

STERILIZING THE EBB & FLOW MAT

The Ebb & Flow mats need less sanitizing than normal capillary mats. Under normal operation, drainage will clear excess water from the mat when irrigation ceases, and the residual water is subject to a flushing action when irrigation re-commences.

However, chlorinating or similar action is highly desirable if water is re-cycled. In addition, some certification requirements may make sanitizing mandatory.

The following procedures cover sterilization to prevent disease transmission during production and between crops.

During production

A sterilizing compound such as chlorine can be injected into the irrigation line and distributed through the mat using normal irrigation procedures.

Timing considerations are important to minimize possible toxic effects upon plants placed on the Ebb & Flow mat. Alternative methods of minimizing such effects include:

- Treating the mat at the end of an irrigation cycle (late afternoon may be suitable). At the end of an irrigation cycle, all pots should be fully wet and have little capacity to absorb the treated solution from the mat. By contrast, phytotoxicity is more likely if the mat is treated prior to irrigation when treated water could be absorbed into a partially dry pot.
- Irrigating the mat with treated water during the night or early morning when transpiration is low. At these times, plant uptake and distribution of compounds is at a minimum.
- Pulsing treated water into the mat using an irrigation length and frequency that minimizes movement into the pot. Research has shown that little water is absorbed during the first 5 minutes of the irrigation because there is insufficient free water near the surface of the mat.

The risk of phytotoxicity could be reduced by pulsing the treated water for 5 minutes and allowing 30 minutes before the next irrigation. A sequence of 6 x 5 minute pulses may be adequate but should be investigated in the particular grower context. Since this strategy offers the least protection from phytotoxicity, the treatment solution should be used at a lower strength (5 ppm chlorine could be adequate).

Between crops

A strong chlorinated solution could be pumped into the mat and allowed to stand. The mat could be considered sterilized when the drainage water from the mat has a significant chlorine content.

Alternatively, chlorine could be applied to the surface of the mat in powder or liquid form and washed through with fresh water from a hose.