

# CONSIDERATION REGARDING FOOD TEXTURE ANALYSIS AND ITS INFLUENCE ON CONSUMER BUYING DECISION

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**Abstract:** *The texture of food is one of the important factors contributing to subconscious perception of quality sensory properties. Based on this we see that the education of consumer is an important factor in the acceptance or refusal of food products. If the prior education determine the consumer to anticipate the food product by sensors induced by subconscious, the product will be accepted by the consumer without any objections from the sensors but if the contrary, the feeling is not in conformity with the comfort induced by subconscious, the product will not go unnoticed and may even lead to a denial of food product. The properties of texture can make a difference on quality in terms of processing technologies and food categories such as organic, traditional and conventional food products.*

**Keywords:** *texture, human sensors, quality, prior education.*

## 1. Introduction

Food consumption is influenced by several factors such as quality, price, and marketing. In the category of quality, the main characteristics of the product are related to the way that consumer perceives the product through the sensory capacities available to him through the sense organs (hearing, seeing, smelling) that offer an organoleptic analysis followed by a sensory analysis of the texture properties involving the oral cavity as an organ. Texture is an important factor in the appreciation of food products and most people seem to have a clear idea of the expected texture of a product based on their memory of past experiences (Mojet, 2005).

Consumer education is very important or even decisive when it comes to accepting a product or other product, so rural consumers seem to know better the differences between organic and conventional products than urban consumers.

The texture of food varies depending on the mode and the degree of processing, thus favoring different consumer appraisals. In order to identify in the research the link between sensory analysis and texture properties of organic, conventional and traditional foods, have been considered less processed products such as raw products.

## 2. Materials and method

-Sample of 150 people, students, aged 19-25;  
-30 organic products on the Romanian market;

-30 traditional Romanian products;  
-30 conventional products on the Romanian market;

-Keyence VHX600 digital microscope.

Methods:

- Sensory analysis designed to appreciate texture properties;
- Microscopic analysis using the Keyence VHX 600 digital microscope.

In the sensory analysis of the texture properties were considered as parameters: (Necula et al. 2013);

Rigidity- as an indicator of analysis- the compression force of the product between the molar teeth;

Adhesion - as an indicator of analysis- the degree of adherence of the product to the teeth;

Masticability - as an indicator of analysis- the number of cyclic mastication movements required to form the food bowl;

Toughness -as an indicator of analysis- the number of mastications required to disintegrate the product to be swallowed (Luca, 2014).

The experimental researches were carried out at the High Tech Research Innovation Development Institute for Sustainable Development of the Transilvania University from Brasov, Romania.

### 3. Results and discussion

#### Working hypothesis 1

The prior education is very important in consumer choice of food products.

The food consumer education (Kahnman, 2012) is an important form of influence on its perception when he purchasing food because this is based on sensory experience of food acquired over the years from childhood to maturity.

In order to highlight the importance of the consumer's prior education towards food products, a questionnaire was made on a group of 30 people aged 25-60 years, with secondary and higher education, representatives from local institutions in Romania. Consumers who participated in this questionnaire have had one thing in common; they came from rural areas, are living or lived in the village.

Following the analysis of the questionnaire responses, I came to the conclusion that these consumers have better criteria in order to choose products compared to those who came from urban areas, this consumers have better criteria based on taste and texture in order to differentiate organic products from conventional ones.

#### Working hypothesis 2

Texture properties of foods are an important criterion in the consumer's decision in order to accept or refuse the food.

Before that 150 people from urban areas to be part of the sensory food research, they had to respond to a questionnaire asking: What kind of

food do you prefer - A food that requires a greater effort of mastication? Or a food that requires less exercise?

The answers were in favor of the second question, which demonstrates the importance of texture properties in consumer choice.

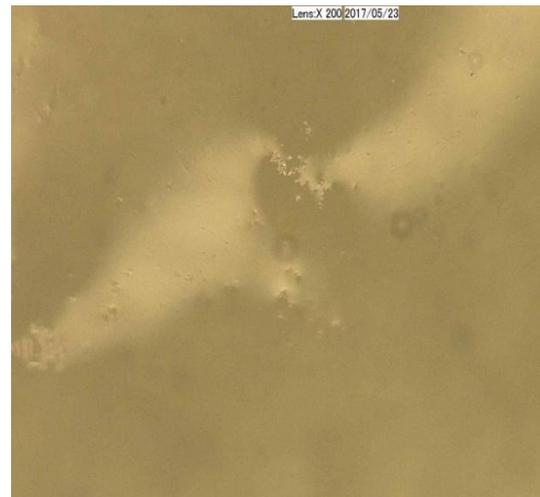
To the question: What kind of meat do you prefer: dishes made from commercial meat or meat products from the traditional producers? The answer was in favor of commercial preparations because the texture of meat in case of commercial preparations is finer and easier to chew compare to traditional products.

In order to find an explanation of the answer to these questions, several food products have been analyzed in the sensory analysis for different degrees of importance of the texture (Rus, 2001) in relation to their quality. The relationship between the importance of texture and the quality of products perceived by the consumer is dependent on the degree of processing of the product. Thus, an ultra-processed product may be more preferred by consumers at the expense of a less processed product with a simpler recipe, since the higher degree of processing involves less effort on the part of the consumer in the mastication process.

In order to understand the importance of texture in choosing products by consumers, have been considered raw products, which have undergone few changes during their traceability, such as conventional honey, in figure 1 and figure 2.



**Fig.1.** Rape honey –IJ9523



**Fig.2.** Rape honey -IJ7215

For the sensory analysis of texture properties was choosed two sample of rape honey IJ9523 and IJ7215 from diferent producers because of its

solid consistency witch could not be differentiated with the help of the sense- see organ. As a result of the sensory analysis (Necula

et al, 2013) of the texture properties, the sample from the fig.2 was preferred by consumer. The reason for choosing this sample is the finer consistency compared to the other product.

### Working hypothesis 3

The texture properties differ for the three categories of food: organic, conventional and traditional. How does this decision influence the consumer?

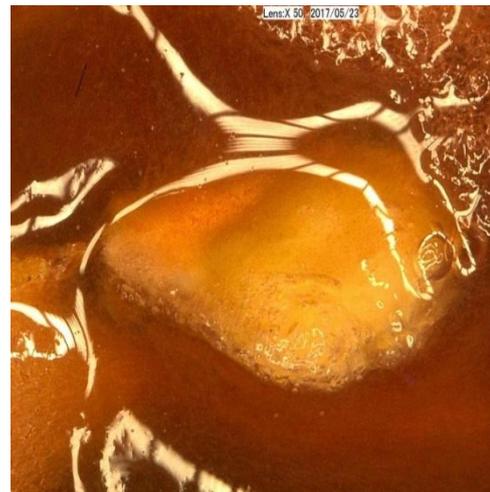
In the case of traditional products, texture properties can not be distinguished on the same principle as organic products because we can not

speak of a traditional raw material, but a traditional way of processing that gives the product the attribute of traditional product. Microscopic analysis of traditional products compared to organic or conventional products cannot be based on the principle of equality in the presentation of these products.

In order to comply with this principle, in the comparative microscopic analysis as well as comparative sensory analysis were analyzed raw products belonging to the two categories of conventional and ecological products, as shown in figures 3 and 4.



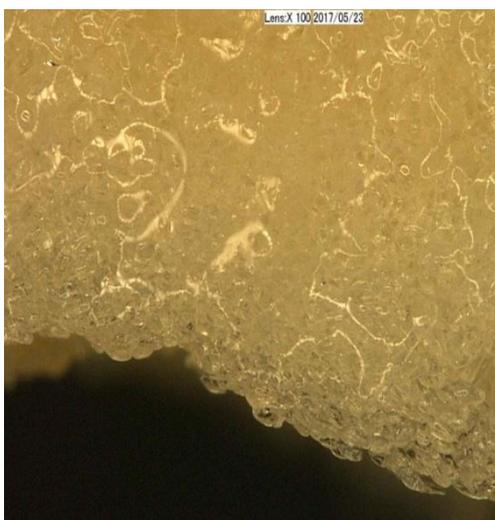
**Fig.3.** *Conventional tomatoes-section*



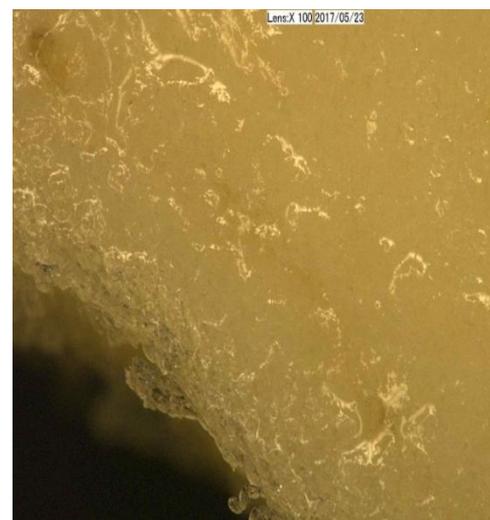
**Fig.4.** *Ecological tomatoes-section*

From the category of raw products, fresh fruits and vegetables were chosen for analysis, the quality of these products being dependent on the perception of the texture properties by the consumer.

From the point of view of the texture properties, on the principle of preference, conventional tomato was chosen.



**Fig.5.** *Ecological bananas*



**Fig. 6.** *Conventional bananas*

Ecological tomatoes, was considered more rigid than conventional tomatoes. Not the same thing happened in the case of appreciation of taste and smell, this time ecological tomatoes was the most appreciated product. Besides vegetables, fruits are another category of raw products that can be consumed in unprocessed form and whose qualitative (Marculescu, 2001) appreciation depends greatly on the texture properties.

One of the most commonly consumed fruits are bananas, although sensory analysis makes it difficult to distinguish between an organic product and a conventional one, microscopically can see changes as shown in figures 5 and 6 below.

### Conclusions

The sensory experience of healthy and qualitative products such as organic products can form in the mind of the consumer a reference model for every subsequent sensory experience in food commodities, so that a prior education can be developed in the case of comparative analysis.

The texture of food is perceived as an indicator for the quality of food in the consumer's subconscious. For each category of food, the consumer has an own standard for assessing the quality of the food according to the mode and the degree of processing. So all the texture properties that can be interpreted by rigidity-adhesion-masticability-toughness are dependent on each other and this represents a criteria in acceptance or rejection by consumers based on education, lifestyle, and age.

The texture properties differ for the three categories of conventional, organic and traditional food. These differences may be to the advantage or disadvantage of a product of the three categories, this fact must draw the attention of the producers of organic and traditional products to consumer education because the consumer in generally tends to focus on slightly chewable products, a criterion which includes conventional product.

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