

Preliminary study on the effect of a cow's teat predip and a teat cup disinfectant on the presence of mesophilic and (proteolytic) psychrotrophic bacteria prior milking

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Summary

This research communication evaluated the effect of a teat predip (active components: L-(+)-lactic acid and salicylic acid) and a teat cup disinfectant (active components: peracetic acid and hydrogen peroxide) on the number of mesophilic and (proteolytic) psychrotrophic bacteria prior to milking as contamination of raw milk by psychrotrophs can lead to the production of heat-resistant proteases and subsequent spoilage of UHT milk.

The teat apices of 10 cows were sampled before and after treatment with a teat predip on six subsequent days. On the teats, there was a statistically significant decrease in the psychrotrophic cell counts before and after predipping (daily average: 3.42 ± 0.39 cfu/cm² before and 3.27 ± 0.26 cfu/cm² after predipping). No differences were observed for the mesophilic cell counts (daily average: 4.06 ± 0.40 cfu/cm² before and 4.175 ± 0.22 cfu/cm² after) and proteolytic active counts (daily average: 1.55 ± 0.42 cfu/cm before and 1.29 ± 0.67 cfu/cm² after). Teat cups were also sampled before and after disinfection. No statistically significant decrease in the cell counts was observed after teat cup disinfection. On average, mesophilic and psychrotrophic counts were 3.15 ± 0.55 log/cm² and 2.07 ± 0.50 log/cm², with an average reduction of 0.15 and 0.21 log/cm², respectively.

Sixty-two percent of the proteolytic psychrotrophs were pseudomonads: 16.5% of which were *P. fragi*, 14.3% *P. lundensis*, 10.0% *P. fluorescens* and 2.9% *P. putida*. TNBS analysis revealed a wide variety in proteolytic activity (from 0 to 55 μ mol glycine/mL milk) and the presence of high producers.

Unexpectedly, there was only a minor effect of both disinfectants on the psychrotrophic bacterial counts, which is not enough to reduce flow-through to the raw milk.