Root Cuttings: a Novel Approach to Producing Plants©

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INTRODUCTION

The production of plants via root cuttings has been around for a significant portion of the history of plant production. A number of species can be propagated via this method (Tables 1 and 2). In the early stages of plant production as a standard practice root cuttings were an essential part of the process. Casual observation easily shows that severed root pieces of many plants would often give rise to adventitious shoots which then result in a new plant arising from the roots buried in the ground. Careful removal of those plants could at times repeat the process and even more plants could be produced. This practice does not require sophisticated techniques or materials and was pretty much a facet of nature that had been streamlined by humans.

Table 1. Woody plants suitable for production from root cuttings.

Aesculus parviflora	*Hydrangea paniculata*
Ailantus sp.	*Hypericum calycinum*
Amelanchier sp.	*Lagerstroemia* sp.
Albizia sp.	*Mahonia* sp.
Arailia sp.	*Malus* sp.
Berberis sp.	*Passiflora* sp.
Brugmansia sp.	*Philadelphus* sp.
Campsis sp.	*Populus* sp.
Carpinus sp.	*Prunus* sp.
Catalpa sp.	*Pyrus* sp.
Chaenomeles sp.	*Rhus* sp.
Clerodendrum sp.	*Robinia* sp.
Clethra sp.	*Rosa* sp.
Comptonia sp.	*Salix* sp.
Cotinus sp.	*Solanum* sp.
Eleutherococcus (syn. *Acanthopanax*) *sieboldianus*	*Sophora* sp.
	Spiraea sp.
Euonymus sp.	*Symphoricarpus* × *chenaultii*, 'Hancock'
Fagus grandifolia	*Syringa* sp.
Fagus sylvatica	*Viburnum* sp.
Ficus sp.	*Wisteria* sp.
Forsythia sp.	*Ulmus* sp.

Table 2. Perennials suitable for production from root cuttings.

Acanthus sp.	*Echinops* sp.
Achillea sp.	*Eryngium* sp.
Alcea rosea	*Eupatorium* sp.
Amsonia sp.	*Gaillardia* sp.
Anchusa sp.	*Kalimeris* sp.
Aster (including but not limited to *Almutaster, Canadanthus*, *Callistephus*, *Doellingeria*, *Eucephalus*, *Eurybia, Ionactis*, *Oligoneuron*, *Seriocarpus*, *Symphytrichum*)	*Heliopsis* sp.
	Limonium sp.
	Symphytum sp.
Anemone hupehensis	*Papaver orientale*
Aenome × *hybrida*	*Phlox paniculata*
Asclepias sp.	*Rumex* sp.
Campanula sp.	*Stokesia laevis*
Dicentra eximia, *Lamprocapnos* (syn. *Dicentra*) *spectablilis*	*Yucca* sp.

As time went by some enterprising individuals actually dug up root pieces and moved them to a more hospitable environment where greater care and watering could be maintained. With the advent of glass for cold frames and greenhouses root cuttings could be shortened and placed in humid environments in pots and forced into producing shoots much as what was done in the natural environment. However artificial manipulation was more efficient and yielded a greater number of plants.

Carl Orndorff (1987) gives a very good accounting of how the process works with a range of plants. While there were some minor developments not much has changed with respect to root cuttings. However, Scott Skogerboe of Fort Collins Nursery in Fort Collins, Colorado has come up with a means of simplifying matters and at the same time increasing efficiency.

He takes a plug tray and fills the plugs with soil and wets it down thoroughly. He then takes a second tray of exactly the same size and shape as the first tray and places in the plugs plants that he intends to grow on as well as propagate from root cuttings at a later date. In essence this is a double-decker tray system with plants growing in the upper tray and rooting into the lower tray (Fig. 1). He leaves the plants in place for an entire growing season. Come spring he then severs the roots of the upper tray from the soil of the lower tray. He can then take the upper tray and pot those plants on into the regular production cycle. He then retains the lower tray and waters and fertilizes regularly, the root pieces that have grown into the soil of the lower tray from the upper tray then produce new shoots and grow in place as though they have been potted into the tray. Once they achieve a specific size he then can take that tray and repeat the process with a newly filled lower tray, where the upper plants again grow roots into the soil of the lower tray. The process can be repeated over and over without ever having to cut or handle new root pieces to start anew. This is vastly more efficient than the old method of individually cutting root pieces to size and maintaining orientation and extra care till new shoots are formed. The residual roots in the lower tray are largely new fibrous roots along with the much larger main roots that go all the way to the surface of the tray. Having that extra root mass greatly accentuates the formation of new shoots for the next generation.

Fig. 1. Scott Skogerboe of Fort Collins Nursery in Fort Collins, Colorado, has come up with a double-decker tray system with plants growing in the upper tray and rooting into the lower tray.

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Literature Cited
Orndorff, C. 1987. Root pieces as a means of propagation. Comb. Proc. Intl. Plant Prop. Soc. 37:432-435.