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Consumer expectations for sensory properties in virgin olive oils

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Abstract

Information has been shown to create expectations concerning sensory properties and acceptability of food products, and to influence their evaluations. Studying the impact of information is particularly relevant for traditional products which communicate about typicality. Extra virgin olive oil is a typical Mediterranean production whose typicality is strongly affected by the origin of its raw material and the manufacturing technology. The present study aims (1) to explore the appropriateness of several sensory descriptors in evaluating the typicality of certain extra virgin olive oils, (2) to assess the impact of information about the origin of the product on the sensory profile perception, (3) to study how the effect of sensory expectations can influence liking and "typicality" responses for the experimental oils obtained from a defined cultivar. Working with a panel of consumers familiar with several typical extra virgin olive oils produced in Lucania, a set of monovarietal extra virgin olive oils were evaluated. Results show that there are well defined expectations for some of the sensory properties which characterize the typical olive oils presented. The sensory disconfirmations leading to complete assimilation in sensory perception are associated to higher "typicality" ratings. Our results also revealed that bitterness and pungency proved to be the most appropriate sensory descriptors of certain typical olive oils.

Keywords: Olive oil; Appropriateness test; Typicality; Expectations; Origin

1. Introduction

The beliefs and attitudes of individuals with regards to food products are strongly dependent on their cultural traditions and on their education and culinary habits and they may vary with information (Issanchou, 1996). Recent research on the effects of different types of information about nutritional qualities, or food ingredients and use, or the origin of raw material, or the manufacturing process, etc. suggest the possibility that these messages may also generate hedonic expectations and influence food acceptability. Most of the empirical studies confirm that the influence of information on liking after tasting could be explained by an assimilation model as a possible consequence of the occurrence of a disconfirmation phenomenon (Caporale & Monteleone, 2001; Caporale & Monteleone, 2004; Johansson, Haglund, Berglund, Lea, & Risvik, 1999; Kähkönen & Tuorila, 1996; Lange, Rousseau, & Issanchou, 1999; Siret & Issanchou, 2000).

Disconfirmation, i.e. the difference between the expected acceptability of a product and the blind acceptability of the same product before being affected by expectations, affects food perception and acceptance. When the stimuli/product is better than expected, the disconfirmation is positive. Conversely when the stimuli/product is worse than expected the disconfirmation is negative. A number of predictive models (e.g. assimilation and contrast) have been suggested in order to

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explain the effect of discrepancies between expectations and actual product performance on acceptance (Anderson, 1973; Cardello & Sawyer, 1992).

Assimilation model occurs when liking of the product moves in the expectation direction. Thus, when the differences between liking without (blind) and with information (actual) prove to be significantly different from zero it means that there was a significant effect of written information on hedonic scores and an assimilation occurs if liking after exposure to information is influenced in the direction of expected liking. Furthermore, in the case of assimilation, when expected minus actual liking results significantly different from zero it means that the score in the presence of information was located between the blind score and the expected score, i.e. consumers do not completely assimilate towards their expectations and assimilation is not total (Siret & Issanchou, 2000). Several authors suggested that if consumers do not completely assimilate the discrepancy between their expectations and perceived quality it can be assumed that they will revise their expectations after repeated exposures (Deliza & MacFie, 1996; Goering, 1985; Lange et al., 1999).

Information about country of origin has a ''tremendous influence on the acceptance and success of products'' (Dichter, 1962). Other authors showed that country of origin has a strong influence on product evaluation (Peterson & Jolibert, 1995). In particular country-of-origin information may be studied as a cognitive cue, an informational stimulus about or relating to a product that is used by the consumers to infer beliefs regarding product attributes such as quality (Bilkey & Nes, 1982; Steenkamp, 1990). In addition to its role as a quality cue, country of origin has symbolic and emotional meaning for consumers. So there are cognitive, affective and normative mechanisms which govern country-of origin effects (Verlegh & Steenkamp, 1999). Some authors report that the region-of-origin cue has a direct effect, not only indirect via perceived quality, on regional product preference for some consumer segments, especially those resident in the product's region of origin. Product's place of origin may elicit emotions based on consumer's experience with the region able to directly affect regional product preference. When consumers are aware of the region, the ''region-of-origin'' cue triggers consumers' associations with the region, which are then used to evaluate the product. The stronger and more favourable consumers' associations with the region are, the greater the level of success of regional products (Van der Lans, van Ittersum, De Cicco, & Loseby, 2001).

Typical foods are characterized by a complex quality profile defined by several conditions such as geographic origin, culture, tradition, environmental factors, genetic properties and the manufacturing process know-how. These factors may affect the sensory profile of products determining their specificity. The typicality of a product depends therefore upon the detection of certain quality allowing it to be distinguished from other products of the same commercial category, and for this reason ''typical'' products are identified with well defined sensory expectations by consumers familiar with them. It may be supposed that the quality of typical food products is related to the conformance of these products to a characteristic sensory profile, and thus we can assume that when these products are experienced and respond in terms of expected and actual sensory profiles, they are accepted by consumers and present a high quality level.

Amongst typical food products extra virgin olive oil plays an important role as a typical example of Mediterranean production whose typicality is strongly affected by the origin of its raw material and the manufacturing technology. In recent years the European Union (EU) has recognised many protected extra virgin olive oils (protected designation of origin or protected geographical indication). These typical oils, which are mainly famous for their sensory properties, present a complex and specific qualitative profile including both intrinsic and extrinsic factors.

For many years market researchers have addressed the question of how failure to satisfy expectation affects consumer satisfaction of products (Cardello, 1994). However, it is only recently that sensory scientists have begun to address the question of how expectation effects may influence consumer perceptions of sensory attributes (Deliza & MacFie, 1996; Deliza, MacFie, & Hedderley, 2003; Kähkönen & Tuorila, 1998; Lange et al., 1999; Prescott & Young, 2002). Kähkönen and Tuorila (1998) found that when ''Bologna'' sausages were labelled as reduced fat, they were rated as lower in saltiness and fattiness than a regular sausage, differences that were not apparent when no information was given.

Most of the cited studies on the impact of information on expected and actual sensory properties deal with products often unfamiliar to consumers or at least anonymous or commercial (Deliza et al., 2003; Kähkönen & Tuorila, 1998; Tuorila, Cardello, & Lesher, 1994). It would be very useful when marketing typical products to investigate how information about the products' origin can affect the perception of sensory descriptors and how the effect of sensory expectations can influence liking and the response of ''typicality'' according to consumers familiar with the product.

The present study was designed to examine the impact of information about the origin of the product (production area and cultivar) on the expected and perceived hedonic and sensory properties of extra virgin olive oils.

The work explored a possible approach for dealing with studies related to the measurement of the sensory expectations of consumers towards typical products using two separate phases: (1) the selection of the most appropriate attributes for describing the sensory