

DAIRY INDUSTRY

ISSUE

Presence of biofilm produced by *Bacillus sporothermodurans* within the facilities of a dairy plant.



BACKGROUND

- The pasteurization processes, although adequate in deactivating vegetative cells, failed to kill spores; the surviving spores encountered little to no competition from faster growing vegetative cells, enabling them to germinate and proliferate rapidly in the product.
- The adhesive characteristics of some spores facilitated their attachment to the surfaces of pipes and processing equipment, leading to the formation of biofilms and causing contamination of clean milk.

PROBLEM DESCRIPTION

- According to the Health Department between 2010 and 2015 there has been an increase in the incidence of UHT milk with “unsatisfactory” commercial sterility test results.

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TREATMENT

- Enzymatic treatment with TENSIO CIP plus BIO CIP followed by a peracetic disinfection through all the cip pipe circuit.



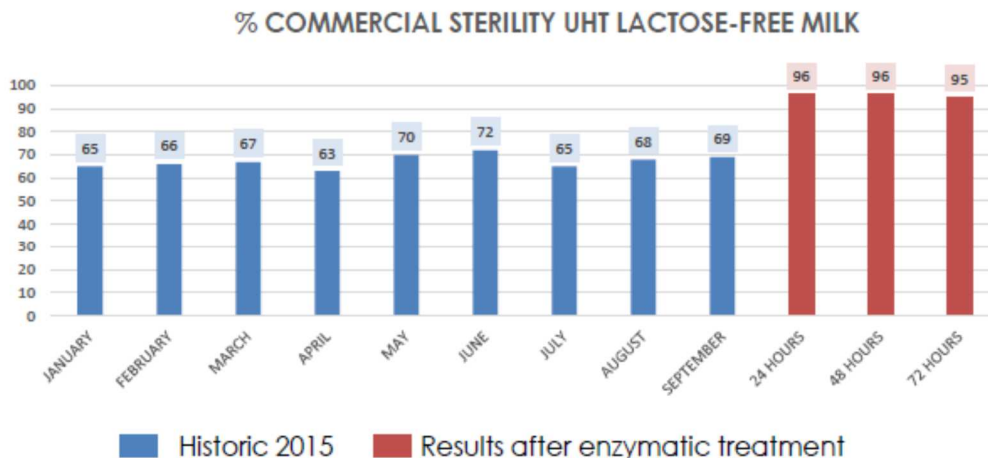
RESULTS

Before Treatment:

- Biofilm formation of mostly *B. sporothermodurans* inside cip pipelines.

After Treatment:

- The efficacy of the enzymatic treatment was verified by the absence of *B. sporothermodurans* in the final product when comparing the results to commercial sterility (UHT) last year, with those obtained in the production immediately after enzymatic treatment.



- There was 28% improvement in signs of 24, 48 and 72 hours of incubation on the results obtained in the course of year 2015.

RECOMMENDATION

- Periodically run an enzymatic treatment to avoid the reappearance of the *Bacillus* biofilms.

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