Environmental Successes: Cleaner Production in Industry

Case study: preparing for quality certification

Industry:
Nursery, production

Alstonville Palms

Alstonville Palms is a medium size nursery producing top quality plants in a sustainable manner.

Company characteristics

The nursery is a family business, with three full-time employees and three working directors. It is located at Alstonville, between Ballina and Lismore in northern NSW.

Environmental successes: Case Studies Program

This is one of a series of case studies that emerged from EPA work with industry. It is published in partnership with individual companies to demonstrate their commitment to making environmental improvements through cleaner production.

OUR ENVIRONMENT
it's a living thing

Environmental improvements have been a key part of operational changes at Alstonville Palms nursery. The nursery adopted cleaner production measures as part of its drive to achieve accreditation in the nursery industry accreditation scheme.

What did they do?

Modify the irrigation system

A new computerised irrigation system measures plant water requirements and responds accordingly. Watering is varied according to plant species and water loss over the last 24 hours. Water requirements are planned on a daily and yearly basis. The nursery installed micro sprinklers in place of less efficient sprinklers, and designed their own drip irrigation system.

Reuse water

All irrigation water is reused after being treated. The water is filtered and the pH is corrected. It is then disinfected to remove plant pathogens, using ultra-violet radiation and occasionally chlorine. Runoff is completely contained on-site in an enclosed drainage system and two dams. The dam water quality is improved through aeration and by using beneficial bacteria. Fish are used as a monitor for quality.

Why did they do it?

The company became aware of environmental issues through an education campaign about water, and through water reforms. Alstonville saw adopting a cleaner production approach as a stepping stone towards meeting the international environmental management standard ISO14001. In particular, it wanted to improve the efficiency of its irrigation system and its compliance with occupational health and safety standards, and environmental legislation. Alstonville has since achieved quality accreditation through the Nursery and Garden Industry Association.

What are the outcomes?

As well as complying with tougher legislative requirements, the company has improved the quality of its plants, improved working conditions and greatly reduced its water usage.

Efficient irrigation

The purpose-built drip irrigation system is more efficient than the industry standard. It delivers 7mm of water per hour, whereas the industry standard is 10–12mm per hour. The amount of leachate is nil or negligible. Water use has decreased by 75%, from 48 mega litres to 12.2 mega litres a year.

Better use of water

By reusing water the nursery has improved its environmental performance and secured its water supply. Long-term planning of water requirements allows the company to sell its unused water quota.

Reduced costs

- Pumping costs have decreased.
- Fertiliser leaching has decreased so fertiliser costs are lower.
- Nursery bed maintenance costs have decreased.

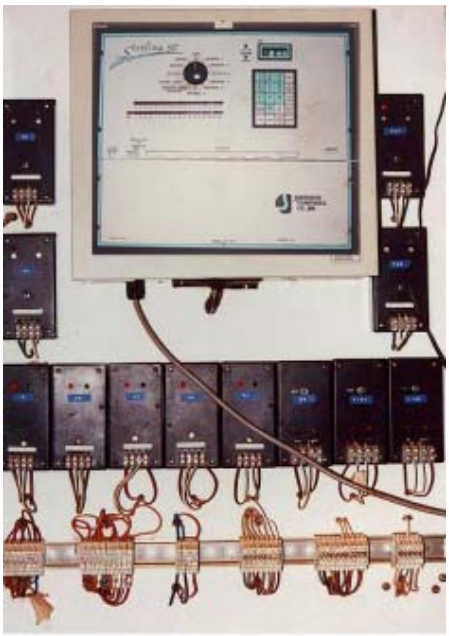
Rewards and recognition

Under the NSW Government's Rivercare Program, Alstonville Palms won a silver award for water efficiency in 1995, a gold award in 1998 and an award for excellence in 2000.

Less risk

The company has reduced its liabilities by improving working conditions and occupational exposure to risk.

Evaporation is measured daily using an 'A Pan'. The previous day's evaporation is entered into the irrigation controller and the exact amount of water is distributed to fill the containers. The problems with under or over watering are eliminated.



The Heart & Soul of Nursery Irrigation

For large containers water is pulsed through drippers using the 'Black Boxes' to slow the water delivery. The potting mix is then able to absorb the water with minimal runoff. Irrigation water is recycled water.

What were the costs and savings?

system/equipment	cost	payback period
Dam, drainage and monitoring system	$63,000	2 years
• class A pan evaporimeter	$ 200	immediate
UV water treatment system	$ 6,000	2 years

Savings

In the long term Alstonville expects the cleaner production initiatives will save it between $15,000 and $18,000 per year.

Where to now?

The company aims to continue improving its environmental standards. For example, it intends to eliminate waste all together.

More information

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