5th ISEKI-Food E-conference

Current food innovation trends:

the texture and consumer perception perspective

Book of Abstracts

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BOOK OF ABSTRACTS

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Maria Papageorgiou, Adriana Skendi

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Exploring physicochemical and textural characteristics of commercial frozen pita bread in the Greek market

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Flatbread is one of the earliest processed foods prepared from wheat flour in the Mediterranean, Middle East, and neighboring areas. Pitabread is a type of yeast-leavened flatbread common in Greece. It must have a soft and flexible texture in order to be easily wrapped. The objective of this work is to investigate the physicochemical and textural properties of commercial pita breads sold as frozen in order to discover possible relationships between their composition and ultimate quality.

A total of sixteen (16) pitabreads from different producers were collected from the freezers of supermarkets in Greece. Samples were immediately stored also in the freezer (-18°C) till measurements. Samples were treated as suggested in the instructions of the manufacturers to reach edible form. First, they were heated and then allowed to reach room temperature before measuring their moisture, weight and volume, and testing their texture. A Kramer test was used to test the pita bread texture while Hardness and Work were calculated based on the curve obtained in the Texture Analyzer. In general, there are observed significant ($p<0.5$) differences among the pitabreads in terms of specific volume, moisture and texture. There was observed a very high variation in the textural parameter values (Hardness 33.65-156.6N, Work 224.73-1184.73N.sec) as well as in values of specific volume (2.01-3.58ml/g) and moisture (26.35-43.75%). The evaluated texture parameters did not significantly correlate with the specific volume of the flatbreads. On the other hand, both hardness and work were significantly negatively correlated with the moisture ($r>0.71$) of the breads but positively with their fat, protein and salt content ($r = 0.26$-0.46) as retrieved from their label. The specific volume of the pita breads was poorly ($r=-0.249$) negatively correlated with fiber content. These preliminary results revealed that although commercial frozen pitabreads vary largely in their physiochemical and textural properties, among the composition parameters, moisture content plays a crucial role in affecting their textural properties since it showed the highest correlation coefficient.

Keywords: frozen-stored pitabread, texture, moisture content, specific volume, composition

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