Extension of Shelf Life in Set Yoghurt by Altering the Starter Culture

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Shelflife of currently available yoghurts in the market is relatively low. The present study was done to develop set yoghurts with extended shelf life by incorporating a novel starter culture, AiBi 22.50 LOW which contains *Streptococcus salivarius* ssp., *thermophiles, Lactobacillus delbrueckii* ssp., *bulgaricus* and examined its quality attributes while gaining a better insight into the relationship between, storage temperature and the shelflife. A preliminary trial was conducted to determine the suitable incorporation level of the culture. Yoghurts were prepared using two commercial starter cultures, Yoflex and AiBi 22.50 LOW followed by incubation at 42°C until pH reached 4.6 and stored at storage temperatures of 4°C and 28°C. Four treatments (0.004% Yoflex/4°C, 0.004% Yoflex/28°C, 0.005% AiBi/4°C and 0.005% AiBi/28°C) were evaluated for pH, titratable acidity, texture profile, microbial count and keeping quality at 7 days interval for 42 days. Results further revealed that set yoghurt with the two cultures was not significantly different in chemical composition. Although, at the initial stage of storage, set yoghurts stored at 4°C with 0.005% AiBi culture had the highest pH value (4.61) and the lowest acidity value (0.57). Yoflex & AiBi culture incorporated yoghurt samples stored at 28°C had the lowest hardness compared with yoghurts stored at 4°C.0.005% AiBi culture sample had shown a decrement of pH values while an increment of acidity at the period of 4°C storage compared to other treatments. The hardness of yoghurt increased within the period of storage till 4th week. Further, all microbial parameters (coliform, yeast & mold) were found to be below the standard levels of SLS within the storage of six weeks. Set yoghurts having 0.005% AiBi culture which was stored at 4°C exhibited higher mouth feel. Hence, 0.005% AiBi culture added yoghurt stored at 4°C can be introduced as extended shelf life yoghurt with adequate nutritional and sensory properties.

Keywords: Set yoghurt, Shelf life, Starter culture, Texture