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Capillary watering economical for container stock irrigation

Capillary watering, commonly used in Europe, and now becoming popular with florists in this country is a method of crop irrigation which offers the nurseryman an easy, economical way of irrigating container stock.

Expenses are lowered because a smaller initial investment is required to establish the system vs. other methods and considerably less water is needed. Furthermore, sub-irrigation lowers the incidence of foliar diseases thus less spraying is required.

The procedure requires a level bench or ground bed, a layer of poly film placed over the bench or bed and a capillary mat on the poly along with a means of irrigating the mat.

The bench or ground bed must be level to support the mat evenly to prevent puddling.

Plywood, snow fence, close spaced slatted bench material, or fairly compact gravel can serve as a base.

Polyethylene of any color and thickness is placed over the base to serve to retain the water and permit it to spread sideways under the mat. The capillary mat is located over the poly and plants placed on the mat.

Mats are kept moist with irrigation through spaghetti tubes or more commonly Chapin's twin-wall or DuPont's Via-Flo tubing. Since it is necessary to keep the mat at or near saturation, the water can be allowed to run all day or put on a time clock operating a solenoid valve. Typically no more than 5-6 pounds pressure is needed with Via-Flo or Twin wall tubing.

At Ohio State University a study was initiated in the container nursery to evaluate the growth of Royal Beauty Cotoneaster produced in 2 container types, 2 container sizes, on several capillary mats on a bench and ground bed.

The plants were potted and placed outside on the mats April 23, and evaluated for vegetative growth Oct. 8, 1976. The growing media was Metro Mix 300 fertilized with

Osmocote 18-6-12. One-half of the plants were grown on an expanded wire, 18" raised bench 48' long by 4' wide covered with clear poly.

The remaining plants were placed on a 3-inch gravel ground bed of similar dimensions leveled and covered with clear poly. The mats evaluated on the bench were: Water-Mat (Pellon Corp.), Vattex-P (U.S. Vattex), Simtrac No. 202 (Simtrac, Inc.) Jednak Thick (not commercially available), Weedchek (Certain-Teed) and Eddymat (F. R. Young Co.) All of the mats except Simtrac and Jednak Thick were evaluated on the gravel bed.

The mats were kept moist via Via-Flo tubing with 2 lines per 4' wide bench or bed operated at 4 to 6 hours per day from a time clock. However, this did not supply all the water needs and plants were watered on an average of once a week from overhead.

The cans were Zarntainer No. 300 (1 gal.) and No. 800 (2 gal.) with holes along the base and one in the underside. Also used were Polytainer No. 1 (1 gal.) and No. 2 (2 gal.) with holes only along the base. Ten 1-gal. Cotoneaster dammeri 'Royal Beauty' and 6 2-gal. cans per container type and size were placed on each mat on both the bench and gravel bed.

Royal Beauty Cotoneaster was selected because it is a rapid growing plant with a greater water requirement than many other plants. Liners from 1975 summer cuttings were placed in all containers. All plants were irrigated thoroughly from above at the time of placement to initiate capillary action throughout the media and mat.

In summary, capillary mats can be satisfactorily used as an aid in the production of container grown Royal Beauty Cotoneaster. The mats were kept moist for 4-6 hours per day (4 hours when the plants were smallest) utilizing time clock controlled Via Flo tubing together with approximately weekly supplemental overhead irrigation.