

ANALYSIS OF THE PHYSICAL PROPERTIES OF FRUIT YOGURT

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In this work, there were examined the rheological attributes of yogurt processed from a mixture of goat and cow milk (series I) and actual goat milk (series II) supplemented with black chokeberries (*Aronia melanocarpa*, Nero variety), raspberries (*Rubus idaeus*, Cușma lui Guguță variety) and strawberries (*Fragaria xanassa*, Selva variety).

Texture, firmness and viscosity are the main quality parameters of yogurt. Consumer acceptance of yogurt is based on physical attributes such as: without syneresis, characteristic flavor and good textural properties. The differences in texture between yogurts depend on the type of milk and the chemical composition.

The yogurt was manufactured, under laboratory conditions, by the thermostat method, from a mixture of cow's milk and goat's milk in a ratio of 45:45% +10 % of black chokeberries, or raspberries, or strawberries puree (Series I) and from goat's milk 90 % + 10 % of black chokeberries, or raspberries, or strawberries puree (Series II). The methods used were: viscosity determination and texture evaluation.

The obtained results show differences between the yogurt samples. However, adding 10% fruit puree to yogurt increases the viscosity during fermentation in all samples, and the best viscosity and firmness is observed in P2 (2500 ±0.023 mPa·s) of Series 1, due to the presence of hydrocolloids in black chokeberries fruits, which produced a better textural quality than the rest of the samples. In the samples of Series II, in which only goat's milk was used, a lower viscosity was observed compared to the rest of the samples.

The effect of storage temperature was compared between samples, and the results were recorded at different temperatures (6, 12, 18°C). It was found that the lower the storage temperature, the higher the viscosity values. Regarding the storage temperature, it was observed that P2 (yogurt with black chokeberries) from the yogurt Series I presented the most consistent values with a decreasing tempo, these results being due to the gel formation process through the influenced casein values of hydrophobic interactions, favored by low temperature and higher resistance.

The results obtained demonstrate the positive influence of fruit hydrocolloids. Thus, Series I presented the best values of the texture evolution in relation to the samples from Series II, a fact explained by the increased density of the network from a physical point of view, and by facilitating the connection with water molecules, increasing the water binding capacity of the gel, from a chemical point of view. P3 of Series I had higher firmness due to high fiber raspberries and total dry matter. Series II yogurt was characterized by lower hardness, stickiness, extrusion forces and higher susceptibility to syneresis, was less viscous than series I yogurts.

Samples from Series 1 of yogurt is shown to be better in textural properties and appearance: viscosity improved, structure maintained, syneresis inhibited and taste perception modified, because the cow's milk had a stronger protein network.

Keywords: goat's milk, cow's milk, viscosity, texture, temperature.