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Viability of Bifidobacterium Species in Probiotic Yoghurt as Influenced by Reducing Agents

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Abstract

This study aimed to determine if reducing agents such as ascorbic acid and L-cysteine could improve the viability of Bifidobacterium spp. in yogurt to be able to produce probiotic yogurt that confers health benefits to the consumer. Samples containing no reducing agents, 0.2 g/L ascorbic acid, 0.50 g/L ascorbic acid and 0.50 g/L L-cysteine were produced with commercial starter culture and two different probiotic species, namely B. animalis and B. bifidum. The samples containing L-cysteine were deemed unsuccessful after fermentation as the reducing agent inhibited fermentation. The other samples were observed over a shelf-life period of 28 days. The viabilities of the probiotics and the starter culture species were monitored, and it was determined that there was no significant difference in the viabilities of the probiotic species or of the starter culture species observed. Physiochemical analyses were also performed and found that most samples were not significantly different in terms of titratable acidity, texture or water holding capacity.