Understanding consumers' perception of lamb meat using free word association

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ABSTRACT

The aims of the present study were to gather information about Brazilian consumers' perception of lamb meat and to study whether the perception is affected by the consumption frequency of this type of meat. A total of 1025 Brazilian consumers completed word association task with lamb meat. The elicited words were analyzed using inductive coding. Participants' associations with lamb meat were mainly related to *sensory characteristics* and *hedonic attitudes and feelings*, indicating that they might be the main motivations for consuming this product. Participants strongly associated lamb meat with special consumption occasions, which suggests that lack of perceived appropriateness for everyday consumption situations might be a barrier for increasing lamb meat consumption. Conceptualization of lamb meat was strongly affected by frequency of consumption of this product. Results from the present work provide a comprehensive insight on Brazilian consumers' perception of lamb meat, which can be used to develop strategies to increase its consumption and improve profitability.

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1. Introduction

Meat has a central role in Western food culture, being an important source of protein and other micronutrients, such as iron, selenium, vitamins A, B3, B12 and folic acid (Biesalski & Nohr, 2009; Fiddes, 1991). Although sheep meat represents only a small share of the total global meat production, sheep farming has economic and social relevance in sheep-meat producing countries (Ponnampalam, Holman, & Scollan, 2016).

Different sheep production systems are used worldwide, which offer different husbandry options that determine differences in the intrinsic and extrinsic characteristics of lamb meat (Sañudo et al., 2007). In the specific case of Brazil, lamb meat is mainly produced using pastoral production systems, made up by dual-purpose and specialized breeds for meat production in commercial herds (Ricardo et al., 2015). Brazil has approximately 17.3 million sheep, which has shown a growth rate of 15% over the last ten years (FAO, 2013). Despite its favorable climate and highly productive pasture, Brazil is still an importing country of lamb meat, mainly from Uruguay, Chile, Argentina and New Zealand (MAPA, 2015). For this reason, lamb meat production has great growth potential in the country (Ricardo et al., 2015). Lamb meat consumption in Brazil has increased from 0.55 kg/capita/year in 2003 to 0.62 kg/capita/year in 2013 (FAO, 2013). However, it is markedly lower than the other types of meat. Lamb meat is mainly commercialized frozen

but demand for chilled cuts of meat is increasing due to consumers' interest in convenience (Fernandes et al., 2012).

Despite the health benefits arising from the lamb meat, a better understanding of consumers' perception of the product can contribute to the development of strategies to increase its consumption by improving consumer perception of the product in terms of safety and quality (Font-i-Furnols & Guerrero, 2014; Troy & Kerry, 2010). In particular, differentiation of lamb meat through consumer-led development and market segmentation have been identified as relevant strategies to improve the profitability of the industry (Bernués, Olaizola, & Corcoran, 2003; Sepúlveda, Maza, & Mantecón, 2010).

Consumer perception of lamb meat, as any other food product, is complex and depends on several interrelated variables (Köster, 2003). Consumers' preferences, behavior and perception of lamb meat depend on the intrinsic and extrinsic characteristics of the meat, socio-economic, ethical, religious and psychological characteristics of the consumers, as well as on contextual aspects (Font-i-Furnols & Guerrero, 2014).

Although several studies have been carried out to understand consumers' perception of meat, few studies have focused their attention on lamb meat. Lamb meat has several characteristics that clearly differentiate it from other types of meat, including characteristic flavor, being more expensive and having limited possibilities for processing and transformation (Bernués, Ripoll, & Panea, 2012).

Studies on lamb meat have mainly focused on the influence of intrinsic and extrinsic characteristics on consumer perception (Bernués et al., 2012; Font-i-Furnols et al., 2009, 2011; Hersleth, Næs, Rødbotten, Lind,

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& Monteleone, 2012). However, the conceptualization of the product by consumers with different lamb meat level of consumption has not been much studied, particularly in non-traditional sheep-producing countries as Brazil.

Understanding how consumers perceive food products represents a challenge for researchers due to the complexity of food choice (Donoghue, 2000). Qualitative techniques are useful for achieving this goal and for determining the key drivers of consumer choice for a particular product category (van Kleef, van Trijp, & Luning, 2005).

Word association is one of the most commonly used methods for the evaluation of conceptual structures and also for studying beliefs or attitudes in psychology and sociology (Doise, Clémence, & Lorenzi-Cioldi, 1993; Hirsh & Tree, 2001; Hovardas & Korfiatis, 2006; Ross, 2003; Schmitt, 1998). This methodology is based on the assumption that giving a stimulus to respondents and asking them to write down the associations that come to their minds gives relatively unrestricted access to mental representations of the stimulus (Donoghue, 2000). When dealing with food products, the associations that first come to the respondents' mind may be the most relevant for consumers' decisions related to product purchase (Roininen, Arvola, & Lähteenmäki, 2006). The ideas expressed within a word association task are spontaneously elicited and might be subjected to fewer constraints than that typically imposed in interviews or closed questionnaires (Wagner, Valencia, & Elejabarrieta, 1996). For these reasons, this method has gained popularity in the last decade in sensory and consumer science (Ares et al., 2015; Mitterer-Daltoé, Carrillo, Queiroz, Fiszman, & Varela, 2013; Son et al., 2014; Vidal, Ares, & Giménez, 2013).

The aims of the present study were: i) to gather information about consumers' perception of lamb meat by means of free word association, and ii) to investigate whether consumers' perception of lamb meat is affected by their consumption frequency of this type of meat.

2. Material and methods

2.1. Participants

The study was conducted using a convenient sample of Brazilian consumers. Convenience sampling is a non-probability method that is usually used in qualitative research when the objective is to get an approximation to a specific topic (Kinnear & Taylor, 1993). In this particular study, it was not intended to get information from a sample population that corresponds to an actual market population, but to explore consumer associations for lamb meat among Brazilians. Participants were recruited via e-mail, using the consumer database of the Sensory Evaluation Laboratory of Embrapa Food Technology and Federal University of Rio de Janeiro (Brazil). The only criterion for selecting participants was their interest and availability to participate in the study. At recruitment stage, no information about the specific aim of the study was provided. The experimental procedure was approved by the Ethics Committee of the University Hospital Clementino Fraga Filho at Federal University of Rio de Janeiro, Brazil.

A total of 1025 Brazilian consumers (65% female, ranging in age from 18 to 74 years old) participated in the study. Participants were also characterized in terms of their lamb consumption using two multiple choice questions. They were asked to indicate if they had ever consumed lamb meat. When the answer was affirmative, participants were asked about the frequency of consumption, with the response options "few times in my life", "few times per year", "at least once a month", "at least once a week", "everyday or nearly everyday". Participants were divided into three groups according to their frequency consumption of lamb meat: frequent consumers (participants who answered the frequency of lamb meat consumption: "at least once a month", "at least once a week", and "everyday or nearly everyday"); occasional consumers (participants who answered the frequency of lamb meat consumption:

"few times in my life", and "few times per year"); and never consumed (participants who reported to had never consumed lamb).

2.2. Procedure

Participants were asked to complete a word association task with lamb meat. They had to write down the first four words, terms or phrases that came to their minds when they thought of lamb meat. An open blank space was provided where they could fit as many words or phrases they required. Participants were asked to answer the question spontaneously. After completing the word association task they were asked to answer a few socio-demographic questions.

The questionnaire was implemented using web interface (SurveyMonkey®). Data were collected in September and October 2014.

2.3. Data analysis

All valid responses from participants were considered for data analysis (i.e. responses corresponding to strings of characters without sense were not considered). Frequency of mention of each word was calculated. Then, data was analyzed using content analysis: terms with similar meaning were grouped into categories using inductive coding by triangulation (Guerrero et al., 2010). Three different researchers with a minimum of two year experience in consumer research evaluated the data and classified the words into categories. Results presented in the current paper were obtained by a consensus between the three researchers to balance out the subjective influences of individuals (Denzin, 1978; Guerrero et al., 2009). The same procedure was used to merge the categories into dimensions. Categories and dimensions mentioned by at least 5% of the consumers were considered for further analysis. This cut-off point was selected to avoid losing a large amount of information (Guerrero et al., 2010; Vidal et al., 2013). Frequency of mention of words, categories and dimensions were calculated without considering if words were provided by the same participant or by different participants (Guerrero et al., 2010; Schmitt, 1998). For this reason, relative frequency of mention of categories/dimensions can be higher than 100%.

The existence of statistical differences in the frequency of mention of the categories and dimensions among consumer groups with different consumption frequency of lamb meat was evaluated using chi-square tests. Then, a chi-square per cell test was used to identify the source of variation of the Global Chi-square (Symoneaux, Galmarini, & Mehinagic, 2012).
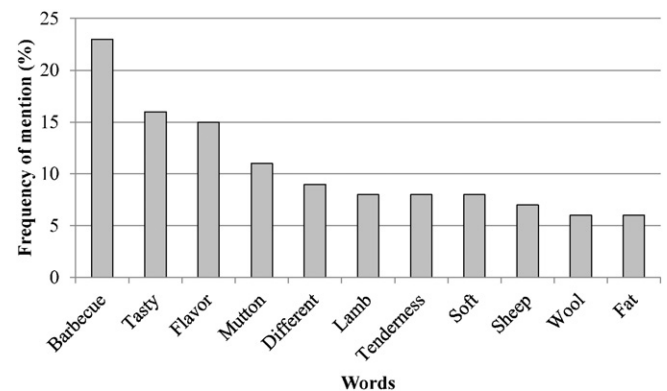

Fig. 1. Frequency of mention of the most frequently mentioned individual words when participants were asked to write down the first four words, terms or phrases that came to their minds when thinking of lamb meat.