

## RECORDED BENEFITS

- Microbiological contaminant reduced by 99%
- Fresh water intake reduced by 25%
- Wastewater discharge costs reduced
- No vegetable discoloration or organoleptic problems

## Successful Water Process Disinfection Program in Food Processing Plant

### Generox™ CSR System

#### Customer Challenge

A vegetable processing company was trying to identify a biocide for use in spray washing water to be used on vegetables on its conveyer belts. Historically, the water used did not include a biocide which was leading to high levels of microbiological contamination.

Several types of biocide were tested but were ruled out for various reasons. Either the product was not compatible with the vegetables, the feed and dose system were not fully automated, or the product resulted in high microbiological counts.

Solenis' Generox™ CSR chlorine dioxide generator was selected with the goal to improve the vegetable rinse water quality, specifically for tomatoes, with a reliable and efficient product that can guarantee and improve the quality of the production process and in addition meet the organoleptic characteristics of the finished goods.

An additional advantage was to recover and reuse the treated washing water containing residual ClO<sub>2</sub> levels of 0.2 ppm in other production areas to reduce the amount of fresh water usage. The dosing rate of the installed Generox CSR system varied between 0.6 to 1.2 kg/h, depending on the ClO<sub>2</sub> residual demand, monitored and controlled by an on-line system. These dosage variations were required and depending on the level of microbiological contaminants on the processed vegetables. Generox CSR automated controller assured that the required dosage rate was applied. The chemical consumption varies year on year since the microbiological contaminants depends on the crop and harvest season (rainy, dry, humid etc.).

#### Recommended Solution

Due to the considerable variability of the microbiological contaminants present on the vegetables, a Generox CSR generator with a production capacity of 10 kg/h was installed. The generator was started with the objective to measure ClO<sub>2</sub> residual between 0.1 – 0.2 ppm and a process water retention time of at least 10 - 20 minutes in the water storage tank to ensure an effective and efficient microbiological oxidation process.

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### Results Achieved

The Generox CSR was able to consistently meet the target residual levels as agreed with the customer:

- Maintain ClO<sub>2</sub> residual levels between 0.1 – 0.2 ppm
- Reduction of microbiological contaminants by 99%
- Increased volume of recovered and reused water in the process and therefore less water intake and less water for discharge resulting in process costs reduction
- No decolouration effect of the washed vegetables – finish product quality remained very high