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The influence of modified waxy maize starch on the quality of low-fat yogurt

ShaimaaM. Hamdy,H. M. El-Garhi and Kh. A. ABBAS*

Dairy Dept., Fac. of Agric., Fayoum Univ., BP 63514 Fayoum, Egypt.

*Corresponding author:khabbas@yahoo.com Tel: 00201095014050

ABSTRACT

The influence of adding different levels of modified waxy maize starch (1.0, 1.5, 2.0 g/kg milk) as a fat replacer on the physicochemical, textural and sensorial properties of low-fat yogurts(1.5% fat) was studied during the cold storage at 1, 3, 7 days, compared with full-fat control yogurt (3.0% fat). The addition of modified waxy maize starch (MWMS) to low-fat yogurtswas significantly ($P < 0.05$) increased for the acidity %, water holding capacity, apparent viscosity and decreased for the syneresis than those presented by full-fat control yogurt during the 7 days' storage at 5°C. Textural measurmentsshowed that low-fat yogurt with 2.0% MWMS had significantly higher for hardness values than of full-fat control yogurt and no significant difference existed between low-fat yogurts with 1.0 or 1.5% MWMS and the control yogurt in respect to hardness attribute. The sensory analysis did not detect significantdifferences in both the appearance, whey-off scores of the experimental yogurt samples. The low-fat yogurts with 1.0 or 1.5% MWMS showed insignificant difference with full-fat control yogurts in respect to firmness and smoothness scores. The low-fat yogurts with 2.0% MWMS had a very firm texture, a starchyflavour which was unacceptable. Overall, the good quality of low-fat yogurt can be manufactured with 1.5% MWMS which exhibited textural characteristics resemble those of full-fat control yogurts.

Key Words: Low-fat yogurt, modified starch, viscosity, texture.