

## **Designing processing and fermentation conditions for long-life set yoghurt for made-in-transit (MIT) product**

### **ABSTRACT**

Extending yoghurt fermentations could facilitate yoghurt distribution by allowing the fermentation to occur during transportation - a concept known as "made-in-transit" (MIT). The objective was to determine the starter culture composition, inoculum size and fermentation temperature for extending yoghurt fermentations to 168 h. The yoghurt was processed using a milk base sterilized by ultra-high temperature (UHT) treatment at 138C for 6 s. Factorial experiments for yoghurt processing were designed with starter culture combinations of STLB (*Streptococcus thermophilus* with *Lactobacillus delbrueckii* subsp. *bulgaricus*) and STLA (*S. thermophilus* with *L. acidophilus*), inoculum sizes of 2.0 and 0.2% (v/v) and fermentation temperatures of 25 or 35C. The fermentation was monitored over 168 h using pH, starter culture concentration and firmness. The combination of STLA, and a 0.2% inoculum, fermented at 25C extended the yoghurt fermentation to 168 h; however, no gel formed. The best product was produced with a STLB starter combination of 2.0% inoculum fermented at 35C for 24 h. This shows the constraints and limitations of applying the MIT concept to a fermented food.

**Keyword:** Yoghurt fermentations; Made-in-transit (MIT)