Exploring physicochemical and textural characteristics of Greek commercial pita breads

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Pita bread is a type of yeast-leavened flatbreadcommonly consumedin Greece. One of the quality requirements for this type of bread is to have a soft and flexible texture in order to be easily wrapped. The objective of this work is to monitorthe physicochemical and textural properties of commercial pitabreads, sold at ambient conditions.
A total of thirteen (13) pitabread samples from different producers were collected from supermarkets in Greece. Samples were stored in sealed containers at room temperature before being tested and handled based on manufacturers' instructions. First, there were heated (baked) 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 texture and Hardness and Work were calculated based on the curve obtained in the Texture Analyzer. Moisture and texture were also tested after storage of two and five days of the ready to eat pita breads.
In general, there were observed significant differences among the pitabreads in terms of specific volume, moisture and texture parameters. Both hardness and work increase with ageing whereas moisture content of pitabreads decreases. No correlation was observed between texture parameters with the specific volume but it was negatively correlated with the carbohydrate content ($r>0.57$) of the breads. Only work was significantlypositively correlated with the moisture ($r=0.67$) of the breads.PCA analysis revealed a clear separation of commercial pitabreads by the type of additives.
These preliminary results revealed that commercial pita breads vary largely in their physiochemical and textural properties. Parameters such as moisture and carbohydrate content but also type of additive seem to determine their textural properties.

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