

CAMEL'S KEFIR MILK: OPTIMISATION OF PROCESSING CONDITIONS

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ABSTRACT

This research was aimed to optimise an experimental process to transform camel milk from semi-intensive rearing system to a fermented milk named “kefir”. Three doses (2%, 5% and 10%) of kefir grains, three incubation stages (18h, 20h and 24h) were tested at a fixed temperature 25°C. The physicochemical and microbiological quality of raw camel milk, Kefir grains and their fermented product were determined. In parallel, the effect inoculation dose and incubation time were studied to determine the necessary conditions for the manufacture of camel's kefir. Results showed that camel milk from semi-intensive rearing system had 104.76 g/l total solids, 24.2 g/l proteins, 32.71 g/l fat, 8.63 g/l ash, 41.23 g/l lactose, 15.77 °D acidity and a pH of 6.52. The microbiological analysis (cfu / ml) showed a low load in aerobic bacteria [7.19(10³)], Coliforms [1.61(10³)], lactic acid bacteria [3.98(10⁴)] and Yeast and mold [3.9(10²)]. A significant effect of the grain dose on the pH as well as the acidity of the obtained Kefirs was revealed. It is noted that the camel kefir with a dose of 10% had the highest acidity (97.35±2.9^a °D, pH 4.03±0.16^c) and the highest viscosity (58.67±2.4). However, the incubation time had no significant effect on the physicochemical quality of the obtained kefir. According to the *Codex Alimentarius* (Codex Stan 243-2003) and sensorial tests, a typical camel's kefir milk from semi-intensive rearing system required 2% kefir grains and 18h of incubation time.

Key words: camel milk, kefir, optimisation