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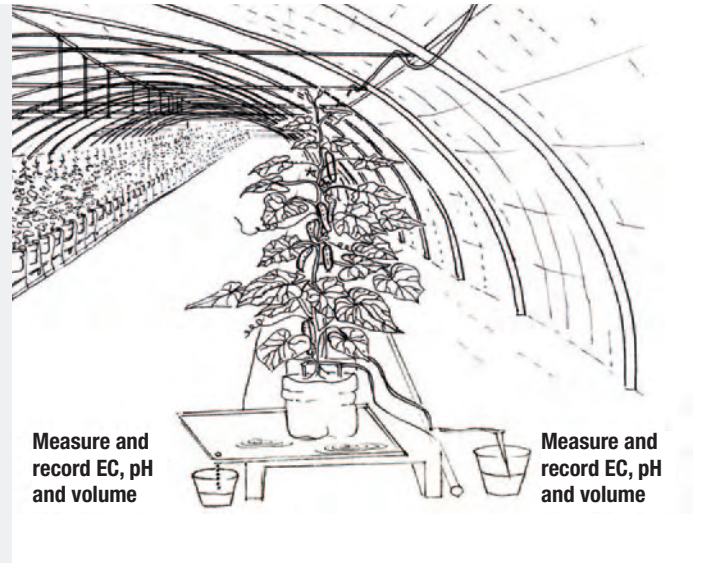
Measure and monitor run-off

Irrigation must be based on the needs of the plant. Too much or too little water can contribute to pest and disease problems.

Always measure irrigation in volume not as a length of time the pump is on.

Run-off targets are a very simple and very useful way of working out the amount of irrigation to apply. Use EC and volume run-off targets. Measure daily.

Collect the output of at least one emitter (feed) and the run-off from at least plant (drain). Measure the EC, pH and volume of both the feed and drain. Use these measurements to calculate the run-off percentage. Keep a record of all the measurements.



Measure the feed and drain EC, pH and volume.

$$\text{Run-off percentage} = \frac{\text{Volume of run-off} \times 100}{\text{Volume irrigated}}$$

For example, if the run-off volume is 100ml and you gave the plant (irrigated) 1 litre (1000ml), the run-off percentage is:

$$\begin{aligned} \text{Run-off \%} &= (100/1000) \times 100 \\ &= 10\% \end{aligned}$$

The daily run-off percentage is calculated over the whole day however, the day is usually divided in irrigation periods (for example Period 1, Period 2 and Period 3 or early, middle and late) and each period can have a different run-off target.

Irrigation period	Run-off target (% of irrigation)
Early (sunrise to mid morning)	0%
Middle (mid morning to mid afternoon)	20 – 40%
Late (mid afternoon to sunset)	5 – 10%
Whole day	20%

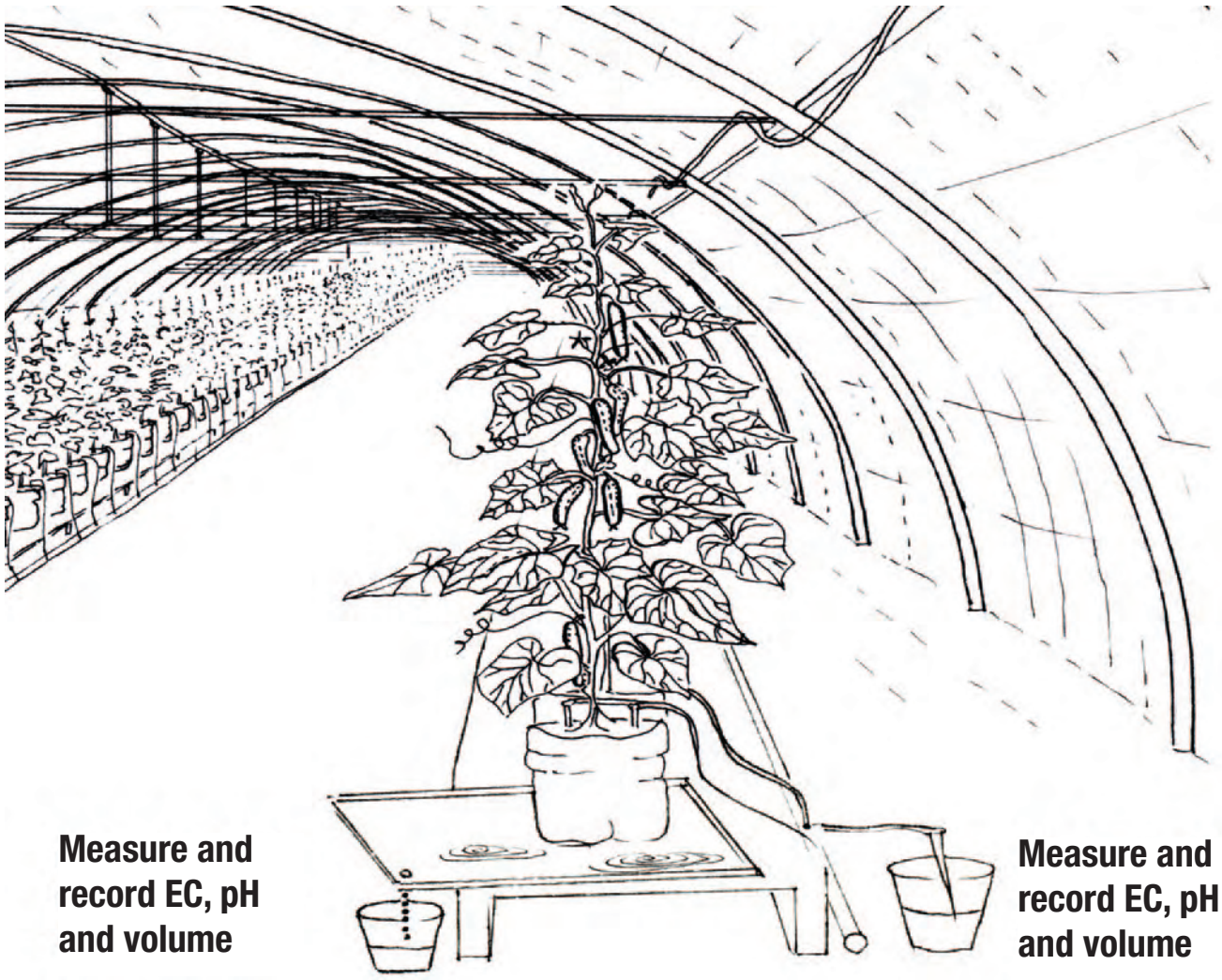
If your target daily run-off percentage is 20%, then for every litre of nutrient solution given to the plants, you would expect 200 ml in total to be collected as run-off after the last irrigation of the day.

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.

These materials were developed by NSW Department of Primary Industries with the assistance of Horticulture Australia Ltd, through the national vegetable levy.

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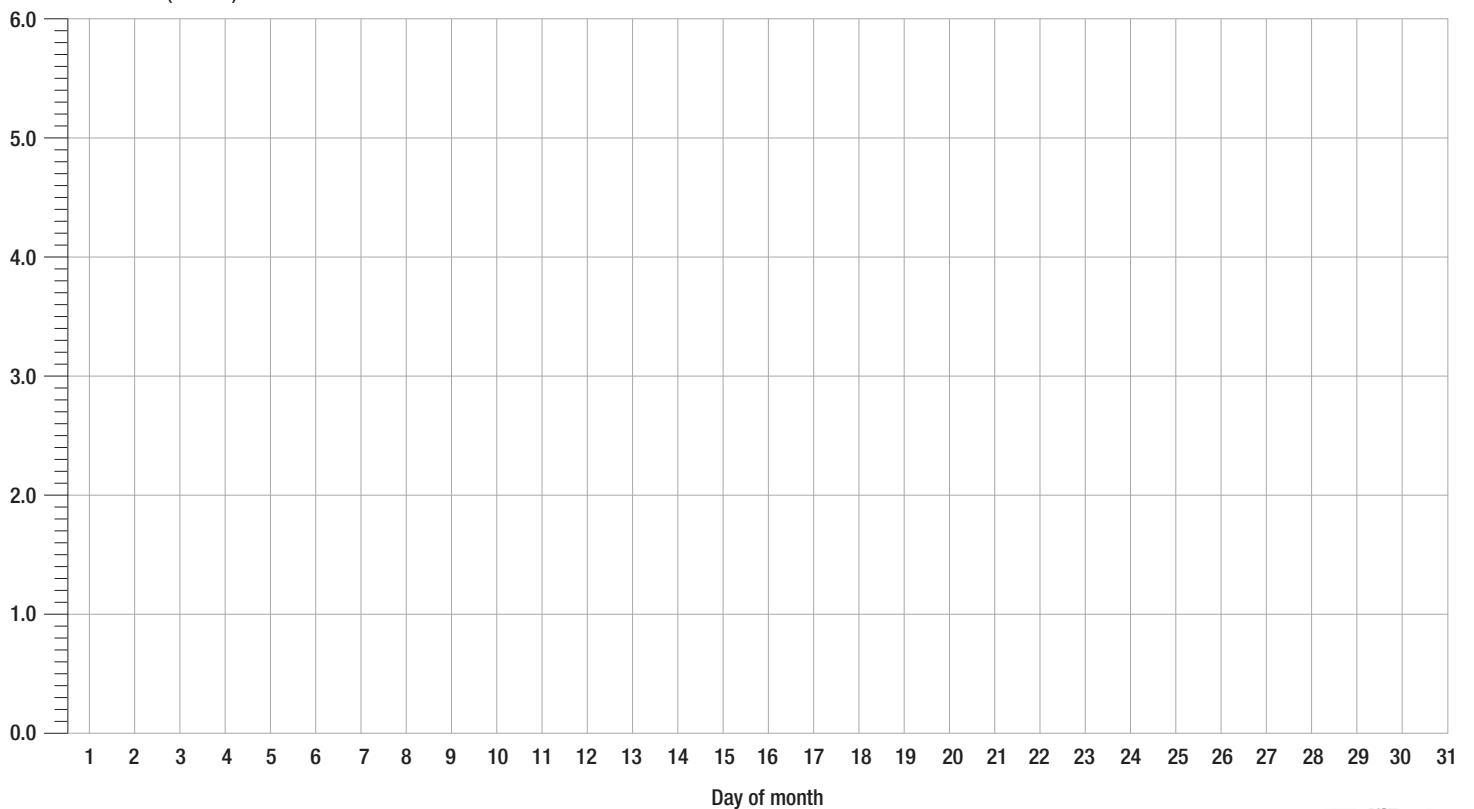
Measure and record EC, pH and volume

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Electrical conductivity (EC)

Crop	
Month	Year

EC value (mS/cm) 10 units cF = 1 EC



<input type="checkbox"/>	Feed EC
<input type="checkbox"/>	Drain EC