



# WHAT'S NEW AT THE MARSH LAWSON MUSHROOM RESEARCH UNIT

## Optimising nitrogen in compost

A new trial, managed by AHR in collaboration with Dr Michael Kertesz, has been set up in the unit to examine the benefits of fertigation. The study is an integral part of the Hort Innovation project *Optimise nitrogen transformations in mushroom production (MU17004)*.

This trial marks the first time nitrogen (N) fertigation has been tested in the unit. Urea will be used as the nitrogen source to deliver the same amount of N that would be available in a slow-release supplement.

The main difference between fertigation and slow-release fertiliser is timing - in this fertigation study the N will be delivered into the colonised compost right before each flush, when the mushrooms need it the most. The trial is based on the work of Dr Michael Kertesz who discovered that there was a spike in N consumption just prior to the flush, and that targeted addition of N can increase both yield and N content, especially in later flushes.

While urea is currently being used, there is potential to explore other fertilisers such as ammonium salts, amino acids, protein hydrolysates, or protein-based fertilisers that are soluble in water. The trial is operating

on normal overhead irrigation for both the control and fertigation side, with drip irrigation used only for fertiliser input. Water inputs are accounted for in the overhead irrigation.

## Impact of bacteria to speed up spawn run

In a recent project at the University of Sydney, Dr Meghann Thai and colleagues have added compost bacteria to compost during the spawn run in an effort to speed up the process. The aim is to shorten the colonisation process by a few days and thereby increase production efficiency.

The bacteria used in the project were originally isolated from mushroom compost, so they are well equipped to survive in the compost bed. They were grown in a laboratory before being diluted to a specific number of cells per gram of compost and added to the compost at the start of spawn run. This facilitated accurate and consistent application of the bacteria during the spawn run.

This project is part of a larger initiative by Hort Innovation to improve the efficiency and sustainability of mushroom production.



Set up of the nitrogen fertigation trial in the MLMRU with drip irrigation for the fertiliser input.

- Umberto Calvo

## BE INVOLVED

The Marsh Lawson Mushroom Research Unit is available to the industry for research projects and small proof-of-concept trials.

The team of researchers and technicians can tailor support packages to your needs, including trial designs, growing and harvesting, treatment applications, data collection, analytical services, and reporting.

For more information contact Adam Goldwater (adam.goldwater@ahr.com.au)



This project has been funded by Hort Innovation using the mushroom research and development levy and funds from the Australian Government. For more information on the fund and strategic levy investment visit [horticulture.com.au](http://horticulture.com.au)