

## COMPARISON OF ULTRASOUND AND HEAT EFFECTS ON RHEOLOGICAL, MICROBIAL AND PHYSICOCHEMICAL PROPERTIES OF YOGURT DURING STORAGE

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The objective of this work was to comparatively explore the impact of High Intensity Ultrasound (HIUS), 20 KHz for 5 min and 60% amplitude, and Thermal treatment (TT), 72°C for 30 min in 2.5% fat stirred manufactured yogurt during 1,7 and 14 days of storage at 4°C. These processes were evaluated for their effects on rheological, microbiological and physicochemical analysis. All treated samples were analyzed for titratable acidity, pH, syneresis, viscosity and microbial count. Microbiological analysis was consisting of starter culture bacteria count (microbial population 'CFU' of both *S. thermophilus* and *L. delberuckii* Subsp. *bulgaricus*) and yeast and mold counts were determined. It was found that in both samples pH decreased and lactic acid increased during 14 days of storage but yogurt with HIUS treatment showed higher pH and lower titratable acidity in comparison with heat treated samples. A comparison between two samples showed that the average syneresis of HIUS samples were higher than TT samples. And also yogurts with HIUS treatment resulted in lower apparent viscosity than the TT samples (the average of 327.89 MPa.s in TT and 176.55 MPa.s in HIUS samples). The result showed that the culture bacteria count in TT samples was significantly lower than HIUS samples (the average of 4.75 log (CFU/mL) *L. bulgaricus* in HIUS samples and 7.04 log (CFU/mL) in TT samples and the average of 4.74 log (CFU/mL) *S. thermophilus* in HIUS samples and 6.70 log (CFU/mL) in TT samples and non significant yeast and mold were observed.

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