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Lour cheese prduction

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Abstract

"Lour" is a Ricotta-like cheese which has been traditionally produced by local ranchers in towns in Iran. Lour cheese is traditionally produced from whey, but milk and milk-products such as yoghurt are used nowadays to produce it. Lour cheese is consumed young; however it tends to be less favored by consumers due to its lack of flavor, high moisture, and short shelf life. To address these issues, this study investigates new production processes for Lour cheese from whey and milk using lactic and acid coagulation with the addition of thermophilic (TL), Mesophilic (MO), and mixture (TMB) starters. 5 samples were taken from each of the 4 products (i.e., control, TL, MO, TMB) at Days 1, 7, 14, and 21 (total of 20 samples for each product) after production and evaluated in terms of physical, chemical, and sensory properties. Collected data was analyzed and visualized using SAS and Excel software. A randomized block design was used for the study. The Duncan multiple range test was used to compare mean characteristics between products and possible correlation between characteristics of interest were tested using Pearson correlation coefficients. In terms of physicochemical properties, during the 21 shelf-life, the control product had the highest average PH, lowest acidity, lowest dry matter, and highest protein content compared to all other 3 groups ($p<0.05$) on days 1 to 21. The fat content did not significantly change from day 1 to 21 in any of the groups. In terms of sensory characteristics, Lour cheese produced using starters had significant better cutability and shelf-life. Cheese produced using TL starter had the highest color quality (milky white) on day 21, however the difference in color quality was not statistically significant on days 1, 7, and 14 between groups produced using a starter. While the TL treatment was superior in terms of several properties it did not rank high in overall acceptability. Cheese produced using the TMB starter had the best organoleptic properties, texture, acceptability, and shelf-life at day 21 compared to other treatments. The TMB treatment was selected as the best production process for Lour cheese.

Keywords: Lour cheese, thermophilic starters, mesophilic starter, mixed starters, physicochemical properties, sensory evaluation, shelf-life