

REVITALIZATION OF HERBACEOUS PERENNIALS BY “REPROPAGATION”

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The word “repropagation” is not found in the dictionary and it is not normally used in the nursery industry. The word “repropagation” may be used to describe a technique useful in revitalizing plants that have been under stress as a result of improper shipping, packaging, storage, or from having been under poor growing conditions.

The principles of repropagation for herbaceous perennials have been in use for over a half century in the nursery industry. An early application was when many plants were shipped to the U.S. by ocean freight from Europe and other countries. In addition to the long trans-ocean crossings there were always delays during the inspection at port of entries and delays with domestic transportation. Therefore, the amount of time plants and plant parts were under shipping conditions varied from several weeks to a month or more. Even cross-country shipments of plants and plant parts had problems because of poor shipping conditions and delays. By the time shipments arrived at their destination, the plants and plant parts were often covered with mildew, or parts of them were rotting. To salvage those plants that exhibited life, repropagating techniques were employed.

In recent years, the need for applying repropagating practices have surfaced because of an increased number of summer-dug plants being shipped from south to north during the growing season. Rots and mildews are not infrequent despite efforts to control them with fungicides, bacteriacides, and improved shipping containers. Although our transportation systems have improved, over-heating — especially in parcel-service trucks and on loading platforms — is not uncommon. For security reasons the trucks are often kept locked and when parked in full sun, temperatures within these trucks often reach 125 to 150°F within an hour or two. Because many of the plants and plant parts are packaged in plastics, the humidity surrounding the plant tissues is high which makes conditions ideal for the growth and development of rot and mildew causing organisms. Although many nurseries dip their plants in fungicides and bacteriacides prior to packaging, these chemicals do not provide permanent protection. Therefore, knowing the principles of repropagation can be beneficial for salvaging

shipments of plants that would otherwise be lost. This is especially important if they are one-of-a-kind.

Repropagation can also be used as growing storage. Bare-root herbaceous plants that have been shipped in the spring according to schedule, but cannot be planted because of weather conditions, can be stored under repropagating conditions. The repropagation of these plants will result in heavier root systems and avoid the problems often associated with spring cold storage of plants that have broken dormancy.

To prepare plants for repropagation, it is important to remove all decayed and damaged tissues. Feeder roots must be pruned closely and occasionally totally removed. The tops must be cut back hard, and frequently they must be pruned off. After all pruning is complete, the roots must be washed thoroughly under pressure to remove all dirt. The propagating bench or boxes should be at least 6 in deep and the bottom should have widely spaced narrow boards covered with mesh for optimum drainage. They should be filled with new horticultural grade perlite; it is sterile (heated to 3300°F) and will not hold excess amounts of water. The roots should be planted at their original planting depth in the perlite. To reduce stress, a light shade should be applied over the beds or boxes and the roots should be watered in lightly. The perlite should be kept moist but not wet. Although a greenhouse is often preferred, repropagation can be done outdoors providing the repropagating area is protected from heavy rain by shading with saran shade cloth or screen.

The perlite should be irrigated lightly only when necessary; there is no need to apply fungicides because the perlite is sterile and drains freely. Generally a light application of a low-nitrogen, water-soluble fertilizer is recommended within 1 week after planting. Within 3 to 5 weeks, depending on temperatures, the plants will have developed a large mass of feeder roots, the tops will have started to grow and they are ready to be planted.

Certain species may require special handling procedures. For example, oriental poppies should have all feeder roots and tops removed then placed 2 to 3 in apart in 3 in wide rows. Daylilies should have all fleshy roots over one year old removed, feeder roots pruned to within 2 to 3 in, tops cut to within 4 to 6 in and spaced 4 to 6 in apart in 5 to 6 in wide rows. Root and top growing characteristics of each species must be considered.

Since the facilities and the basic procedures are the same for normal propagation, repropagation requires no additional outlay. This is not presented here as a new method but as a