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International Perspectives

What is meat in Uruguay?

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Implications

- The Uruguayan National Meat Institute (INAC) defined meat as: "edible portion of animals declared fit for human feeding by veterinary inspection and comprising the tissue muscles and soft tissues surrounding the skeleton after slaughter operation is completed" (INAC, 2002). This definition is applied along the meat industry and also by the human health institutions (Ministry of Public Health and Human Health and Nutrition Departments of the University of the Republic).
- Beyond this concept, for Uruguay as an export country, meat means confidence in terms of food safety, animal welfare, and environmentally friendly production systems. From the plate to the farm, Uruguay joins research, technologies, and production systems to guarantee consumers traceability, safety, nutritive value, and quality of its products. Feeding animals with pastures and avoiding by law the inclusion of hormones, antibiotics, or animal by-product feedstuffs generates an advantage for Uruguay, putting it in front of the new trends in consumer demand.

Key words: consumers, health, identity, meat, socio-cultural aspects

Historically, livestock and meat production have been tightly related to the Uruguayan territory. Cattle and horses were introduced to what is now Uruguay in 1611 by Hernandarias even before European settlers landed. In its beginnings, livestock grazed lands freely, and hides were the first national export product. Later, the production of tallow, horns, and meat with the development of salted meat establishments represented the main export products.

Several laws and regulations have driven livestock production in Uruguay to become its most important economic activity since Spaniards settled in. The Land Concession Royal Act (1728), Free Trade Rules (1778), Land Distribution Rules (1815), the First Agricultural Census (1815), the creation of the Farmers Association of Uruguay (1871) and the Ministry of Promotion (1891), the National Meat Institute (INAC in Spanish; 1967), the Administrative Commission for Meat Supply (1969), the Livestock Comptroller´s Directorate (DICOSE in Spanish; 1973), and the Electronic Information System for the Meat Industry (SEIIC in Spanish; 2007) represented milestones in the Uruguayan livestock and meat production development (Lewowicz, 2016).

Various regulatory bodies follow either a specific definition (muscular animal body part) or other more generic definitions (meat edible beef, veal, pork, etc., which is sold to supply common village) (Diccionario de la Real Academia de la Lengua Española, 2014). The more specific definition of meat tends to focus exclusively on the muscle of the carcasses of animals for slaughter or hunting. Fish are usually not considered into this specific concept of meat. In addition, the specific meaning of meat excludes meat that has been subjected to technological treatments beyond the reduction of size, cooling, freezing, and packaging. On the other hand, the generic concept includes muscle and may include without limitation to the rest of the edible parts of animals for slaughter: blood, entrails, fat, skin, etc. This meaning also includes both fresh meat and meat that has been processed in households or industries: cooked, dried, and freeze-dried.

The Uruguayan definitions are addressed to the generic concept. The Uruguayan National Meat Institute (**INAC**), whose objective is to promote, regulate, coordinate, and monitor the activities of production, processing, marketing, storage, and transport of different meats (bovine, ovine, equine, swine, goats, poultry, rabbits and animal hunting), giblets, by-products, and meat products, has defined meat as:

> "*edible portion of animals declared fit for human feeding by veterinary inspection, and comprising the tissue muscles and soft tissues surrounding the skeleton after slaughter operation is completed*" (INAC, 2002).

On the other hand, the Official Regulation of Veterinary Inspection for Products of Animal Origin from the Ministry of Livestock, Agriculture, and Fisheries has defined meat as "the edible muscular part of slaughtered cattle, consisting of all the soft tissues surrounding the skeleton, including its covering, fat, tendons, vessels, nerves, aponeuroses, and all those tissues not separated during the slaughter operation. In addition, the diaphragm is considered meat, but not the heart, the esophagus, and the tongue" (Ministerio de Agricultura y Pesca, 1983).The School of Human Nutrition of the University of the Republic (Uruguay) uses the definition of meat according to Ministerio de Agricultura y Pesca (1983) and applied in the National Bromatological Regulations (Decreto 315/994, MSP, 1994).

Nevertheless, for Uruguay, meat is more than that. Meat means confidence in terms of food safety, nutritional value, animal welfare, and environmentally friendly production systems based mainly on grasslands. Uruguay supports the strategy of aligning production systems, practices,

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and technologies to target the preference of different segments of consumers and gain their confidence in different niche markets (Montossi et al., 2013). In that sense, Uruguay considers that generating its own scientific and technological information, as well as promoting education, training, and innovation processes along the meat industry, are key points not only to provide a high quality and safe meat, but also to project an animal welfare friendly and environmentally responsible image to improve the international market positioning (Del Campo et al., 2014). Research priorities for meat in Uruguay are focused on safety and healthiness, assuming that production systems have to be ethical from animal welfare and environmental issues, which are critical to maintaining a competitive position in the marketplace (Del Campo, 2016).

Uruguay has one of the highest, if not the highest, meat consumption in the world, attaining 98.7 kg of meat/capita in 2015. From the total meat consumption, 57.6 kg corresponded to beef, 20.4 kg to poultry, 16.9 kg to pork, and 3.8 to lamb (INAC, 2015). Poultry meat consumption has increased the most in the last 20 yr. Several factors explain this behavior such as price, convenience, health concerns, growing of exporting markets for beef, etc. In addition, it is important to note that Uruguay currently exports 70% of its beef production mainly to Europe, North America, and Asian markets (Lanfranco and Rava, 2014a).

A traditional Uruguayan Chivito sandwich with sliced steak, ham, cheese, eggs, and mayonnaise (source: © 2006 Matt Rubens www.wikimedia.org).

Undoubtedly, socio-cultural factors play a key role defining Uruguayans as carnivores. It seems to be a "meat paradox" because people simultaneously dislike hurting animals and like eating meat, but Uruguayan consumers appear to suppress or minimize their moral concern for animals (Loughnan et al., 2010). Meat as a "source of pleasure and nutrition" is not tied to elements that allow consumers to associate meat to slaughter of animals (da Silva Gomes Ribeiro and Corção, 2013). However, the Uruguayan Meat Industry guarantees ethical husbandry procedures through its own recommendations and legislation.

In recent years, meat consumption has been pointed out as a possible risk factor in the development of different diseases such as cardiovascular disease and cancer, in particular colorectal cancer. In addition, livestock production has been blamed, at least in part, for the environmental contamination around the world. Even when health issues related to red meat consumption are of increased concern among Uruguayan consumers, the inclusion of animal protein seems to play an underlying role in their diet. Indeed, Holm and Möhl (2000) reported in his study that negative attitudes of consumers regarding meat were not necessarily associated with diminished meat consumption but were related to a tendency to redesign meals with special reference to the role assigned to meat, which is considered as one more ingredient alongside vegetables and cereals.

Even in the face of this unfavorable context regarding meat consumption, taste and nutritional value are two valuable quality attributes for most of consumers. Meat is considered an excellent source of high quality protein and important source of some micronutrients such as iron, selenium, vitamins A and B12, and folic acid (Biesalski, 2005; McNeill and Van Elswyk, 2012). Research conducted in Uruguay showed that grass-fed beef cattle produced greater iron and zinc concentration in meat than grain-fed animals (Cabrera and Saadoun, 2014). Meat also contributes to a low glycemic index due to its "low" carbohydrate content, which is considered "beneficial" in regard to overweight, cancer, and diabetes development ("insulin resistance hypothesis"). Therefore, meat is an essential component of a balanced diet, ensuring adequate delivery of essential micronutrients and amino acids, and it is involved in regulatory processes of energy metabolism (Biesalski, 2005).

In addition, recent research studies have focused on the nutritional importance of the omega 6: omega 3 fatty acid ratio for the human diet and on the content of conjugated linoleic acid (CLA) isomers because of their anticarcinogenic properties (Ip et al., 1994). Realini et al. (2004) and Brito et al. (2009) reported that Uruguayan grass-fed animals had higher concentrations of linolenic, eicosapentaenoic, docosapentaenoic, and arachidonic acids than grain-fed steers.

Lanfranco and Rava (2014b) estimated the demand for meats of Uruguayan households. In this study, all meat items evaluated were necessary goods and displayed income-inelastic responses, which was expected given their high consumption level. Inelastic responses imply small changes in consumption with large increases in price (Hursh, 1980). Lanfranco and Rava (2014b) reported that all meats behaved as normal goods although they exhibited different reactions to changes in price. The authors found that the more specific the meat product was, the higher its corresponding direct price elasticity, which refers the degree to which consumers change their demand in response to price change. This study confirms the relevance of meat for Uruguayan consumers, being considered an important element of its identity as a country.

Closing Remarks

Uruguayan meat definition is in line with that of the American Meat Science Association (**AMSA**), focusing on the edible part of a carcass according to the official veterinary inspection criteria. Meat production has played a relevant role in Uruguay´s economic and social development, being one of the world's top 10 beef-exporting countries. Meat is recognized as a valuable protein source for Uruguayan´s diet. In fact, Uruguay has one of the highest red meat consumption per capita in the world even though consumers are not oblivious about the possible health risk that red meat consumption might pose. Confidence in the meat industry has represented a mainstay supporting that high meat consumption. Meat production and its consumption will continue to be ingrained in the Uruguayan culture with increased consideration of the ethical requirements. Consumers' expectations, perceptions, beliefs, and values are key factors in determining the acceptability of meat. In relation to this trend, the Uruguayan meat industry has reinforced its strategies in producing and exporting "confidence" associated with production systems based mainly on grass-fed animals, indi-

vidual animal traceability, food safety, animal welfare, and implementation of certification processes (country of origin and brands).

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