Case Study –

Continuous Filler Disinfection (CFD)

Summary

A large beverage manufacturer in Germany operates 5 bottling production sites with approximately 1100 employees and sales volumes of over 2 billion liters per year. In conjunction with Trustwater™, the company undertook an extensive trial to validate the use of Trustwater™ for external Continuous Filler Disinfection (CFD), using Ecasol™, Trustwater's non-toxic disinfectant solution. This trial proved successful and CFD has been signed-off and now forms a valued part of the hygiene and production program.

Background

The technically-progressive company pride themselves on their long-standing know-how, the application of advanced technologies and environmentally friendly processes. They operate a number of bottle fillers and each of these fillers must be taken down every 8 hours to foam and sanitize. This periodic foam/sanitize process takes approximately one hour to perform and during this period, significant production losses are suffered. The goals set for the trial were to reduce the filler exterior foam cleaning from once every shift to once every seven days. To be successful, the plants microbiological integrity was to be maintained, the solution was not to cause corrosion, no sensory or analytical variation was to be found in the final product and the solutions used were to have no impact on the site's wastewater treatment system.

Approach

The trial was undertaken for a period of 4 months on filler 7.

The Trustwater™ skid and generator was installed with storage tanks and dosing pumps. For the purpose of the CFD trial, a $1m^3$ storage tank was dosed with Ecasol and this solution was then pumped to the spray nozzles located at the filler. A number of different spray nozzles were tested to determine the most suitable and effective nozzle for the application. A number of locations were swabbed for microbial contaminationThe trial protocol called for microbiological and ATP swabs to be taken hourly when the filler was running continuously and also to test the residual effectiveness of Ecasol™ solution 4 hours post spraying.

(In addition a comparative trial was also undertaken with the use of Ozone)

MIBI results	**Trustwater™**			**Without Dosing**				**Trustwater™**		
	6.00	7.00	8.45	9.45	10.35	11.35	12.40	13.45	14.35	15.35
Flow Band	0	0	0	0	0	0	0	0	0	0
Gooseneck	0	0	0	0	0	0	0	0	0	0
Lock Transfer	0	0	0	0	0	0	0	0	0	0
Discharge Star Filler	0	0	0	0	0	0	0	0	0	0
Incoming Star Filler	0	0	0	0	0	0	0	0	0	0
Mouth shower	0	0	0	0	0	0	0	0	0	0
Filler Table	0	0	0	0	0	0	200	0	0	0
Bottle Capper Guide	0	0	0	0	0	0	0	0	0	0
Blind Sample	0	0	0	0	0	0	0	0	0	0
AVERAGE	0	0	0	0	0	0	18	0	0	0

Result

Following the 4 month trial period it was found that Ecasol™ met the requirement for disinfection and sanitization. The extensive testing undertaken proved that Ecasol™ destroys all pathogens and successfully extended the filler exterior foam cleaning interval to weekly by continuously disinfecting the filler. In addition, no sensory or analytical variation in the final product was observed, there was no impact upon the company's wastewater treatment and no corrosion was found. As a result the plant benefitted by increased production time, reduced labour costs, reduced chemical exposure and usage and reduced water and energy consumption.