

EFFICIENCY TECHNIQUES IN PROPAGATION: FOG SYSTEMS

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The system we have at Cypress Creek Nursery is the MEE II fog system. Mee Industries is based in San Gabriel, California; their system is used nationwide for cooling, propagation, and freeze protection. We use the system for propagation and have for a year and a half.

The system is designed to fog 11 double-poly, gutter-connected houses each 108×21 ft. The total area is approximately 25,000 ft.² There are two fog lines in each house suspended 6 feet from the ground. Copper tubing is used in order to withstand the pressure. The 5 H.P. motor pumps water into the system at the rate of 7.3 gal./min. at a pressure of 900–1000 psi. Maximum pressure is 1000 psi.

There are 20 nozzles in each house, 10 nozzles per line spaced 10 feet apart. There are 2 types of filters built into the system. A bullet filter is placed in the back of each nozzle, and 4 cylinder filters fit into the holding tank. Bromide sticks are used in the holding tank to prevent fungus growth in the fog lines.

The system can be run by a timer, humidistat, or manually. We choose to run our system by humidistat suspended in the propagation house. A light bulb attached to the humidistat helps to evaporate the moisture as it is pulled through the humidistat by a small fan. The light bulb in effect keeps the humidistat probe dry, causing the system to stay on longer to keep humidity high. We feel it is important to keep the humidity as close to 98% as possible; this makes it ideal for growing conditions in these houses.

There are some advantages and disadvantages with the system. The main problems we have experienced are:

1. Breaks in the lines. This problem has been virtually eliminated by replacing original fittings with high-pressure fittings.
2. Nozzles stopping up. We've tried soaking them in muratic acid, lasering the orifice, and blowing them out the opposite direction. No solution has been found yet, but lasering does seem to work the best.
3. Heat buildup in the house. We've worked with Mee Industries on this, and we have found that painting the tops of the houses with whitewash paint has lowered the

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temperature 10 to 15°F.

4. Dry areas. Supplementary water is still used when needed. The main areas where we have problems are around the doors.

Advantages in the system are:

1. Increased production and efficiency. The system has cut the rooting times down of certain plants, some as much as half the usual length of time. Plants are never under stress.
2. Moisture. Does not get too wet even with high humidity in Florida.
3. Service. Mee Industries has become much better than in the beginning when the system was first installed.
4. No problem with working conditions. The employees don't seem to mind the fog; the only problem is that it is hard to find them.

If I were installing another Mee system, I feel that it would be beneficial to install a better and more efficient water filtering system for purifying the water before it gets into the system. This would decrease the amount of problems within the lines and nozzles themselves.

All in all, the system has worked well for us. There are still problems to be worked out, but we have found it to be very effective. The fog system has increased our production and improved our efficiency in propagation.