Preventing pests and diseases in the greenhouse

Principles of daily irrigation periods

Appropriate irrigation is a critical part of maintaining plant health and crop productivity. The nutrient and water needs of a crop change over a 24 hour period. To improve management, generally four daily irrigation periods are used.

**Period 1** starts with the first irrigation of the day and goes through to first run-off. The aim is to wet up the substrate with small, frequent irrigations.

**Period 2** extends for a few hours during the morning. The aim is to maintain the target run-off EC.

**Period 3** is during the middle of the day and the aim is to maintain the target run-off volume.

**Period 4** starts with the last irrigation of the day and goes through to the following morning. The substrate is allowed to dry down during this period.

Irrigation has to be adjusted during the day.

This Preventing pests and diseases in the greenhouse fact sheet is part of a series designed to show basic irrigation practices for substrate hydroponics. Correct irrigation can significantly reduce costs and losses from pests and diseases and improve crop production.

For more information on irrigation in substrate hydroponics contact your local independent advisor.

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The information contained in this publication is based on knowledge and understanding at the time of writing (May 2009). However, due to the advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW Department of Primary Industries or the user’s independent advisor.
**Period I**

- Add 10% water content

Start irrigation 2-3 hours depending on season

- Maintain target run-off EC
- Larger volume to lower EC
- Smaller volume to raise EC

**Percent (%) water content in substrate**

Sunrise

Small, frequent irrigations to add 10% water content

Run-off achieved

**Period II**

- Maintain target run-off EC

Start irrigation 2-3 hours depending on season

- Larger volume to lower EC
- Smaller volume to raise EC

- Maintain target run-off volume

Percent (%) water content in substrate

Sunset

**Period III**

- Maintain target run-off volume

3-5 hours depending on season

0-2 hours depending on plant balance

Stop irrigation

**Period IV**

- Lose 10% water content

0-2 hours depending on plant balance

Stop irrigation

Start irrigation

Irrigation volume and frequency set to maintain target run-off volume

Percent (%) water content in substrate

* No irrigation. Aim to lose 3-4% water content before sunset
* No irrigation. Aim to lose 6-7% water content before sunrise

Sunrise

- 3 to 4%
- 6 to 7%

Sunset