuts?

Cuts	1
Carcasses	2

117

14.1 If **carcasses**, how do you determine the cuts to into which you divide the carcass?

118

15. What species and cuts per species of game meat do you usually offer?

Species	Cuts per specie	
1.....	<input type="checkbox"/> 119 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 120-122
2.....	<input type="checkbox"/> 123 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 124-126
3.....	<input type="checkbox"/> 127 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 128-130
4.....	<input type="checkbox"/> 131 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 132-134
5.....	<input type="checkbox"/> 135 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 136-138
6.....	<input type="checkbox"/> 139 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 140-142

16. During which month(s) of the year do you usually buy the most game meat?

.....

143

17. Are there certain times of the year at which you usually sell more game meat than at other times?

NO	1
YES	2

144

17.1 If **yes**, which time of the year?.....

.....

145

18. During which month(s) of the year is game meat available in your restaurant?

.....

146

19. Is there, according to your information, a demand for game meat during the summer months?

NO	1
YES	2

147

20. If you should want it, would you be able to buy game meat in the summer?

NO	1
YES	2

148

20.1 If **yes**, would you be able to supply the demand?

NO	1
YES	2

149

21. Where is your main supplier of game meat located?

Place	
Botswana	1
Gauteng	2
KwaZulu-Natal	3
Mpumelanga	4
Namibia	5
Northern Province	6
Northern Cape	7
North-west Province	8
Eastern Cape	9
Free state	10
Western Cape	11

161

162

163

164

165

166

167

168

169

170

171

22. From whom do you usually buy game meat?

Supplier	
Abattoir	1
Farmer / hunter	2
Wholesaler	3
Importer	4
Private dealer	5

172

173

174

175

176

22.1 Why do you make use of this supplier?

177

23. Is the supply of game meat to you usually reliable?

NO	1	<input type="checkbox"/>	178
YES	2		

23.1 Explain your answer..... 179

24. Why are there not more consumers who buy game meat?.....

..... 180
 181

25. Have you ever come across consumers who are not in favour of your selling of game meat?

NO	1	<input type="checkbox"/>	182
YES	2		

25.1 If **yes**, what was their main reason?..... 183

26. Do you think that consumers are aware of the health benefits of game meat?

NO	1	<input type="checkbox"/>	184
YES	2		

27. Viewed from the perspective of the consumer, what do consumers see as the positive and negative attributes of game meat?

Positive attributes	Negative attributes	
1.....	1	<input type="checkbox"/> <input type="checkbox"/> 185-186
2	2	<input type="checkbox"/> <input type="checkbox"/> 187-188
3	3	<input type="checkbox"/> <input type="checkbox"/> 189-190

28. Do you think game meat is regarded as a fashion item?

NO	1	<input type="checkbox"/>	191
YES	2		

29. Do you ever receive information on game meat?

NO	1
YES	2

192

29.1 If **yes**, what (a) type of information do you receive and who is your (b) source?

(a) Type of information	(b) Source
1.	1.
2.	2.

193-194

195-196

30. Will the establishment of a central organization for supplying and marketing game meat have a positive or negative effect on your sales of game meat?

Positive	1
Negative	2

197

30.1 Why do you say that?.....
.....

198

31. Are you aware of any marketing effort to promote game meat through any of the media in South Africa between January 2001 and the present?

NO	1
YES	2

199

32. Has your restaurant ever made an effort to inform consumers of the health benefits associated with game meat?

NO	1
YES	2

200

32.1 If **yes**, what was done?.....
.....

201

33. Are some of your clients hunters?

DON'T KNOW	1
NO	2
YES	3

204

33.1 If **yes**, what percentage?.....

205

34. How is the game meat that you buy packaged?

.....

207
 208

35. Which of the following types of meat do you consider the most versatile?

Meat type	
Mutton/lamb	1
Beef	2
Chicken	3
Ostrich	4
Pork	5
Game meat	6

209

36. What percentage of the following courses on your menu consists of venison?

Course	%
Starter
Main meal
Buffet
Other.....

210
 211
 212
 213

37. Which cooking methods do you use for game meat?

.....

214-215
 216-217

38. Have you ever had game meat on promotion in your restaurant?

NO	1
YES	2

218

39. How many out of every ten consumers that visit your restaurant order game meat?

.....

219

40. In which of the following **age** categories would you place the typical game meat eater in your restaurant?

Age	
-20	1
21-30	2
31-40	3
41-50	4
51-60	5
60+	6

220

41. In which of the following average **professional groups**, would you place the typical game meat eater?

Profession	
Professional	1
Non-Professional	2
Labour	3

221

42. In which of the following **educational levels** would you fit the typical game meat eater?

Educational level	
Less than matric/Grade 12	1
Matric/Grade 12	2
Degree/ Post-matric deploma	3

222

43. When comparing selling prices, is game meat more expensive than the following types of meat?

Meat type	Not available	NO	YES
Mutton/lamb	0	1	2
Beef	0	1	2
Pork	0	1	2
Ostrich	0	1	2
Chicken	0	1	2

223

224

225

226

227

44. Would you say that average game meat eaters in your restaurant are mostly South African or tourists?

South-African	1
Tourist	2

228

45. Do you have any further comments?

.....

229

.....

230

Thank you very much for your time