

Container Production of Herbaceous Perennials

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This is the third in a series of articles on the container production of herbaceous perennials. Part of James Locklear's M.S. degree program involved a thorough search of literature on this subject. Beginning with the December, 1981 BPI News, a report of his findings will continue in this and subsequent issues.

STEM CUTTINGS

Propagation by stem cuttings is an important means of increase for certain perennials (see list at the end of this article). The major applications of this method are with species which are not easily propagated by seed for one reason or another, and with certain named cultivars which need to be propagated asexually. While both cuttings and division will produce plants that are "true-to-type," cuttings are a more efficient means of asexual propagation. Cuttings may also produce more vigorous plants with less disease problems than divisions.

The basic procedure involved in this type of propagation is to cut a portion of a stem from a

parent plant and place it under the proper conditions to induce adventitious root formation. Once rooted, the former cutting will become capable of living as an independent plant. Although this is a basically simple operation, there can be considerable differences in the techniques needed to root cuttings of different perennial species.

For many species, the type of shoot growth used for the cutting has an influence on the ease with which cuttings will root. Generally, cuttings taken from the first flush of growth in the spring (basal cuttings) root more easily than tip cuttings taken in mid-summer. For other species, rooting is best if cuttings are torn, not cut, from the main stem, leaving a heel of tissue from the stem still attached. Some of the older books on perennials, such as **Contemporary Perennials** by R.W. Cumming and R.E. Lee, are good sources of this type of information.

The length of time required for rooting varies with the plant and the condition of the stem. Purple Loosestrife (*Lythrum*) may root in a week, whereas other species may take a month or longer. Some species are also more difficult to root than others, and differences can even exist between the rooting ability of cultivars of the same species.



Cuttings of certain species will root much more easily and uniformly if treated with a root-promoting substance such as IBA or NAA. However, while these compounds may improve the rooting of difficult-to-root plants, there is disagreement over whether they are necessary for the majority of perennials. Some growers use them, while others find them unnecessary. Rootone F and Hormodin #1 are two formulations named by propagators to improve the rooting of stem cuttings of herbaceous perennials.

While there are a number of considerations in this type of propagation, the most important in terms of successful rooting appears to be the time of year that the cuttings are taken. As mentioned, most plants that are propagated by stem cuttings will root well if cuttings are taken in the spring when plants are sending up new growth and are about 6-8" tall. Another rule-of-thumb is to take cuttings of spring-blooming species in mid-summer and later-blooming species in May or June.

Many growing operations may have difficulty finding time in the spring to take stem cuttings. To get around this problem, cuttings could be taken in the winter from stock plants forced from dormancy in the greenhouse. This would involve either digging dormant plants from the field in the late fall and storing them at around 36°F, or, if outdoor conditions permit, digging them just prior to bringing them indoors for forcing. Container-grown plants could also be brought in from over-wintering structures for this purpose.



Such plants would be placed in a cool greenhouse (50-55°F) sometime from January to February to promote new growth. High temperatures must be avoided to prevent excessively soft growth. Cuttings would then be taken when the new shoots reach an adequate length, and once rooted, the cuttings would be grown on until they could be finished in the proper size container.

Cuttings taken in the spring or summer could be rooted indoors in the greenhouse or outdoors in coldframes. Some of the old methods of rooting softwood cuttings outdoors in coldframes might be useful for someone just starting in perennials and not wanting to invest in a mist system. An outdoor mist system might also be an alternative, although many established operations have mist benches indoors in greenhouses. The type of facilities required would depend largely on the numbers of plants to be propagated by this method. If the numbers of plants needed were too small to justify the expense of a mist system, then it may be more feasible to simply purchase plants propagated by stem cuttings from wholesale growers.



In order to produce plants from cuttings, a source of these cuttings is needed. Maintaining a good stock block may be necessary, particularly if plant availability fluctuates from year to year. In order to produce high quality cuttings that will give good rooting percentages, it is important that these stock plants be maintained in excellent condition. In some

cases, reserving a certain portion of each year's crop as propagating stock can help reduce disease and vigor problems associated with aging stock plants.

PERENNIALS THAT CAN BE PROPAGATED BY STEM CUTTINGS

Achillea spp. (Yarrow)
Anthemis spp. (Golden Marguerite)
Arabis spp. (Rock-Cress)
Armeria spp. (Sea-Pink)
Artemisia schmidtiana (Silver Mound)
Asperula odorata (Woodruff)
Aster spp. (Hardy Aster)
Aurinia spp. (Alyssum)
Campanula spp. (Bellflower)
Cerastium spp. (Snow-In-Summer)
Ceratostigma plumbaginoides (Plumbago)
Chrysanthemum x morifolium (Hardy Mum)
Delphinium spp. (Larkspur)
Dianthus spp. (Pinks)
Dicentra spectabilis (Bleeding Heart)
Erigeron spp. (Fleabane)
Geranium spp. (Cranesbill)

Gypsophila spp. (Baby's Breath)
Heliopsis helianthoides (Heliopsis)
Iberis spp. (Candytuft)
Lamium maculatum (Dead Nettle)
Lavandula angustifolia (Lavender)
Linum perenne (Flax)
Lysimachia spp. (Loosestrife)
Lythrum virgatum (Purple Loosestrife)
Mentha spp. (Mint)
Monarda didyma (Bee Balm)
Myosotis spp. (Forget-Me-Not)
Nepeta x faassenii (Catmint)
Pachysandra terminalis (Pachysandra)
Penstemon spp. (Beardtongue)
Phlox subulata (Creeping Phlox)
Physostegia virginiana (False Dragonhead)
Platycodon grandiflorus (Balloon Flower)
Santolina Chamaecyparissus (Santolina)
Saponaria spp. (Soapwort)
Sedum spp. (Stonecrop)
Solidago spp. (Goldenrod)
Teucrium chamaedrys (Germander)
Thymus spp. (Thyme)
Veronica spp. (Speedwell)
Vinca minor (Myrtle)