

# SPANISH CONSUMERS' BEEF CHOICE DEPENDING ON COUNTRY OF ORIGIN, FINISHING DIET AND PRICE BY CONJOINT ANALYSIS

C.E. Realini<sup>1\*</sup>, M. Font i Furnols<sup>1</sup>, C. Sañudo<sup>2</sup>, F. Montossi<sup>3</sup>, M.A. Oliver<sup>1</sup>, and L. Guerrero<sup>1</sup>

<sup>1</sup>IRTA. Monells, Finca Camps i Armet E-17121 Monells (Girona), Spain. <sup>2</sup>University of Zaragoza, Miguel Servet 177, 50013 Zaragoza, Spain. <sup>3</sup>INIA. Tacuarembó, Ruta 5 km 386 C.P.45000 Tacuarembó, Uruguay.

[carolina.realini@irta.es](mailto:carolina.realini@irta.es)

**Keywords:** beef, price, origin, consumer, conjoint

## Introduction

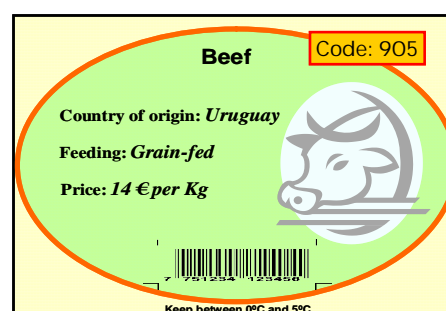
Uruguay is currently focused on becoming more competitive in the world beef market through increasing beef production and quality according to market needs with concentrated efforts in high value markets. It is important to understand consumer preferences in targeted export markets for the different attributes of beef to develop new marketing or branding strategies to increase consumer demand. Umberger *et al.* (2002) highlighted that country-of-origin labelling as well as niche marketing may need to be considered to provide consumers with a consistent beef product that meets their palatability expectations. In the SW of Spain, Mesías *et al.* (2005) evaluated consumers' preferences for beef indicating that origin of the product is the most important attribute for the choice of beef, followed by quality of labelling, production system and price. The aim of this research was to evaluate the contributions of country of origin, animal feeding, and price in Spanish consumers' fresh beef purchasing decisions, and to identify consumer segments with common preferences using conjoint analysis.

## Materials and Methods

Respondents (n=100) were recruited from a database of beef consumers who have participated in previous sensory studies representative in gender and age of the Spanish population. Conjoint analysis was used to determine the relative importance of various attributes in purchasing decisions of fresh beef. The three attributes evaluated in this study (country of origin, animal feed, price) were chosen because of their importance in consumer purchasing decisions in Spain (Mesías *et al.* 2005). Selected attributes and levels in this study are listed in Table 1. The total number of possible product scenarios from the various attributes and attribute levels was 36 (4x3x3). The conjoint module of SPSS (SPSS v. 12) was used to reduce the number of profiles to be assessed by the respondents. Fifteen profiles were generated using an orthogonal fractional factorial design, and presented to participants as cards (Figure 1) in a randomized order. Each participant ranked the cards according to the probability to purchase fresh beef with those characteristics from 1 most likely to purchase or the first that you would buy to 15 least likely to purchase or the last that you would buy. Conjoint data analysis was carried out using the TRANSREG procedure of SAS (SAS Inst. Inc., Cary, NC). Cluster analysis was undertaken using the CLUSTER procedure of SAS on the conjoint data to identify groups of respondents with common importance of attributes and utilities for each attribute level.

**Table 1:** Attributes and levels for fresh beef

Attributes	Levels
Country of Origin	Uruguay (UY)
	Argentina (AR)
	Spain (ES)
	Switzerland (SW)
Animal Feeding	Grass
	Grass and Grain
	Grain
Beef Price	13 €/kg
	16 €/kg
	18 €/kg

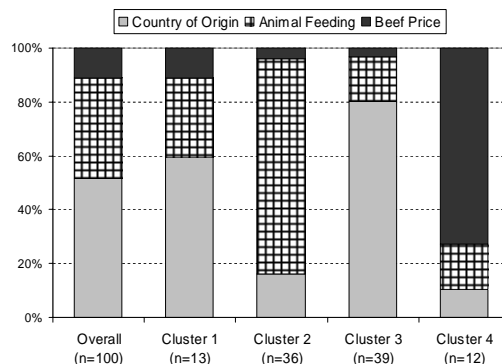


**Figure 1:** Profile sample card evaluated by respondents

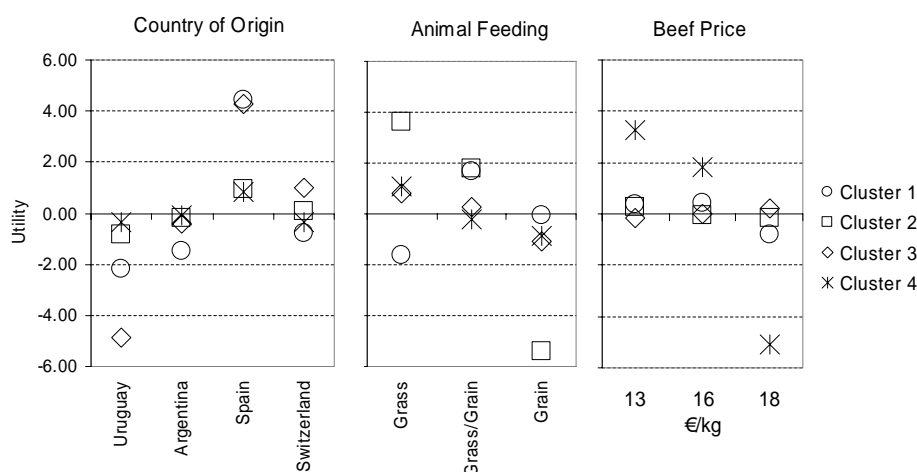
## Results and Discussion

The relative importance of each attribute is presented for all respondents and for four clusters in Figure 2. Overall, country of origin was the most important factor for the choice of beef, followed by animal feeding, with price being the least important attribute. Results from cluster analysis showed that cluster 1 ranked country of origin, animal feeding and beef price similar to the overall sample. Cluster 3 (largest) gave less importance to animal feeding and price compared to all respondents with country of origin being the most important attribute. In cluster 2 (second largest), the main attribute was animal feeding with less importance given to country of origin followed by beef price when purchasing beef. Finally, the main attribute determining purchase decisions

in cluster 4 was price. Animal feeding and country of origin were less important for this consumer segment. Figure 3 shows the utilities for each level of the attributes by clusters. Clusters 1 and 3 showed high importance in country of origin and a clear preference for beef from ES, followed by SW, AR, and UY which was the least preferred origin. Clusters 2 and 4 showed low importance in country of origin with preference for beef produced locally. Utilities for each level of animal feeding were high and different for clusters 1 and 2, while utilities were low and similar for clusters 3 and 4. Cluster 2 showed high and positive utility for grass-feeding and high and negative utility for grain-feeding with grass/grain feeding being intermediate and positive. Respondents in cluster 1 preferred beef from animals fed a mixture of grass and grain over grass-fed animals with intermediate preference for beef from grain-fed cattle. Grass feeding utilities were positive and grain feeding negative for clusters 3 and 4. Utilities for clusters 1, 2 and 3 were low and similar for all price levels. Cluster 4 makes their beef purchasing decisions based on price, with positive utilities for lower cost of beef and negative utility for a higher priced product.



**Figure 2:** Relative importance of each attribute for all consumers and clusters.



**Figure 3:** Utilities for each level of the attributes by clusters.

## Conclusions

Overall, the most important attribute determining the preferences of the respondents was the origin of the product, followed by animal feeding and beef price. Four groups were identified, cluster 1 and 3 gave greater importance to country of origin and very little to product price. Cluster 2 made its beef purchasing decisions based primarily on animal feeding while cluster 4 is focused on product price. Segmentation results support the development of different marketing strategies to satisfy each segment of the market. Further data analyses will be conducted to assess the relationship between purchasing decisions and consumers' demographic and behavioral characteristics.

## References

1. Mesías, F.J., Escribano, M., Rodríguez de Ledesma, A., and Pulido, F. (2005). Consumer's preferences for beef in the Spanish region of Extremadura: a study using conjoint analysis. *Journal of the Science of Food and Agriculture*, 85, 2487-2494.
2. Umberger, W.J., Feuz, D.M., Calkins, C.R., and Killinger-Mann, K. (2002). U.S. consumer preference and willingness-to-pay for domestic corn-fed versus international grass-fed beef measured through an experimental auction. *Agribusiness*, 18(4), 491-504.