

Quality perception and consumer attitudes to «specific quality beef» in Aragón, Spain

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Abstract

Over the last decade, beef consumption has decreased in most European countries, including Spain. Along with other factors that have contributed towards greater competition in agricultural markets, this has led to an increase in the offer of high-added-value beef products - a strategy the sector also follows to help it deal with the crisis caused by a number of health scandals. The aim of the present study was to analyse consumer attitudes towards «specific quality beef» (SQB; beef with quality specifications as indicated by labels or public quality denominations). A relationship was seen with respect to the level of consumer knowledge and the purchase of this type of product. Those with a higher average income and higher level of education had a more favourable attitude towards them. The butcher was the most important source of consumer information on SQB. Price was the factor that most limited the consumption of these products.

Additional key words: beliefs, consumer groups, multivariate analysis, quality attributes, quality cues, specific quality beef.

Resumen

Calidad percibida y actitudes de los consumidores hacia las carnes de vacuno de calidad diferenciada en Aragón

En el último decenio, el consumo de carne de vacuno ha experimentado una evolución decreciente en los países europeos, también manifestada en el mercado español. Consecuencia de esta situación y de otros factores que han contribuido a aumentar la competencia en los mercados, se ha producido un incremento de la oferta de productos con mayor valor añadido. Así mismo, esta estrategia constituye una iniciativa para hacer frente a las consecuencias de las crisis sanitarias. El objetivo de este trabajo fue analizar las actitudes de los consumidores hacia las carnes de vacuno de calidad diferenciada. Los consumidores con un mayor nivel de ingresos medios y de estudios, tienen una actitud más favorable hacia este tipo de carnes de vacuno. También se han encontrado diferencias entre consumidores con relación al grado de conocimiento y la compra de carnes de vacuno de calidad diferenciada. El carnicero es la fuente de información más importante para este tipo de carnes y el precio el factor más limitante para su consumo.

Palabras clave adicionales: análisis multivariante, carne de vacuno de calidad diferenciada, creencias, segmentación de consumidores, señales de la calidad.

Introduction

Negative consumer opinion on the «healthiness» of eating meat in general, and beef in particular, has contributed to a stagnation in the latter's consumption. The use of anabolic substances and clenbuterol to fatten

cattle negatively affected beef consumption (Gracia and Albisu, 1995) even before the emergence of bovine spongiform encephalopathy (BSE), which contributed to major a lack of consumer confidence in this type of meat. The first cases of BSE were detected in Spain in November 2000, leading to a significant decrease in beef consumption and a crisis in the sector. Between 1995 and 2000, the consumption of Spanish beef dropped by 2.8% both at home and abroad (MAPA, 2001), and between January and September 2001,

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when the crisis was at its height, consumption dropped by 1.3 kg *per capita* compared to 2000 (Cruz, 2002).

Consumer behaviour studies tend to differentiate between a number of stages in the decision-making process (the moment the need arises, the search for and evaluation of information, the final decision to buy, and post-purchase behaviour) and between the internal or external factors that affect decision-making (Steenkamp, 1997).

Multi-attribute models are commonly used to analyse consumer quality judgements. These models consider quality as a multidimensional phenomenon and describe it as a set of attributes that must be perceived by the consumer. Thus, this understanding of quality does not necessarily depend on the objective characteristics of the product, but rather takes into account the quality of the product as perceived by the consumer. Consumers build up a concept of total quality by weighing up the different attributes they perceive. The concept of food quality thus differs from one person to another. Therefore, as Issanchou (1996) points out, it is a relative concept that does not refer to the inherent characteristics of a food; instead, it is linked to the concept of acceptability. The evaluation of food quality therefore depends on the perceptions, needs and goals of the consumer (Steenkamp, 1990).

A differentiation is usually made between *intrinsic* and *extrinsic attributes* (Grunert, 1997). The former refer to the physical characteristics of the product, whereas extrinsic attributes include factors such as the brand name, the appearance of the establishment where it is sold, and the origin of the product, etc.

Given that foods are «experience goods» in the sense that most of their characteristics cannot be evaluated until after they have been bought, consumers must use quality cues to make their purchasing decisions. Therefore, quality cues portray a wider concept than attributes. Steenkamp (1997) defines *quality cues* as any type of stimulus that afford information about a product that can be verified by the consumer through the senses prior to consumption. These cues are divided into *intrinsic cues*, referring to physical characteristics (colour and texture etc.) and *extrinsic cues*, which refer to everything else (brand name, packaging, point of sale, etc.). These cues can affect the perception of other attributes. Thus, intrinsic cues such as product colour, the presence of fat, and freshness etc. are normally used as cues of the intrinsic quality of a product while extrinsic cues (brand, establishment, packaging, etc.)

are used as cues of both intrinsic and extrinsic quality (Bello Acebrón and Gómez Arias, 1996). These cues play a very important role in the formation of perceptions within the consumer decision-making process and, more specifically, in the evaluation of the product. In this phase, the consumer forms an attitude towards a product based on the integration of perceptions or beliefs. Attitude is understood to mean an individual's feeling towards a characteristic or object that predisposes him/her towards an action (Steenkamp, 1990). Attitude is usually considered to be comprised of three components: a *cognoscitive* component that refers to the beliefs, associations or links that a person establishes between the object and several attributes (the focus this work), an *emotional* component that consists of feelings, moods and emotions, and a *behavioural* component that consists of the actions the consumer undertakes (Vázquez Casielles *et al.*, 2002). It is assumed that a consumer's attitudes have an influence on his/her behaviour, and that there is a relationship between the evaluation made of a product and attitude. This relationship works in two directions (Alonso Rivas, 1999), i.e., attitude depends on the consumer's perceptions, but these perceptions are conditioned by the consumer's prior attitude (Vázquez Casielles *et al.*, 2002).

Studies have shown that consumers find it difficult to evaluate meat quality at the time of purchase (Grunert, 2001). According to this author, one of the most important cues of quality is the presence of fat. However, its relationship with taste and tenderness is just the opposite of what consumers think. The image offered by the point of sale (or the butcher) is also a very important quality cue when purchasing. This reveals consumer uncertainty and shows that people place trust in experts in order to form their own expectations regarding meat quality. Some intrinsic meat attributes, such as the breed of the animal, the feed it received, its age at slaughter and the method of slaughter, all help define meat quality, but in many cases this is not perceived by consumers, either because they are unaware that these factors are important or because this information is not made available to them (Bello Acebrón and Calvo Dopico, 1998).

Bello Acebrón and Calvo Dopico (1998) proposed a beef purchasing model in which the quality cues that seemed the most important at the moment of purchase were the presence (or not) of a label with a designation of origin, the type of meat (e.g., PGI - Protected

Geographical Indication meat such as *Ternera Gallega*, *Ternera Rosada*), the point of sale, and its price. Glitsch (2000) and Sánchez *et al.* (2000) indicate that price is one of the most important cues for consumers when evaluating the quality of meat, along with the place of purchase. Briz and De Felipe (2000) indicate that when purchasing beef, consumers place greatest importance on the colour of the meat and the place of purchase. Becker (2000) also indicates the place of purchase as one of the most important cues of extrinsic quality in the perception of the quality of fresh meat, along with the origin of the product.

Brand name is a special cue of the quality of foods since it allows consumers to make use of their previous experience (Grunert, 2001). When products are sold without a brand name, which is generally the case with meat, the presence of a quality or designation label allows consumers to infer experience and credence attributes (attributes that cannot be verified even though the meat is consumed). Some experiments confirm the potential advantages of quality labelling (Verbeke and Viaene, 1999). However, there has been a great proliferation of quality labels and designations of origin, etc., and not all of them have enjoyed the same success (Grunert, 2001). On many occasions consumers ignore quality designations or labels due to a lack of information or awareness. In a study performed in Belgium, Verbeke and Viaene (1999) observed that, although beef consumers try to familiarise themselves with quality labels, they cannot recall the names or characteristics mentioned on these labels.

Quality labels or quality designations can be used to transmit important information to consumers (Sánchez *et al.*, 2001a). A positive relationship has been reported between the presence of quality labels and a greater appreciation of aspects related to food safety (Sánchez *et al.*, 2001b). Therefore, quality labelling could provide an important means of improving the process by which consumers form expectations about the quality of meat. However, some authors have underlined that the excessive use of labelling based on country or region of origin etc. may erode the value that consumers place on them (Henson, 2000).

In recent years there has been a proliferation of quality designations and labels in the agro-food sector, in general as a result of voluntary quality policies promoted by the European Union and its different member states (especially those in the Mediterranean

area), and by private initiatives. In Spain there has been a considerable increase in the number of PGIs for fresh meat, especially for beef. In 1992 there were only three, but by 2000 there were 12, eight of which were for beef (MAPA, 2001). This increase was particularly notable between 1999 and 2000, when five beef PGIs were created. In relation to the figures for 1999, this led to a 48.4% increase in marketed PGI meat, and an increase of some 29% in monetary terms (Cruz, 2001).

The main aim of the present study was to determine the perceived quality and attitudes of consumers towards specific quality beef [SQB; beef with quality specifications as indicated by labels or public quality denominations (Gómez Muñoz and Caldentey Albert, 1998)] in Zaragoza (Aragón, Spain), by establishing consumer groups based on sociodemographic characteristics, purchasing habits, level of consumption, and extent of knowledge of beef with quality designations or quality labels.

Material and Methods

The information used for this study was collected through a survey of people responsible for household meat purchases in the city of Zaragoza (Aragón, Spain). Between February and March 2001, 306 personal interviews were undertaken at different points of sale (sampling error 5.7%). The questionnaires were distributed in 10 census districts among retailers (butchers, supermarkets, hypermarkets) according to their market share (MAPA, 1999). Information was gathered on the repercussion of BSE on beef consumption and the importance of beef quality attributes and cues. The survey also collected information on the degree of consumer knowledge of SQB, and attitudes towards this type of meat. The degree of spontaneous knowledge (i.e., the level of recollection when no reference was made to SQB products) and prompted knowledge (knowledge when PGI *Ternera Gallega*, PGI *Ternera de Avila*, or the «C» quality label, «CLARA programme» was mentioned to them) was measured. Likert scales were used to quantify the importance of beef quality attributes and cues and attitudes towards SQB (1= strongly disagree with statement made; 5= strongly agree with statement made). Frequency distribution analysis was used to obtain an initial description of the consumer population. Principal components analysis (PCA) and cluster

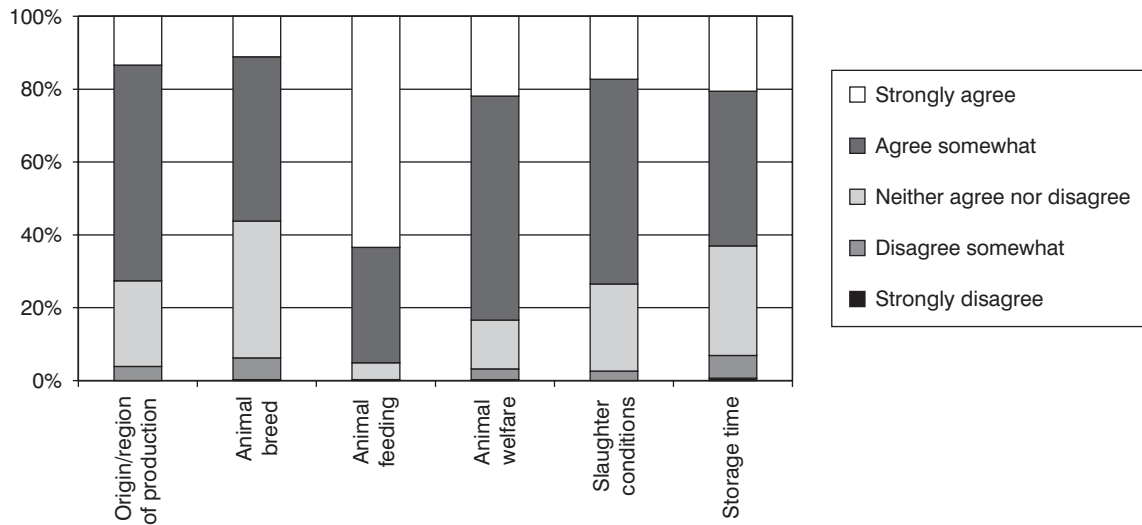


Figure 1. Importance of beef quality attributes.

analysis (K-means method) were used to classify consumers in terms of perception and attitudes towards SQB. Contingency tables and chi-squared analysis were used to determine the sociodemographic and other differences between these groups. All calculations were performed with SPSS v. 10.0 software.

Results

The influence of the BSE crisis

The first cases of BSE in Spanish cows appeared during the data collection period (although not in the Zaragoza area). Some 19% of the interviewees stopped buying beef because of this. The incidence of the crisis was very patent: 52% of consumers indicated that the crisis had affected their purchasing habits, 65% had reduced their beef consumption, and 52% consumed a greater quantity of other types of meat or fish. Neither did the situation greatly encourage consumers to switch to SQB: only 4.4% of consumers began to purchase this type of meat, and just 3.8% bought it alone.

Importance of beef quality attributes and quality cues

Consumers were asked to indicate the importance of beef quality attributes according to their degree of

agreement with a number of statements. The animal feeding regime was considered to be the most important quality attribute; 95% of the sample stated that this was important for obtaining quality beef (Fig. 1). In addition, the characteristics of the beef production system, such as environmentally friendly production methods and the origin or production area, were considered important.

Appropriate slaughter conditions were also considered important by consumers, and a short storage time was believed very important for obtaining meat of higher quality. This latter result shows a lack of knowledge of consumers concerning the conditions required for maturing meat between slaughter and sale. In relation to animal breed it was found that 37.5% of consumers had no opinion on whether this affected meat quality.

The place of purchase, and particularly the information provided by the butcher, were considered the most important quality cues by those interviewed (Fig. 2). The presence of a quality designation or quality label was also considered a cue by 76% of consumers (who somewhat/strongly agreed that this was the case). The price of meat was also considered a quality indicator, although behind the presence of a quality designation or quality label. Sixty two per cent of consumers considered over-the-counter beef to be of a higher quality than pre-packed beef; only 6% thought the latter to be of higher quality.

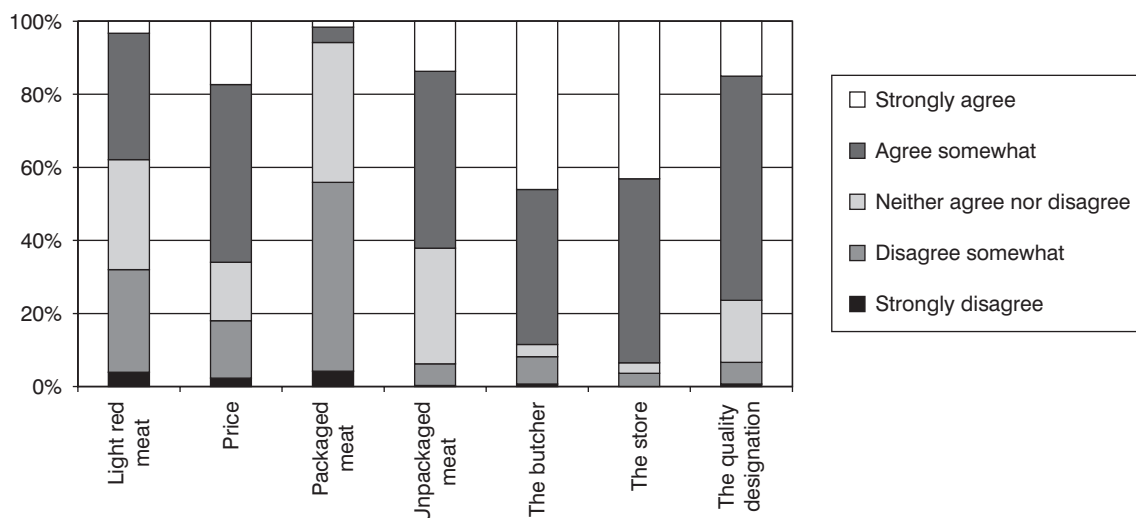


Figure 2. Importance of beef quality cues.

Some 38% of consumers associated light red meat with higher quality, although a high percentage (30%) had no opinion, underlining a widespread lack of knowledge on this subject.

Awareness of SQB

Some 64% of consumers indicated that they were aware of and remembered a number of quality designations. The SQBs most commonly recalled by the respondents were the PGI *Ternera Gallega* and the quality designation *Vacuno C de Calidad* promoted by the Regional Government of Aragón. The CLARA programme and the PGI *Carne de Ávila* were recalled by a smaller proportion of consumers. Some regional quality labels such as *Ternera del Valle de Broto*, *Pirinera* and *Fribin* were mentioned on some occasions.

Forty six per cent of the respondents stated that they were regular consumers of SQB, while 38% consumed this meat occasionally and 16% had never bought it. Among regular and occasional consumers of beef with a quality designation, 31% said that they always bought this type of meat, and 20% stated that it accounted for between 25% and 50% of the total amount of beef they bought. However, these figures should only be considered as trend indicators since they may be overestimations.

With regards to the level of consumers' «prompted knowledge» of SQB, PGI *Ternera Gallega* was the

best-known designation (approximately 86% of consumers had heard of it) (Fig. 3). There was also a high percentage of consumers who were aware of the quality label promoted by the Government of Aragón (around 75%); 65% of consumers had heard of the CLARA programme and 54% of the PGI *Carne de Ávila*. However, the quality labels belonging to distribution chains were not well known.

The most important source of information on SQB was the butcher; 70% of consumers considered this cue to be important or very important. Other possible sources of information such as friends or relations were much less important; 80% of the respondents assigned no importance to these sources. Promotions and media advertisements were considered important sources of information by 36% and 33% of consumers respectively.

Amongst the interviewees who did not regularly purchase beef with a quality designation, 38% affirmed

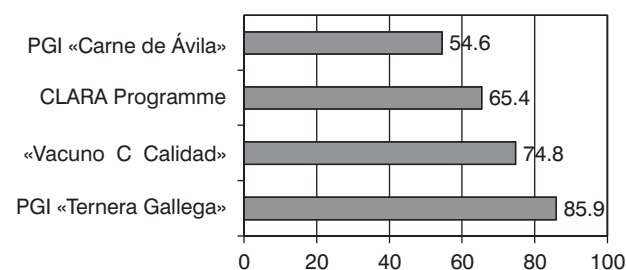


Figure 3. Prompted awareness of SQBs (%).

Table 1. Reasons for not purchasing SQB (%).

	%
Higher price	38.0
Difficult to find	23.0
Not available in the store	27.0
Not knowing about it	16.0
Thought to be no different from other beef	11.0
Other	34.0

that this was because of its high price, 27% because it was not available in the store where they usually shopped, and 23% because it was difficult to find (Table 1). Other reasons were the lack of attention to brand names and the trust people placed in their butcher (34% of consumers).

A lower price (49% of consumers), better guarantees (40%) and more information (31%) were regarded as factors that would induce respondents to buy this type of meat.

Classification of consumers

Consumers were classified in terms of their perception of and attitudes towards SQB. PCA was performed on variables referring to consumer beliefs and associations (cognoscitive component) with respect to these products. This reduced the number of original variables by identifying those that were correlated. Three factors (explaining 70% of the variance) with Eigenvalues of > 1 were retained for

further analysis. The first (which accounted for 34.7% of the variance) reflected the safety conditions of beef for human consumption (Table 2). This strongly correlated with variables related to the belief that SQB is free of residues (hormones/antibiotics) and disease-causing agents. The second (which explained 19.4% of the variance) was related to the intrinsic quality attributes of beef, and identified consumers who considered SQB to taste better and to be more tender. The third factor (which explained 15.5% of the variance) referred to the extrinsic quality attributes of beef and to credence attributes. This identified consumers who considered this type of meat to be more expensive, but to have a better appearance and to offer more guarantee in general.

Cluster analysis (K-means) was then performed using the co-ordinates of the observations for these first three PCA factors, and three groups of consumer were obtained.

Group 1. Consumers with an unfavourable attitude towards SQB. This group represented 35% of the sample (Table 3). These consumers were mainly characterised by a negative attitude towards this type of meat (Fig. 4). This group attached the lowest value to the organoleptic characteristics of these products and their safety for human consumption.

Group 2. Consumers with a favourable attitude towards SQB but not with respect to its safety for human consumption. This group, formed by 36% of the interviewed consumers, most valued this type of meat in terms of its organoleptic characteristics. They did not, however, perceive SQB as «safer» meat. These consumers placed higher value on meat being

Table 2. Contribution of different variables to the first three factors obtained in PCA

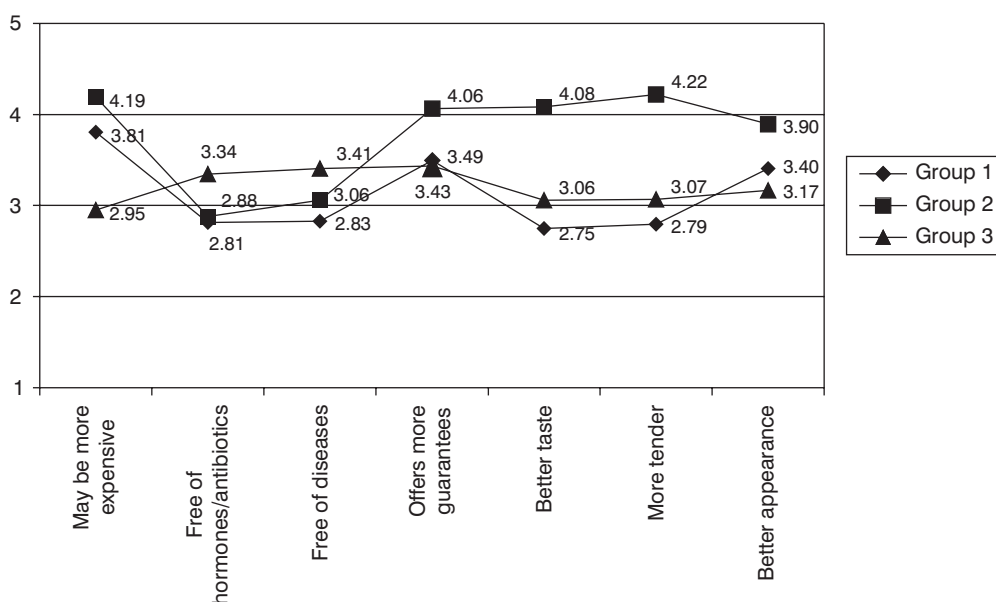
	Factor 1 Meat safety	Factor 2 Intrinsic quality attributes	Factor 3 Extrinsic quality attributes
Free of disease-causing agents	0.876	0.130	0.143
Free of hormones /antibiotics	0.869	—	—
Better taste	0.127	0.906	—
More tender	0.263	0.892	0.153
May be more expensive	-0.263	—	0.793
Better appearance	0.255	—	0.659
Offers more guarantees	0.337	0.331	0.470
% of variance	34.7	19.4	15.5

Varimax rotation; KMO is 0.612; Barlett test: 480.193; Significance: 0.000.

Table 3. Consumer group profiles

	Group 1	Group2	Group3	Total
Number of consumers	107	110	89	306
% of consumers	35	36	29	100
May be more expensive	3.81	4.19	2.95	3.83
Free of hormones/antibiotics	2.81	2.88	3.34	3.16
Free of disease-causing agents	2.83	3.06	3.41	3.25
Offers more guarantees	3.49	4.06	3.43	3.84
Better taste	2.75	4.08	3.06	3.46
More tender	2.79	4.22	3.07	3.53
Better appearance	3.40	3.90	3.17	3.66

Average indicator values for the groups (1 = Strongly disagree; 2 = Disagree somewhat; 3 = Neither agree nor disagree; 4 = Agree somewhat; 5 = Strongly agree).

**Figure 4.** Profile of consumer groups.

more tender and tastier than on it being free of hormones/antibiotics and disease-causing agents.

Group 3. Consumers with a favourable attitude towards the safety of SQB for human consumption. This was the smallest group (represented by 29% of the sample), and was formed by those consumers who placed the greatest importance on the absence of residues and disease-causing agents. They also valued the organoleptic characteristics of SQB, but to a lesser extent than the previous group. This group, however, were also the most critical of its price, believing that these products should not be more expensive.

Socioeconomic characteristics of the consumer groups

Chi squared analysis detected no significant differences between the three consumer groups in terms of age or family composition. However, approximately 20% of consumers in group 3 (who had more positive attitudes towards SQB) had a very high income (≥ 901 €/person/month) (Table 4). In group 1 (consumers with the least positive attitude towards this type of meat) there was a high percentage of people (36.2%) who had a very low income (< 300.5 €/person/month). Group 2

Table 4. Socioeconomic characteristics of the consumer groups (%)

	Group 1	Group 2	Group 3	Total
% of consumers	35	36	29	100
Income / person and month (€) ¹				
≤ 300.5	36.2	25	23.3	28.5
> 300.5, < 601	29.5	33.7	36	32.9
≥ 601, < 901	21.9	32.7	20.9	25.4
≥ 901	12.4	8.7	19.8	13.2
Education level ²				
No academic qualifications	4.7	0.0	1.1	2.0
Primary education	41.1	41.8	30.3	38.2
Secondary education	34.6	35.5	39.3	36.3
University degree	19.6	22.7	29.2	23.5

¹ P = 0.063; ² P = 0.094.

was comprised of consumers with average or high incomes (intermediate strata).

The members of group 3 had a higher mean level of education; 29.2% had a university degree. In group 1, however, only 19.6% of people had such a qualification. In groups 1 and 2 approximately 42% had primary education only. Group 1 contained most consumers without any academic education.

Effect of the BSE crisis and the degree of awareness and consumption of SQB

Group 2 had a high percentage (26.4%) of consumers who had stopped purchasing beef at the time of data collection because of the BSE crisis (Table 5). In group 3 (whose members had the most positive attitude towards SQB) only 9% had stopped buying beef. For the population as a whole, 19% had stopped buying beef.

Group 3 showed the highest percentage of spontaneous awareness of SQB. Some 77.5% recalled

beef quality designations or quality labels (Table 6). Group 1 showed the lowest percentage of consumers who could recall any type of SQB (48.6%). This was the group with the lowest percentage of consumers who regularly purchased SQB; 64% of group 3 members regularly purchased beef with a quality designation or quality label.

Groups 2 and 3 had the highest proportion of consumers who were aware (when prompted) of quality designations. Thus, 84.3% of consumers in group 3 knew the *Vacuno C de Calidad* designation, and approximately 50% were aware of the «CLARA» programme. In group 2, 80% knew the former but only 33% were aware of the latter.

Sources of information and reasons for purchasing SQB

The butcher was the most important source of information on SQB for all three groups of consumers

Table 5. Effect of the BSE crisis on the different consumer groups (%)

	Group 1	Group 2	Group 3	Total
Had not stopped purchasing beef	80.4	73.6	91.0	81.0
Had stopped purchasing beef	19.6	26.4	9.0	19.0

P = 0.000.

Table 6. Awareness and consumption of SQB in the different consumer groups (%)

	Group 1	Group 2	Group 3	Total
% of consumers	35	36	29	100
Able to recall a type of SQB	48.6	68.2	77.5	64.1
Buyer of SQB				
No	73.8	49.1	36	53.9
Yes	26.2	50.9	64	46.1
Aware of these beef quality labels				
«Vacuno C de calidad»	61.7	80	84.3	74.8
«Clara» Programme	24.3	32.7	49.4	34.6

P = 0.000.

(Table 7). Friends and relations and even promotions were considered much less important. Group 1 differentiated least between the different methods of acquiring information on SQB, while groups 2 and 3 showed placed the greatest importance on their butcher.

The reasons of the different consumer groups for not buying SQB were also analysed. In group 2, 42.6% of

the consumers showed that SQB was difficult to find. Group 3 members highlighted that they paid little attention to labels, preferring to place their trust in the butcher when purchasing their beef. No significant differences were found between the groups in terms of reasons that might encourage greater consumption of SQB.

Table 7. Importance of sources of information and reasons for not purchasing SQB (%)

	Group 1	Group 2	Group 3	Total
Importance of sources of information				
Friends / family ¹				
Not important	86	77.3	75.3	79.7
Important	12	17.3	24.7	17.6
Very important	1.9	5.5	0	2.6
Butcher ²				
Not important	46.7	22.7	21.3	30.7
Important	43	57.3	56.2	52
Very important	10.3	20	22.5	17.3
Promotions ²				
Not important	77.6	55.5	58.4	64.1
Important	20.6	40.9	34.8	32
Very important	1.9	3.6	6.7	3.9
Reasons for not purchasing SQB				
High price	33.3	48.1	31.3	37.8
Difficult to find	11.5	42.6	18.8	23.2
Other	35.9	22.2	50	34.1

¹ P = 0.025; ² P = 0.000.

Discussion

The results show that the animal feeding regime is thought to be one of the most important quality attributes of beef. This agrees with the results of other empirical studies (Cowan, 1998; Henson and Northern, 1999; Glitsch, 2000; Bernués *et al.*, 2003). A large percentage of consumers had no opinion as to whether the breed of the animal affected the quality of the meat, despite the fact that quality differences due to breed certainly exist (Piedrafita *et al.*, 2003). These results confirm that some intrinsic meat quality attributes are not perceived by consumers because they are not known. The same is indicated by Bello Acebrón and Calvo Dopico (1998).

With regard to beef quality cues, apart from butcher information and the store where the meat was sold, price appeared to be an indicator of quality, as mentioned in other studies (Glitsch, 2000; Sánchez *et al.*, 2000). The presence of a quality designation or label was also considered a quality cue. The relationship between the presence of a designation and greater quality expectations has been reported in previous studies (Bello Acebrón and Calvo Dopico, 1998).

The quality designation promoted by the Government of Aragón was less known than the PGI *Ternera Gallega*, contrary to that seen in other regions of Spain. Akl (2000), in a study performed in Pamplona and San Sebastián, observed that the *Ternera Navarra* and *Ternera Label Vasco* designations were the best known. The PGI *Ternera Gallega* was also quite well known, as was the CLARA Programme (to a lesser extent).

The proportion of consumers with positive attitudes towards SQB (group 3) was small. Group 2 consumers appreciated the organoleptic characteristics of SQB, but did not trust the safety guarantees offered. The butcher was considered the main source of information on the quality of this type of products - and as a far more reliable source than any promotion campaign. The role of the butcher should be further explored for improving communication between industry and consumers. Promotional campaigns might be better directed towards the safety characteristics of SQB.

With respect to level of income and degree of consumption of SQB, the same trend was seen as in other studies (Sánchez *et al.*, 2000): greater consumption of SQB was seen among those with higher incomes.

With respect to the influence of the BSE crisis, group 2 was that with the highest percentage of consumers who stopped eating beef. In group 3 - those who ate most SQB - the percentage was much lower. This seems to indicate that consumer groups with more positive attitudes towards the safety guarantees offered by SQB, and who consume them most, reduced their consumption the least. Barrena *et al.* (2003) indicate that in regions with a greater presence of certified beef there was a smaller reduction in consumption during the BSE crisis.

The results show that the animal feeding regime, and other characteristics related to the production system are the most important quality attributes of beef meat for consumers. The breed of animal is not perceived as a quality attribute by a large percentage of people. However, consumers do not normally have access to this type of information. The butcher, the store, the price and the presence of a quality designation or quality label are considered to be the most important quality cues.

The most favourable attitudes towards SQB was seen among those with the greatest awareness and highest level of consumption of these products. Those with more negative attitudes were those who were less aware of these products and who bought them less often. This pattern shows normal, rational behaviour: a positive attitude towards a product leads to one choosing it.

Consumers with higher levels of education and higher incomes are those with a more favourable attitude towards SQB. Consumers groups with more negative attitudes are more likely to have a lower level of income and a lower percentage of persons with higher education. Attitudes towards quality designations or labels therefore clearly differ between consumers; those who are more receptive towards them generally have a higher socioeconomic status.

Differences were seen in the effect of the BSE crisis on the different consumer groups. Among consumers with a more positive attitude towards SQB, fewer stopped consuming beef. This, plus the fact that these showed with the highest level of SQB consumption, indicates that the presence of a quality designation is a cue of food safety, but only amongst consumers with previous experience. However, as Grunert (2001) points out, consumers' appraisal of food safety can change during a food crisis. It would, therefore, be advisable to analyse the perception of beef safety at a time when attitudes are not influenced by a crisis.

This study shows the need for a deeper analysis of the sociodemographic characteristics of different groups of consumers and their perception of beef with quality designations or quality labels. Further studies are also needed on the quality features that should be included on labels, and on strategies of communication with consumers for reassuring them about meat safety.

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