

# PROCEEDINGS BOOK



3<sup>rd</sup>

INTERNATIONAL CONFERENCE ON  
**FOOD and AGRICULTURAL ECONOMICS**

25-26<sup>th</sup> April 2019

Alanya, TURKEY

ISBN: 978-605-81058-1-2

Harun Uçak (Ed.)  
Alanya Alaaddin Keykubat University

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**(Full Texts-Abstracts-Posters)**

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## ASSURING QUALITY IN THE BEEF PRODUCTION CHAIN

**Bruno A. Lanfranco**

Instituto Nacional de Investigación Agropecuaria (INIA), Applied Economics, Uruguay  
E-mail:blanfranco@ inia.org.uy

**Juan M. Soares de Lima**

INIA, Applied Economics, Uruguay

**Marcia del Campo**

INIA, Applied Economics, Uruguay

**Gustavo Toyo**

Instituto Nacional de Carnes (INAC), Uruguay

**Jorge Acosta**

Instituto Nacional de Carnes (INAC), Uruguay

### Abstract

Since 2002, and every four to six years, the National Institute of Agricultural Research (INIA) and the National Meat Institute (INAC) have been conducting the “meat quality audit” for the beef chain. The aim of the audits, since its inception, is to provide the meat chain with a significant set of indicators and measures regarding the quality of the cattle, as well as the beef all its sub-products, going through all the links of the chain, from the farm to the consumer. The final objective was to determine and quantify the main factors that could be responsible for the potential loss of value along the chain due to inefficiencies occurring at some critical points of the chain. Each audit is carried out in three parts: Phase I consists in a survey conducted across the meat chain, to get insights on how agents operating at different levels perceive the productive process and the different attributes that make the quality of the meat products in Uruguay. Phase II comprises on-site work at slaughter and packing operations, recording information potential efficiency and product quality problems that can be detected at this level, even when caused in the previous links of the meat chain. Phase III includes a final workshop with all the relevant agents and stakeholders for discussion of results of phases I and II, economic quantification of the problem either referred to direct and indirect losses as well as what is left on the table due to inefficiencies of the process. The objective of this article is comparing the evolution of the results of the three meat-quality audits performed for the Uruguayan beef chain (2003, 2008, and 2013). To make results comparable among audits, the figures were recalculated using the methodology applied in the last one (2013), assuming prices and the volume of the slaughter of that year. With regard to the agent’s perceptions, the evidence shows important differences in the meaning or idea behind the concept of quality, even within the same link of the chain. No unanimous appreciation exists about the attributes that make up the quality of the product, being very difficult from a single chain link to have a complete overview of the entire industry. Agents working at a certain link usually know better the previous (supplier) and the subsequent (client) links. In addition, agents tend to weigh with greater emphasis those attributes more closely related with their particular link and therefore directly affecting their own business. Thus, the concept of quality applicable to the meat industry must be defined before any further consideration about its status. Nevertheless, food safety was clearly the main concern of the agents in the meat industry. It is a basic requirement so that it does not enter the discussion about quality characteristics. Overall, traits and attributes related to consumer satisfaction was the most relevant issue. On the other hand, the most relevant sources of potential losses in the Uruguayan beef chain were the presence of bruises in cattle and beef cuts, high pH and dark cuts, inadequate vaccination procedures, damage in hides, liver condemnations, and excess of yellow fat. Nevertheless, the continuous work effort resulting from joint strategies agreed on phase III after each audit allowed a reduction in the economic losses caused by problems of quality. In 2003,

the amount of money left on the table derived from quality problems was USD 23.8 per slaughtered cattle head. This loss reduced to USD 16.2 by 2008 and further to USD 15.5 per cattle head in 2013. Beef exports is a business of some 1.5 billion USD for Uruguay. With an average slaughter of 2 million heads per year, it means that actual quality losses in the beef export chain represent only 2% of total export value.

**Keywords:** Economic Loss, Product Quality, Food Chain, Beef Industry.