

The definition of an efficient nursery irrigation layout.

Most nursery operators would define an efficient irrigation system as one that waters their plants evenly, with a minimum of hand watering being required.

The nursery industry has developed benchmarks that define an efficient irrigation system based on a standard test. In this test, containers are laid out under an irrigation system, and the amount of water they catch is measured. From the data collected, three numbers are calculated which show how efficient the system is, and how it compares against Best Management Practice.

The three benchmarks for Nursery Irrigation Best Management Practice are:

Mean Application Rate (MAR)

This is the rate at which the water is applied to the potting mix. Potting media is only able to absorb water up to a maximum rate, and any water applied in excess of this rate will flow through the mix, and not be absorbed. For bark mixes, a rate of less than 15mm/hr is acceptable but, if a wetting agent is used in the media, this can be increased to 20mm/hr. If coir is added to the potting mix, the acceptable rate is up to 25mm/hr. Also, if the amount of water that needs to be applied is known, the MAR can also be used as a guide in determining run times for irrigation.

Coefficient of Uniformity (Cu).

This is measure of the overall uniformity of the layout. Best management practice for this measure is a result greater than 85% for an existing system, but for a new system a result of greater than 90% is expected.

Scheduling Coefficient (Sc).

This measure indicates the additional time that the irrigation needs to run to wet up the driest pot in the area. This number only refers to a relative time the irrigation needs to run for, not a specific number of minutes. For example, if a system has an Sc of 1.5, this means that if the system needs to be run for 20 minutes to wet up the average pots in the area, it will need to be run for 30 minutes to wet up the driest pot (20 minutes x 1.5 Sc). Best management practice is for the Sc to be below 1.5 for an existing system and below 1.3 for a new system.

The higher figures quoted for new systems are due to improvements in sprinkler design, and also give a margin for decline in performance as the system ages.

If you have any questions on assessing your irrigation system your Farm Management Systems Officer can help out.

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