Concurrent Session 7A: Micronutrients, Cereals and Milk

Use of *Propionibacterium jensenii* 702 in goat's milk yogurt production

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Background – Goat's milk is a good nutritional source with higher digestibility and lower allergenic properties compared to cow's milk. Unpleasant "goaty odour" of raw goat's milk could be masked by producing fermented products. Compared to milk, fermented milk products may offer other health benefits. Yogurt is a very popular fermented milk product that is widely consumed all over the world. In recent years there has been a trend to produce yogurt by using probiotic bacteria together with traditional yogurt cultures due to their beneficial health effects. In addition to Lactobacilli and Bifidobacteria species, *Propionibacterium* species are also used in dairy fermentation due to their ability in producing characteristic flavours, vitamin B12 and potential probiotic effects.
Objective – To produce goat's milk yogurt by using *Propionibacterium jensenii* 702 with lactic acid bacteria and to investigate their microbial, physical and chemical properties.
Design – Yogurt containing *P. jensenii* 702 was produced from goat's milk by inoculating 10^8 cfu/g of *P. jensenii* 702 as an initial population together with lactic acid bacteria and starter culture. The product was assessed for the survival of *P. jensenii* 702 at refrigerated storage (4^oC) over 35 days using spread plate technique. Physical and chemical properties such as syneresis, water holding capacity, texture, total solids, pH, titratable acidity of yogurt were measured according to standard methods.
Outcomes – The counts of *P. jensenii* 702 were decreased to 10^7cfu/g during 35 days of storage period. However, they demonstrated better survival rate compared to lactic acid bacteria ($P<0.05$). The initial pH of the product (4.52±0.02) was decreased to 4.36±0.01 over the shelf life. The other physicochemical properties of goat's milk yogurt fell within the following averages: synersis 32.65±0.55%, water holding capacity 19.33±0.67%, texture 1222.33±1.67 cP, total solids 16.91±0.24% and titratable acidity 1.35±0.15%.
Conclusions – Goat's milk yogurt contains recommended level of *P. jensenii* 702 (10^6-10^7 cfu/g) at the end of 35 days of shelf life which is essential to confer health benefits to consumers. Hence, this product is suitable for the delivery of PJ 702 together with lactic acid bacteria due to their excellent viability in goat's milk.

Withdrawn