

Physicochemical, viability, microstructure, and sensory properties of whole and skimmed buffalo set-yogurts containing different levels of polydextrose during refrigerated storage

Shaimaa Mohamed Hamdy¹, **Hani S. Abd El-Montaleb**¹, Ahmed M. Mabrouk², Khaled Abbas¹

¹Dairy Department, Faculty of Agriculture, Fayoum University, Egypt

²Dairy Science Department, National Research Centre, Giza, Egypt

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Abstract: This work was planned to investigate the influence of polydextrose as a fat replacer on the properties of skimmed yogurt. So, five batches were prepared; full-fat yogurt (control) and four skimmed yogurt batches prepared with 0%, 1.0%, 2.0%, and 3.0% polydextrose, respectively. Addition of polydextrose had significant effects on pH values and acidity and skimmed yogurt with 3% polydextrose exhibited significantly ($p \leq .05$) higher in the apparent viscosity, WHC, and lower in syneresis. The viable counts of *Streptococcus thermophilus* and *Lactobacillus* spp. in samples containing polydextrose remained above $>10^6$ CFU/g. Microstructure showed stronger and more stable gel structures in treatment with 3% polydextrose. No significant differences were noted between yogurt with 3% polydextrose and full-fat yogurt in sensory attributes except flavor. Higher sensory scores were observed for yogurt with 3% polydextrose. Thus, the addition of 3% polydextrose was sufficient to develop skimmed yogurt with desired properties.

Keywords: polydextrose, skimmed yogurt, full-fat yogurt.

