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## **A FOGGING SYSTEM FROM SOUND WAVES FOR PLANT PROPAGATION**

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When evaluating methods to improve cutting propagation, the need to overcome the following problems associated with conventional mist propagation became obvious:

- (a) Nutrient leaching from the leaves
- (b) Cutting media becoming saturated, resulting in decay of cuttings below the surface of the medium
- (c) Wide fluctuations in humidity level, especially when misting is done in conjunction with evaporative cooling or fans
- (d) High volume of water used

One method of overcoming these problems is to create a fog which will remain suspended in the air. This maintains a very high humidity and reduces transpiration loss from the cutting.

We have found Sonicore nozzles a cost-efficient method of producing fog which produces particles between 3 and 5 microns in size. These nozzles are air-driven acoustic oscillators for atomising water, by passing sound waves through a convergent/divergent section into a resonator cap where it is reflected back to compliment and amplify the primary shockwave.

The result is an intense field of sonic energy focused between the nozzle body and the resonator cap. The liquid pumped into the shock wave is vigorously sheared into minute droplets by the acoustic field.

The nozzles are self-cleaning and will not clog. Large orifices and low pressures virtually eliminate orifice wear and prevent deterioration of the quality of atomisation, while greatly extending nozzle life. Because of the low water pressures required, considerable savings can be made by using polyethylene piping instead of PVC.

This system allows the desired relative humidity to be accurately maintained. We have ceased using evaporative coolers as a method of preventing transpiration loss in the cutting propagation areas. A higher strike rate of cuttings is being achieved, despite the higher temperatures and sunlight levels being experienced.

Reduced propagation time has resulted in healthier cuttings, making them easier to transplant into the potting medium. Trials we have carried out also indicated that this method was ideal for young plants which had just been deflasked from tissue culture.

The greater efficiency of this fogging system has allowed us to replace 30 conventional misting jets with 3 Sonicore nozzles, which only required two gallons of water each per hour, if they operated constantly under high temperatures. A laboratory-type humidity control was incorporated into the system and this has required little or no adjustment to the fogging system, other than the regular maintenance of the air compressor.

## **PROBLEMS IN FLORIDA'S CUT FLOWER PRODUCTION**

OLE NISSEN

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My nursery is located on the southeastern coast of Florida, about 80 miles north of Miami near where the Gulf Stream comes closest to the Florida coast. This provides ideal conditions for the production of our crops.

Our crops include miniature carnations, gerberas, and Asiatic lilies, grown under saw-toothed fibreglass structures, plus snapdragons, delphiniums, and other crops under Saran shade cloth, as well as in the open.

Flowers are shipped to about 350 wholesalers as far west as San Antonio in Texas, and Denver, Colorado, but most are sold along the east coast of the U.S.

Shipments of flowers, mostly by refrigerated truck, begin in October and continue to the end of June each year. All flowers are