

Probiotic Viability of Cow Milk Kefir during Storage

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Kefir is a popular fermented beverage produced by the action of bacteria and yeast. It is a natural probiotic product which has gained increasing interest among the health conscious consumers. Aim of this study was to develop cow milk kefir and analyze the probiotic viability during storage. Standardized cow milk was preheated at 95°C for 10 min and mixed with 5% of skim milk powder(w/w), 3.25% of gelatin(w/w) and different levels (0.5%, 1%, 1.5% and 2%) of sugar separately. Each batch of milk was heat treated at 105°C for 1 min, cooled to 40°C and inoculated with probiotic culture (*Bifidobacterium lactis*), yoghurt culture (*Streptococcus thermophilus* and *Lactobacillus bulgaricus*) and baker's yeast (*Saccharomyces cerevisiae*) at level of 1%. Milk mixes were incubated at 32°C for 6 h until pH reached 4.6. Based on preliminary studies, potassium sorbate at 0.03 % (w/w) was added just after incubation to restrict further alcohol development. *Bifidobacterium* and yeast counts in each product were analyzed using *Bifidobacterium* selective agar and yeast extract dextrose chloramphenicol agar at 1, 7 and 14-day cold storage at 4°C. pH, titratable acidity, total solid and brix values were evaluated at 1, 7 and 14-day cold storage at 4°C. The kefir sample with 2% sugar was selected as the most consumer preferred sample (P<0.05) during sensory evaluation. *Bifidobacterium* count of the kefir incorporated with 2% sugar was significantly higher (P<0.05) compared to other samples after 14 days. *Bifidobacterium* count did not significantly decrease during 14 days of shelf life. Proximate analysis showed that kefir incorporated with 2% sugar contained 2.32% of protein and 1% fat. Results revealed that kefir can be kept in plastic bottles in refrigerated condition without deterioration for 14 days. The study further showed that kefir can be successfully developed as a probiotic product.

Keywords: *Bifidobacterium lactis*, Yeast, *Saccharomyces cerevisiae*, Titratable acidity, Gelatin