

system. One quality which most of these products possess is to reduce the amount of nutrients leached from the growing medium. This fact can and will reduce the quantity of water required to grow the crop, since the traditional 10% leaching with liquid fertilization programs may not be necessary.

Some growers and researchers have reported a synergistic effect when using a combination slow-release and liquid fertilization program. That is, plant growth was observed to be better than if either was used by itself. Typically, 1/4 to 3/4 the recommended rate of slow release fertilizer is used with a liquid fertilizer supplement.

In an effort to conserve water, fertilizer, and subsequently money, try incorporating or top dressing some of these products on your growing medium.

#### References

- Holcomb, E. J. 1980. How to increase fertilizer efficiency through slow release formulations. *Florists' Review*, October 1: 9, 38+.
- Sanderson, K. C. 1982. Slow - release fertilizers good for houseplants. *Florists' Review* January 21: 9.
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## Good Water and Capillary Mats

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The accumulation of salts in capillary mats and in pots grown on them is a problem. Growers in New England and in other areas with relatively pure water are fortunate. Salts are not a serious problem.

Capillary watering through mats has many advantages. Different pot sizes may be placed on the same bench. The moisture level is always the same. The labor requirement is minimal. Root systems are usually better than experienced with overhead watering.

There are four problems that have limited the use of capillary pads: 1) salt accumulation, 2) algal growth on the pads, 3) expense and 4) fungus gnats.

1) In my travels around the country and in England, water quality was obviously a problem in many areas. Here in New England the soluble salt content of most waters is

exceptionally low. The accumulation of salts from water is not a problem. More capillary mat watering of pot plants should be used.

2) Algae grow profusely on capillary mats. The type of mat is not important. A solution to this problem was seen in several parts of the country. Cover the mat with several layers of newspaper. When the crop is changed, place fresh papers down. No cost analysis was made on the labor involved but the expense is certainly only a fraction of that of replacing the mats.

Another solution to the problem is treating the mats with Cyprex. It is applied at 1/2-1 oz/100 sq. ft. of mat in enough water to give good distribution and allowed to dry before placement of pots. It will persist for a month or two according to the Ohio Hotline (11/18/82).

3) The cost of setting up benches with the sheet of plastic, capillary mat, (newspaper), and an automatic water dispersal system varies considerably. The pay back time over hand watering can be estimated at two to five months.\* This is comparable to "spaghetti tube" watering systems which are efficient where the same size of pot is used in a year-round operation.

4) Sciarid flies (fungus gnats and shore flies) propagate in capillary mats. They are a nuisance and, in high populations, fungus gnat larvae can seriously damage roots. Fortunately, Orthene, Tenik, Furadan, Vydate and Diazinon were all reported in Foliage Digest (Feb., 1980) to give good control. Fican and Dimilin were also reported in the Ohio Florists Assn. Bul. 624 (Oct., 1981) to give good, lengthy control.

Water can be applied to the mats in a number of ways. If a spaghetti tube system is in place, the tubes are simply laid on the mat. Ooze tubes of nearly any design can be used. A more important aspect is the control of frequency. The best system is undoubtedly control through a solar radiation sensor. The Solatrol (the Berg-Johnson Co., P.O. Box 5541, Hamden, CT 06518) has been used for many years in the UConn greenhouses. The mat stays uniformly wet regardless of the weather or time of year. Computers with solar sensors can also be adapted to accomplish this.

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\* The pay back time is based on a capillary mat installation cost of 20-30 cents/sq. ft. and hand watering costs of \$.50-1.20/sq. ft./year.