

Unigro GroDome Technology & Research Success offer a solution to water shortages

The environmental accuracy of the Unigro GroDome at East Malling Research has enabled Dr Mark Else, Phillippa Dodds and June Taylor to develop irrigation management techniques that offer the potential to save water while maintaining or improving product quality.

The group's work with strawberries has already shown that water savings of over 30% can be made without reducing the proportion or quality of class 1 fruit. Furthermore, the techniques can be used to control the height of Poinsettia, which could reduce future reliance on expensive and environmentally undesirable Plant Growth Regulators. This work is part of a larger DEFRA funded project in collaboration with Lancaster University and the University of Dundee.

The impact of Partial Root Drying (PRD) and Regulated Deficit Irrigation (RDI) can vary with different crops, substrates and climatic conditions. In order to optimise these techniques, the plant hormones that control shoot and fruit growth under deficit irrigation must first be identified and quantified. The research team are using tomato plants grown in the Unigro GroDome to detect the small changes in the plant's hormone profile that control leaf and fruit development. "This work will eventually enable us to tweak the PRD system to get the best results in different crops and growing systems," said Phillippa Dodds.

"The ability to accurately manipulate the humidity and temperature in the GroDome is essential for our experiments," said Dr Mark Else. "The GroDome's running costs, being lower than controlled environment glass, allow us to utilise this environment for the life of the five year project," he concluded.

Thanks to Unigro for this application

The Equipment

The EvapoSensor and EvapoMeter. A system which measures Evaporation-Transpiration, and was produced by Skye during our participation in the HortLink project "Improving the efficiency of water use in Container-Grown Nursery Stock".

Comparisons of the EvapoMeter have been made directly against Potential Evaporation-Transpiration calculations made using the Penman-Montieth method from automatic weather station measurements, and they are extremely good. The cost of this system is 1/10th that of an Automatic Weather Station.

SKYE INSTRUMENTS LTD

21, Ddole Enterprise Park, Llandrindod Wells, Powys, LD1 6DF, UK

Tel: +44(0)1597 824811 Fax: +44(0)1597 824812

Email: skyeemail@skyeinstruments.com Web: www.skyeinstruments.com



CASE STUDIES

