

Case Study

Chlorine Dioxide On-Site Generation

HydroChem recommended and installed an on-site chlorine dioxide generation system for a large wholesale nursery. This system promotes growth by minimising bacterial infection of seedlings. The generation system has improved growth rates and survival percentages throughout the operation - maximising profitability.

Background

HydroChem manages the water for a large wholesale nursery in Tasmania.

The operation has over 12,000 sqm of heated glasshouses with plants grown via hydroponics and 40,000 sqm grown in the open via spray/sprinkler watering.

Aims/Objectives

To introduce an effective disinfection system that was relatively simple for site operators to manage - whilst minimising risks to crops and workers.

Overall the objective was to increase the growth rate of seedlings - minimising the time from seeding to sale.



Issues / Challenges

The operation had a traditional disinfection system that was difficult for nursery operators to maintain. As a result, disinfection levels were erratic.

The issue was that, when disinfection levels were low, the growth rate of seedlings was delayed. When disinfection levels were high, there was a high risk of damage to seedlings.

The system also required direct chemical handling which posed OHS risks to operators.



Solutions

HydroChem recommended on-site generation of chlorine dioxide as the best approach for the nursery. Although the up-front equipment cost of an on-site generator is higher than standard dosing pumps, the ongoing costs are minimised.

In tandem with the disinfection system, HydroChem also recommended the existing series of make-up balance tanks be replaced with one 500kL tank. This maximises the effectiveness of the disinfection process as the water is more easily mixed and distributed.

Benefits

- Chlorine dioxide disinfection provides effectiveness at relatively low percentage of chemical actives
- Safe system with minimal chemical handling for operators
- Simple to monitor disinfection rates on a daily basis
- Ongoing maintenance costs are relatively low



Results

The on-site generator has realised the benefits envisaged including:

- Operator acceptance
- Effectiveness of application
- Low ongoing costs
- Minimised OHS risks



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