

Grafting Versus Rooting of Fruit and Flowering Trees®

Carl Sherman

Chestnut Hill Tree Farm Inc., 15105 NW 94th Ave, Alachua, Florida 32615 U.S.A.

INTRODUCTION

The progress in plant improvement would have been of little significance without the process of invention and development of plant propagation techniques (Hartmann et al., 2002). It is our challenge to seek and learn new techniques for propagation of plants.

Chestnut Hill Tree Farm propagates its own plants for nursery production. We currently propagate seedlings, rooted cuttings, as well as graft many fruit and flowering trees. We have trialed and developed many new cultivars of flowering and fruit trees for the low chill environment of the U.S. Gulf Coast and southeast Atlantic Coast. We have tried propagating many different species. Some examples are chestnuts, persimmon, live oak, and magnolia. Sometimes there have been established methods but in most cases we have tried many different methods.

DISCUSSION

When propagating any new plant variety we should determine the best methods for propagation based on success and efficiency (Hartmann et al. 2002). Many times traditional methods are used because they have proven success or there is limited information about alternative ways of propagation. Many propagation methods are available for trial and sometimes new methods can prove to be more efficient or successful. It is important to challenge oneself to break from tradition and try new approaches. The following are a few examples of how we have looked at alternative methods of propagation.

Prunus campanulata (Taiwan cherry) is a low chill, flowering cherry for the Southeastern U.S.A. We have developed cultivars that have been grown successfully as far south as West Palm Beach, Florida. Taiwan cherry is a good example of looking at multiple propagation methods. Traditionally cherry trees have been propagated by T-budding the desired cultivars on the preferred rootstock (Hartmann et al., 2002). We found that this worked very well when using Taiwan cherry seedlings as a rootstock. We also found that early season softwood cuttings worked well under high mist regimes. Cuttings that root well and grow well on their own roots are much more cost effective for us to grow. Therefore this would be our propagation method of choice.

Prunus cerasifera 'Saint Lukes Plum' is a low-chill purple leaf plum that has been grown as far south as Daytona Beach, Fl. It holds its color throughout the summer and breaks dormancy in February with tiny white flowers. We tried for years to grow this on its own roots. We tended to have weak slow-growing trees. Last year we found that grafting this tree onto the low-chill rootstock 'Florida Guard' (*P. persica*) increased its vigor two-fold. We now have a viable purple-leaf plum for Florida.

Cold-hardy citrus such as Satsuma Group (*Citrus unshiu*) are traditionally T-budded on trifoliolate rootstock (*Poncirus trifoliolate*). This works well until there is a hard freeze in north Florida or the gulf coast. The traditional method of mounding soil around the base of trees to protect from freezing can work but many times the

tree is killed to the graft union. We found that Satsuma Group can be rooted via cuttings (own rooted); if frozen back to the ground it will regrow rapidly to a bearing tree rather than be killed to the graft union. This nontraditional method has proved very valuable to the homeowner.

Cornus florida 'Weaver White' is a large-flowered dogwood that has shown increased resistance to powdery mildew and anthracnose. This dogwood selection was found at the University of Florida and we have observed it to be more vigorous than any other dogwood for Florida. Traditionally dogwoods have been grafted but we have had very good success rooting 'Weaver White'. This has been done with early season, semi-hardwood cuttings. The rooted cuttings are difficult to overwinter and must be forced before going dormant. 'Weaver White' is quite vigorous on its own root system, and rooting via cuttings is our preferred propagation method.

CONCLUSION

The choice to propagate a new or different plant brings many opportunities. To find the best method of propagation one must open their mind to the many different ways plants can be propagated. The common or traditional method should be questioned and improvement sought.

LITERATURE CITED

Hartmann, H.T, D.E. Kester, F.T. Davies, Jr., and R.L. Geneve. 2002. Plant propagation — Principles and practices. 7th ed. Prentice Hall, Englewood Cliffs, New Jersey.

The Feasibility of Utilizing Tobacco Greenhouses as Propagation Facilities for Ornamental Plants[®]

Gregory K. Eaton

Department of Horticulture, Virginia Tech, Blacksburg, Virginia 24061 U.S.A.

INTRODUCTION

Cash receipts for tobacco statewide have decreased from \$190.8 million in 1997 to \$132.1 million in 2000, and fallen in percentage of all agricultural commodities in Virginia from 8% to 6% over the same period. During the same period from 1997 to 2000, cash receipts for greenhouse, nursery, and forest products in Virginia have increased from \$160.2 million to \$179.4 million and increased as a percentage of all commodities from 7% to 8%. Consequently, ornamental horticultural crops have displaced tobacco as the most valuable cash crop in Virginia, accounting for 24.5% of all crop cash receipts, compared to 18% for tobacco in 2000 (VASS, 2000).

Farmers in southern Virginia are highly dependent on tobacco income, which accounted for nearly 90% of total value of agricultural production in 1996 (Gale et al., 1997). It would be desirable to establish supplemental and/or alternative agricultural opportunities that would keep Virginia family farms in operation, allowing them to maintain their livelihood while strengthening the agricultural economy and sustainability of communities of this region (CAST, 2002).

This study focuses on the feasibility of utilizing idle tobacco greenhouses as propagation facilities for the production of ornamental woody plant liners. The market for liners of high quality remains strong, and liner production can bring a high net