2. Buy your software. Unless you are a programming whiz, you won't be able to produce programs as good or as cheap as what is already on the shelf.
3. Visit your computer store often. New software is constantly appearing, especially for the more popular computers.
4. Decide what role the computer is going to play in your life. If it is to be used as a tool, don't over-complicate things by setting up computer files for things that are best done manually.
5. Select a computer brand that will not become obsolete. The field is progressing very rapidly, but the better companies will continue to support users of their older models.
6. Select a computer that can be serviced locally.

NEW MOUNTAIN LAUREL SELECTIONS AND THEIR PROPAGATION

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Mountain laurel (*Kalmia latifolia* L.) is coming of age. Beautiful selections have been available since the 1800's, but because of propagation difficulties these and newer selections have been largely ignored until recently. Selection efforts by C.O. Dexter, Sandwich, Massachusetts, in the 1930's, followed shortly by selection and breeding by the Mezitts, Weston Nurseries, Hopkinton, Massachusetts, began to focus attention on this species in the U.S. A.G. Soames simultaneously selected pinks at Sheffield Park, Sussex, England. He presumably also used material originating with C.O. Dexter but obtained through the Arnold Arboretum, as well as with material from the Knap Hill Nursery. Research begun at the Connecticut Station in 1961 on *Kalmia* has not only demonstrated a wide range of desirable horticultural traits in mountain laurel but has also shown that many of these characteristics are simply inherited, and thus can be readily manipulated by the breeder (2,4). New cultivars have recently been named and released and new selections are anticipated, including five that are described here for the first time. More efficient means of vegetatively propagating them are evolving.

Seed propagation. Seed propagation is slow, but tried and true, and may still be the best means for multiplying the normal or wild-type as well as some selected forms that breed true-to-type. Self-pollination is not recommended because of

poor seed set and inbreeding depression. Controlled crosses between different selections of each of the following kinds should yield seedlings that are true for the same trait (4):

K. l. f. *myrtifolia* — miniature
K. l. f. *angustata* — willow-leaved
K. l. f. *polypetala* — feather petal
Cut corolla of 'Shooting Star' type
Reduced corolla of 'Bettina' type
Red — e.g. 'Ostbo Red' × 'Nipmuck'
Deep pink — e.g. 'Pink Charm' × 'Sarah'
White — e.g. 'Stillwood' × near white

In addition, open-pollinated seed of the various banded (*K. l.* f. *fuscata*) types, including 'Bullseye', 'Carousel', 'Fresca', 'Freckles', and 'Goodrich', should produce banded types among at least 50% of the offspring.

A method to mass produce hybrid *Kalmia* seed without making controlled crosses has been demonstrated (2). The desired parent plants (different *K. l.* f. *myrtifolia* seedlings, for example) are planted together in a block. Just before the flowers open the plants are enclosed with insect-proof screening. When the flowers open, a bumblebee introduced into the cage will cross-pollinate the flowers over the bloom period of about two weeks. If the bee should die, a second is used.

Although small in size, mountain laurel seed is long-lived. Kept dry and refrigerated it will remain viable for up to 20 years (5).

Cuttings. Mountain laurel has been successfully propagated by softwood cuttings taken at the end of the flowering period, by greenwood cuttings in mid-summer, by fall cuttings from September through November, and by early winter cuttings taken about January 1. More consistent success in rooting has been obtained with fall cuttings but, because of inadequate chilling, they often fail to break dormancy the following spring, resulting in little growth the first year. An advantage to summer cuttings is that after rooting in the fall, they can be chilled the following winter and then flush normally in the spring. Conversely, January cuttings have already had adequate chilling so that they break dormancy in the spring about the time or shortly after rooting.

Williams and Bilderbach (8), under their conditions, found no significant difference in the rooting of cuttings stuck in humidity cases vs. open mist benches, although the misted cuttings were "harder" looking. My experience and that of several other growers is that humidity chambers are superior to mist for rooting mountain laurel.

Auxin treatments such as 4.5% IBA in talc, 2,500 to 5,000

ppm liquid dip of IBA and NAA, and 1,000 ppm 2,4,5-TP in talc reportedly aid in the rooting of cuttings (1,7). However, my experience with these materials on numerous clones has not confirmed an overall positive effect. On the other hand, there clearly is a notable difference among clones in ease of rooting. 'Pink Surprise', 'Pink Charm', 'Nipmuck', and 'Quinnipiac' are relatively easy-to-root (70 to 95%), whereas 'Ostbo Red', 'Goodrich', and 'Stillwood' are difficult-to-root (<50%) (3).

Tissue Culture. Micropropagation of mountain laurel in sterile culture was described by G. Lloyd and B. McCown in 1980 IPPS Proceedings (6). At least three commercial nurseries have been successful in producing plants in sterile culture (Briggs Nursery, Olympia, Washington; Knight Hollow Nursery, Madison, Wisconsin; and Weston Nurseries, Hopkinton, Massachusetts). Tissue culture will likely become a more reliable, speedier, and perhaps economical means to mass produce selections in the future. It should also expedite the multiplication and testing of new selections.

New Cultivars. A register of all *Kalmia* cultivars is being prepared and should be available from the author by the end of 1983. Presently, there are about 25 named cultivars of *Kalmia latifolia*. There are also 5 unique new selections from the breeding program at the Connecticut station. They include the first named miniature (*K.l.*f. *myrtifolia*) mountain laurel, 3 distinct selections of banded (*K.l.*f. *fuscata*) forms and a red-budded selection that opens a deep pink to near red color.

'Elf' — Selection from a cross of miniature plants (*K.l.*f. *myrtifolia*) made in 1976. The foliage and habit is characteristically ⅓ to ½ normal size with the flowers somewhat less reduced. The light pink flower buds open near white. Cuttings root more readily than those of most selections.

'Bullseye' — The open flowers have a broad, purplish-cinnamon band of pigmentation on the inside of the corolla with a white center and white edge. It is a type of banded laurel, *K.l.*f. *fuscata*. This plant was selected from a cross made in 1972 between the Bristol Nursery banded plant and a red-budded seedling selection.

'Carousel' — The open flowers have an intricate pattern of bright purplish-cinnamon pigmentation on the inside of the corolla. It is a banded (*K.l.*f. *fuscata*) form selected from a cross made in 1972 of a banded plant similar to 'Goodrich' and a red-budded seedling selection.

'Freckles' — The open flowers have ten distinct pigment marks, purplish-cinnamon in color, on the inside of the corolla at the level of the anther pockets. It is a banded (*K.l.*f. *fuscata*) form selected from an F_2 population of a banded plant with a red-budded selection. The crosses were made in 1963 and 1969, respectively.

'Sarah' — The flowers are brilliant red in bud, similar to 'Ostbo Red', but pink-red when open. The flower color is eye catching in bud and open. It was selected from a 1974 cross of two intensely colored plants; the male parent was 'Pink Charm'.

Contact the author for availability of cutting material and sources of plants. Although they have not been tested over a wide geographical range, it is quite likely that some will be adaptable to the more southern areas.

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MYCORRHIZAE IN CONTAINER PLANT PRODUCTION

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Mycorrhizae refers to a symbiotic association between a nonpathogenic or weakly pathogenic fungus and living cells of plant roots. Most all plants of the world are mycorrhizal, although wetland rice, cypress, and many plants in the Chenopodiaceae and Cruciferae are not mycorrhizal (1,2,6).

Mycorrhizae are categorized into three major groupings: ectomycorrhizae, endomycorrhizae, and ectendomycorrhizae. Ectomycorrhizae are predominantly found in association with coniferous trees, and the fungi that form them have aboveground mushroom fruiting bodies. These disseminate small air-borne spores. They form a thick covering on roots called a mantle, which is essentially an accumulation of mycelium. The most common form of endomycorrhizae are vesicular-arbuscular (VA) mycorrhizae, which form on a majority of the