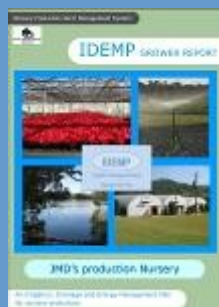




Queensland Government
Supported by the Qld Government
Department of Natural Resources and Mines

Irrigation, Drainage & Energy Management Plans (IDEMP) describe the infrastructure and management practices in operation at a production nursery and outline plans, designs, suggestions and opportunities for on-farm system and equipment improvements and upgrades.

IDEMPs support growers in nursery production to address both economic and environmental issues relating to water access, recycling, storage and use to ensure the business remains profitable and sustainable into the future.



The Pipeline

An electronic update on Nursery Production RWUE-IF project activities

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Nursery Production Rural Water Use Efficiency—Irrigation Futures (NGIQ RWUE-IF)

IN THIS PIPELINE

Lizard Mountain Field Day
Managing irrigation and drainage in severe events

DATE CLAIMERS

Growing media workshop
Sunshine Coast. Field Day
Cairns Region. April dates
to be advised

VIDEO

Irrigation scheduling in containerised nursery production
<https://youtu.be/bTtv86XORXw>

Lizard Mountain FMS Field Day Report

On Thursday the 16th of November at FMS field day was held at Lizard Mountain Nursery, funded under the Rural Water Use Efficiency Irrigation Futures initiative. The day was well attended, with participants coming from as far away as Mackay and the Sunshine Coast.

The day opened with Ian Stewart giving an introduction to the history and philosophy behind Lizard Mountain Nursery, outlining how the business started and its progression over the years.

Gary Edwards from Besgrow showed a series of videos demonstrating how coir is produced, highlighting the number of steps and methods in the production process.

David Hunt from NGIQ gave a broad overview of energy efficiency in production nurseries, and the areas growers should investigate to improve energy efficiency. Depending on the type of business, pumping and the use of Variable Frequency Drives are areas that can be addressed, but heating, cooling and lighting are also areas worthwhile investigating.

Andrew Chamberlin provided an update on the Queensland Farmers Federation Energy Savers Plus programme, and the benefits of improving energy efficiency. A short video

highlighting the energy improvements made by Aspley Nursery was shown (video available at the Energy Savers Plus website).

Ryan Dillon continued the energy efficiency theme, with a presentation on how growers can improve their energy efficiency using the services of the Websters Group. This company will complete an energy audit of a business, and provide a report of potential upgrades that can reduce energy costs.

Lex McMullin from NGIQ then gave a hands on demonstration on setting up sprinkler systems to best management practice.

Common sprinkler layouts seen in nurseries were demonstrated and why some are less efficient than others.

David Hunt interviewed Ian Stewart on his experiences with cyclone Marcia, focussing particularly on what Ian would do and what has been done to make the business more resilient to future cyclones. The take home message from Ian was that preparation was the key to minimising the effects of cyclones on the business.

Lunch for the day was provided by Garden City Plastics, followed by a nursery tour where Ian Stewart showed what improvements had been made to the facility post cyclone Marcia.

IDEMP Video and Technical Information

For technical information visit the NGIQ Technical Information Library at
<https://www.ngiq.asn.au/resources/technical-information/>



Managing irrigation and drainage systems in severe events

In nursery production, managing severe events and their aftermath may have to be dealt with from time to time. While they cannot be prevented, careful planning and preparation can help minimise the effects of these events. The following focuses on irrigation management, irrigation infrastructure, and the three stages of events - preparation, the event, and dealing with the aftermath, with preparation being the key to achieving the best outcome.

The aftermath in the table only concentrates on the short term. After the clean-up has occurred, and production is back to normal, a review should be made of the event, what worked successfully, what didn't, and what can be done in the future to minimise the effect of similar events.

Lex McMullin, Farm Management Systems Officer, Nursery & Garden Industry Queensland, Published June 2017

Event	Preparation	During the event	Short term aftermath
Drought	<ul style="list-style-type: none"> Review storage capacities, alternative water sources and costs. Investigate evaporation and seepage mitigation strategies cost and effectiveness. Address irrigation system maintenance. Plan water management strategies at decreased water levels. 	<ul style="list-style-type: none"> Manage irrigation scheduling closely. Monitor storage levels. Keep system operating at peak efficiency. Address leaks and losses in the system promptly. Monitor rainfall predictions. 	<ul style="list-style-type: none"> Droughts often end with significant rainfall events. Rain event strategies may have to be implemented.
Rain and flooding	<ul style="list-style-type: none"> Maintain drainage infrastructure. Move irrigation infrastructure likely to be affected by flooding. Turn off power. Check backup irrigation systems are operating and have sufficient fuel. 	<ul style="list-style-type: none"> Monitor flood levels and apply remedial action if possible. 	<ul style="list-style-type: none"> Reinstate infrastructure. Check electrical connections. Monitor irrigation scheduling to ensure plants don't dry out or become too wet.
Cyclones	<ul style="list-style-type: none"> As per rain events. Secure infrastructure against wind. Removal of irrigation infrastructure, including emitters, may be an option. 	<ul style="list-style-type: none"> Little can be done during these events. 	<ul style="list-style-type: none"> As per rainfall events.
Bush fire	<ul style="list-style-type: none"> Ensure backup irrigation systems are operating and sufficient fuel is available. Prepare alternative irrigation system if existing system damaged e.g. poly pipes melted. 	<ul style="list-style-type: none"> As much as personal safety allows, keep growing stock and infrastructure wet. Monitor water status of plants. 	<ul style="list-style-type: none"> Check infrastructure for damage and repair as necessary. Irrigate stock.
Frost	<ul style="list-style-type: none"> Check frost mitigation infrastructure is working correctly. Ensure backup systems are functioning. Refer to frost mitigation nursery paper for management strategies. 	<ul style="list-style-type: none"> Monitor temperatures and system operation closely, particularly around sunrise. Ensure system operates before water freezes in pipes. 	<ul style="list-style-type: none"> Assess severity of damage to plants. Check irrigation infrastructure for damage and correct operation.
Heat waves	<ul style="list-style-type: none"> Check system is operating at peak efficiency. Check operation of backup systems. 	<ul style="list-style-type: none"> Monitor plant water status closely. 	<ul style="list-style-type: none"> Check stock water levels and adjust as required.

In the Pipeline for February/March 2018

- Project officer to visit all areas of the state over the next couple of months.
- Growing media workshop on the Sunshine Coast and Field Day in the Cairns Region, both in April. Actual dates to be advised.

