

# Gulf Coast Fruit Study Newsletter

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## **Plant Grafting Techniques**

Learning how to graft plant material empowers those interested in successful fruit production for their unique location. The tools are quite inexpensive and the techniques simple to master. Building your own tree is a far cheaper and definitive process than purchasing one from a distant plant nursery that may cheerfully sell you a cultivar on a root system with neither part adapted to your particular soils and climate. When the plant inevitably fails, they are happy to sell you a replacement and the cycle will repeat itself. Many fruit tree interest groups and individual hobbyists in your local area will be pleased to supply you with both advice and proven plant material. In many cases you can grow your own rootstock from seed, generate rooted cuttings, or purchase rootstock from commercial plant nurseries. You can also perform interesting plant experiments without a degree in horticulture and even create plants bearing multiple distinct cultivars of the same fruit and extend the growing season for your area. The first two articles that follow were supplied by Dr. A.J. Bullard, who is a retired dentist from North Carolina, and who has developed some interesting plants as a self-educated hobbyist to give you an idea as to what is possible.

## *Next Gulf Coast Fruit Study Meeting*

Our upcoming meeting is at **7:00 PM** on **Thursday, February 14**, with a program devoted to citrus and other grafting techniques with door prizes.

### **Contact Us!**

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## **Playing With Elaeagnus**

I have found that the correct spelling of this plant is challenging to most growers. I maintain three cultivars and each ripens in a different season. The taste is similar – tart but sweet with a hint of astringency. I like to eat a handful as fresh fruit, and they are cherished for jams and jellies. Almost before I could read, I was fascinated by nursery catalogs selling 5 in 1 apple trees. Years later, I learned the wonders of grafting. A useful technique from one discipline may often be applied in an entirely different field and be equally effective. Some years ago I wondered if I could create a 3 in 1 **Elaeagnus** plant which would effectively bear over a much longer period than any individual cultivar – even into March in zone 8A. I chose my *E. pungens* as the rootsystem for a multi-grafted plant, as it bloomed in the fall and ripened its fruit in late March, fixing its own nitrogen. Next, I knew that the goumi, *E. multiflora* bloomed and ripened its fruit in late spring. My third candidate was Autumn Olive – *E. umbellata* which blooms in spring and ripens fruit in August and September here, and looks like huge mistletoe clumps among the bare branches of the other two.

(continued)

## Playing With *Elaeagnus* (continued)

Further observations indicate that evergreen species grafted on kindred deciduous species seem to retain their genetic predisposition to remain either deciduous or evergreen – another wonder of nature. Using a combination grafted plant as I have described provides a great benefit in a space-challenged yard. It not only provides fresh fruit and fruit for preserves, the bird population is pleased.

## Growing *Cudrania*

The **Chinese Melonberry** – *Cudrania tricuspidata* or **Chinese Che** - is one of five species from China and Korea but is the only one of importance to fruit growers in the United States. It is a member of the *moraceae* family along with the mulberry, fig, osage orange and many more. In China it was used as a substitute for silkworm forage when mulberry leaves were in short supply. We use it here as a fresh fruit that tastes like watermelon, ripens from August through September and resembles a small, red, osage orange with its convoluted fruit surface. This attractive fruit is never sour, bitter, nor astringent and may reach 1.5 inches in diameter. It is not bothered by heat or by temperatures well below zero, and it grows well even in poor soil. I suspect **Melonberry**, although not a legume, fixes nitrogen like some other members of the mulberry family. In fact, other non-legumes have been shown to be nitrogen fixers such as **Alder** and **Elaeagnus**. *Cudrania* is generally regarded as a dioecious fruit but, like osage orange and mulberry, male trees can revert for a season to two, and bear fruit. An article in the 1936 *Journal of Genetics* depicts this phenomenon in mulberries. In fact, the converse can also occur with female trees. This same phenomenon can occur with persimmons and even in the rare **Florida Torreja**. The term used to describe this transformation is polygamo-dioecious. I gave up trying to understand the complexities of these apparent self-survival ploys years ago. With this background information, you too can be a successful **Melonberry** grower.

First, experience teaches that *cudrania* should never be grown on its own roots. Although mature trees seldom have thorns, the copious root sprouts can form a cage of thorns as far as 40 feet from and surrounding the parent tree, all equipped with vicious thorns capable of penetrating tires and thick leather soles. Nature equips some juvenile root sprouts with thorns as protection from predators, and these work to perfection with this plant. This problem is avoided by grafting *cudrania* to an alternate and compatible rootstock. After many experiments, I found that osage orange, which does not sucker, is an excellent choice. My experience led some commercial nurseries, such as **Edible Landscape**, to offer such grafted trees. I found that the best results occurred by forcing the rootstock to become a single vertical trunk as high as 9 feet and then allowing limb development to occur above that level and to graft one male and two female plants on three alternate limbs. After 10-12 years, I have some overgrowth of scion on rootstock which will not be a problem for most growers' lifetimes. An added benefit to all of this is that the naturally cascading branches can be pruned back with a "bowl style haircut" to about 5-6 feet from the ground facilitating easy mowing and harvesting the fruit. I feel with these strategies in mind, a unique fruit that is tasty and heavy bearing will be possible for many years. The tree, itself, is quite attractive. I have found that no sprays are necessary and the fruit size is a little beyond the eating capability of most birds. I have tried **Che** supplied by eight different sources and found the trees and fruit essentially the same, so there seems to be no preferred cultivar.

## Remodeling an Unproductive or Poor Quality Cultivar

It is often wasteful of time and energy when confronted with a failed cultivar to simply cut the tree down and plant a new one. While the fruit may have been poor, or the branching pattern undesirable, a vast factory of root structure remains available to rapidly re-grow a new bearing tree with simple grafting techniques. Some are shown in the photos below. One can cut the tree flush to the ground, allow root suckers to arise and select one or more for early whip and tongue or cleft grafts (Figure 1). Alternatively, to be sure you are dealing with strong vigorous suckers, wait to make the selection and then use cleft, kerf, bark inlay or whip and tongue side grafts (Figure 2). Finally, you can insert the grafts much higher on the original tree by cutting the trunk higher before inserting cleft or kerf grafts or on stubs of three or four selected branches (Figure 3).



Figure 1



Figure 2

Remodeling of a former large pear tree by grafting different scions on *P. calleryana* root suckers. Whip & tongue (left) and bark inlay graft (right) on the root sucker at the arrow. From the left, Nachez, Carrick, Tennousi and both Rigdon and Acres Home



Figure 3