Gulf Coast Fruit Study Newsletter

Volume 14, Issue 1 | Edited By: Ethan A. Natelson, M.D. | August 12, 1999 Meeting

Upcoming Meetings of Interest

- The annual NAFEX Meeting will be held August 4-6, 1999 in Champaign, IL.

Current Meeting:

Want to try some varieties before you buy? Then plan to attend the Harris County Fruit Tasting on **August 12.** We will sample fruit (muscadines, pears, jujubes, pears & pomegranates) by about **5:00 pm** and Dr. Ethan Natelson will give us a report on the NAFEX meeting at about **7:00 pm.** Call 281/855-5600 if you need more info — oh, and bring a pocket knife. We try to slice a lot of the fruit you may want to cut your own fresh.

Contact Us!
Harris Cty Extension Service
2 Abercrombie Road
Houston, TX 77080
Phone: 281/855-5611
Fax: 281/855-5638

Annual Pear Tasting

Most familiar pear varieties found at the local supermarket, such as D'Anjou, Bartlett, Comice, Winter Nelis and Bosc, will not fruit here in Houston because of our lack of winter chill hours (accumulated time between 32 F and 50 F). We usually can expect about 450 chill hours, but this past winter was extremely mild. Signs of lack of chill include delayed and reduced flowers, small and wrinkled leaves and little quality fruit.

Despite this limitation, and the hostile attack of birds, squirrels and some disease problems, such as fireblight, we can grow quality pears here and many of these will be available at the meeting for inspection, tasting and rating. You will see two basic types, the European or soft pear, and the Oriental pear. The latter is crisp and juicy but generally less sweet than the European type. Many of our pears are hybrids of these two general cultivars.

Most of our pears are grown on the *Pyrus calleryana* rootstock. The ornamental Bradford Pear is a calleryana and produces a very large tree with certain varieties. It may also be slow to bear and for this reason many other rootstocks are under evaluation, including dwarfing selections. The goal is a moderate-sized tree suitable for both the small home garden and the larger trellised orchard with characteristics of disease resistance as well as quality fruit production. We believe that we can be successful and need your help to evaluate and rate some of these pears.

Pear Buckle:
Cream until blended 1/4 c. butter (softened) and 1/2 c. sugar. Beat in the following until combined: 1 egg, 1/2 c. milk, 1 c. all-purpose flour, 1 c. whole wheat flour, 2 t. baking powder, 1 t. almond extract, 1.2 t. salt. Turn into greased and floured 9-inch Pyrex baking dish. Top with 2 layers of fresh Bartlett pears (or equivalent cooking pears), sliced and peeled (about 4-5 pears). Top with cinnamon streusel, bake 45-50 min. or until toothpick inserted into center comes out dry. Cut into squares and serve warm.

Cinnamon streusel:
Combine 1/2 c. sugar, 1/2 c. flour, 1 1/4 t. ground cinnamon. Using a fork, cut in 1/4 c. butter (softened) to get an even, crumbly mixture. Bake at 400 degrees for 20 minutes. Decrease to 350 degrees for 40 minutes. Test for doneness with toothpick. Continue cooking if not quite ready.

Muscadine Grapes (contributed by Bill Adams, CEA—Horticulture)

Most bunch grapes are a disaster in the Houston area. You can grow a few American hybrids like the Munson varieties, and the University of Florida has produced a few varieties with resistance to Pierce's Disease, but most of these varieties are either poor producers or the grapes are barely superior to wild Mustang grapes.

Muscadines offer the best potential in the Houston area. They are generally resistant to Pierce's Disease, though I believe growers have found some infection of muscadines in heavily planted areas. If you are not familiar with this disease, it is the single most limiting factor in the production of grapes in Texas. It's a bacterial disease that plugs up the vascular tissue, eventually causing marginal leaf burn, dieback and death of the vines. It is probably insect vectored and we have lots of wild grapes to serve as hosts.

Muscadines don't produce large bunches but they produce lots of clusters. In fact, they are typically more productive per acre than bunch grapes. Wine made from muscadines can be quite good but it takes generations to create a demand for wine from specific varieties like Merlot or other European "Vinifera" bunch grapes.

So far, they have been more popular for fresh juice, jams, jellies and of course for fresh use. I used to tell people they tasted like "cheap perfume" because of the esters and strong flavors, but that is being a little unfair. There aren't any good seedless varieties yet and the skins can be a little tough, but once you've tried a flavorful muscadine, the so-called "table grapes" like Thompson Seedless will seem pale by comparison.

Muscadines also have beautiful, glossy-green leaves that turn bright yellow in the fall. They would make spectacular arbor plants even if they didn't produce fruit. To insure good production, some pruning is in order. In some ways, muscadine pruning is easier to explain than bunch grape pruning. You don't have to be planning for renewal canes all the time. The main fruiting arms are left indefinitely. Smaller twigs are pruned back to 2-3 bud spurs. There are lots of them, however; muscadines can cover your house in a couple of years. Also, muscadines are a bit puny the first year. After that, look out; they grow like crazy.

Muscadines are typically spaced 10 x 20 feet, though 12 feet in the row may be advisable with the more vigorous varieties. If female varieties are planted, they should have at least two self-fertile varieties within 50 feet (at least one each direction at 25 feet or less). Slow release fertilizer tablets are good to use the first year — two to three 20 gram pellets per plant. In succeeding years, using enough fertilizer to insure 3-4 feet of growth should be adequate.

Varieties on Trial at the Extension Center — berries ripen late July to September

FRY: This is a bronze, female variety—up to 1 1/4 inches in diameter. It is a very good quality berry, up to 20% sugar and it is productive. Berries come off early to mid-season.

DARLENE: Bronze, female up to 1 1/4 inches in diameter. Up to 24% sugar with a dry stem scar that improves its fresh keeping qualities.

ISON: Black, self-fertile variety with 20% sugar. Dry scar and very productive. Considered a good wine and juice/jelly variety. One of the best in our trials. Early to mid-season.

JANEBELL: Another bronze 1 1/8 inch diameter grape with 22% sugar. Self-fertile, large cluster and a dry scar. Mid to late season.

PAM: Bronze grape up to 1 1/4 inch diameter. This female variety is uniform ripening with 22% sugar and a dry scar. Ripens mid-season.

SWEET JENNY: Bronze, female variety with huge berries up to 1 1/4 inch in diameter. Very productive vines with large berries and up to 24% sugar. Early to mid-season.

SCUPPERNONG: Old, old female bronze variety from 1554, discovered by a member of Sir Walter Raleigh's colony in Tyrrell County, North Carolina. Not as big as some of the new varieties but it has a nice juicy pulp and intense flavor. One of my favorites.

The Jujube

The jujube (*Zizyphus jujuba*) is a member of the buckthorn family with many related species in the United States. It is a plant native to Syria. The trees are most widely cultivated in southern Europe and Asia. Seedlings were introduced into the U.S. in 1837, and to the southwest in 1924. The jujube is extremely tolerant of both dry and wet conditions and alkaline soils. It is quite winter hardy, yet seems to require very little chill to set fruit. Trees also bear very early, often in the 2nd year of planting. Once established, the jujube thrives with no particular care and is essentially pest-free. Unlike most fruit trees which flower first, and then leaf out, the jujube has it backwards, fully leafing out before setting a profusion of tiny yellow flowers. In Houston, this is in late March to early April. Most cultivars are self-fertile. The fruits vary in size and shape, with most favored cultivars having an oval or elongated shape. The usually single seed is removed and the fruit can be eaten out of hand (tastes like a bland apple) dried and candied (often labeled as Chinese or Red Dates) and also used in a variety of recipes, including cakes, bread and butter.

There is an annoying drawback to this tree and that is its stoloniferous habit. Most of the preferred cultivars are rooted on wild species and the root suckers may arise 10 to 20 feet from the main trunk. This is not a problem in a mowed yard, but would be in a bed of native plants or other landscaping. Someone needs to explore better rootstocks. It is claimed that the Japanese rain tree (*Hovenia dulcis*) is compatible, but this combination is not sold commercially.

The older named cultivars are Li and Lang. Others include Sherwood, Silverhill (Tigertooth), Sugarcane, So and Yu. Taste is similar among the cultivars but fruit size and productivity vary. Some, such as Silverhill, are more bush-like while Sherwood has a very upright character and may quickly reach 20 feet in height. So has an unusual growth habit with twists and curves to the branches, making it a very attractive ornamental tree.

Sam Powers of Santa Fe, Texas is our local jujube expert. He rates the Lang as the most productive tree and harvests about 150 lbs. of crop each year. This variety is best for dehydrating because it is not as sweet as So, Sugarcane or a pumpkin-shaped variety called GI-762. These three are the best for eating out of hand. Harvesting is done by simply shaking the tree when the fruit begins to turn brown. The ripe specimens fall off easily and can be collected.

Jujube Butter:

Make jujube pulp by boiling peeled fruit in a small amount of water until tender. Press the fruit through a colander to remove the seeds. Mix the pulp with the following ingredients: to 6 pints jujube pulp add 5 pints sugar, 2 t. cinnamon, 1 t. nutmeg, 1/2 t. cloves juice, 1/2 c. vinegar and the grated peel of one lemon. Cook slowly until thick. Boil to sterilize and seal in sterile jars.

Candied Jujubes:

Wash about 3 lbs. dried jujubes. Drain and prick each several times with a fork. In a pot, bring to a boil 5 cups water, 5 1/2 cups sugar, and 1 T. corn starch. Add the jujubes and simmer, uncovered, stirring occasionally, for 30 minutes. Cool, cover and chill overnight. The next day, bring syrup-jujube mixture to a boil and simmer, uncovered, for 30 minutes. With a slotted spoon, lift jujubes from syrup and place slightly apart on rimmed pans. Dry in oven, or in sun for about 2-3 days. Check fruit frequently and turn fruit occasionally until the jujubes are like the dates one sees in the market.

Fig Cultivation in Houston

The fig (*Ficus carica*) is native to eastern Asia and can successfully be grown outdoors in warmer climates. It has several major advantages as a Southern fruit crop, which include low chill requirements (less than 300 hours), ability to grow in heavy clay soils, low maintenance in terms of pruning, thinning or spraying, a wide variety of cultivars to choose from, and lack of pollination requirement. Technically, the fig is a receptacle, or synconium, which contains microscopic flowers. Figs are conveniently divided into two general types: the Adriatic or common figs which are parthenocarpic with all female flowers and do not require pollination, and the Symrna (caducous) figs which do require pollination by a specific fig wasp (*Blastophaga psenes*). This process of pollination is referred to as caprifigation. Only the former are grown in Houston. Another practical classification is open eye (ostiole) vs. closed eye, emphasizing the feature that allows insects easy access to the interior of the fruit, often making it less appetizing to the consumer. Many figs will produce two separate crops, an early breba crop on last year's new wood and a second or regular crop on the current season's new wood. Fully dormant trees are hardy to 12 F—15 F, but actively growing plants may be damaged at 30 F. Figs should be allowed to ripen on the tree and will not ripen properly if picked when immature. They do not store well in the fresh state, but are very stable when dried.

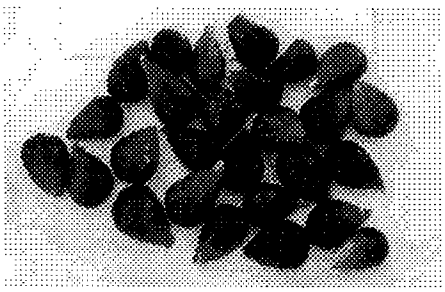
Generally, figs are easily propagated from cuttings and for this reason are not usually grafted plants. Grafting is not difficult, however, and in colder climates it is useful to graft to a cold hardy variety, such as Celeste. For the home gardener, multiple fig cultivars grafted to a single bush are a realistic goal. Pruning is not a requirement for fruit production and is used to control the height in very upright cultivars and the general diameter of the tree (bush). In a multi-caned environment, pruning is used to control the density. In this setting, all canes should not be pruned each year to insure continuous production. There is a natural tendency toward fruit drop, and for this reason, thinning is unnecessary.

The cambium is thick in figs and lends itself to bud grafting or inlay bark grafting, which is best done in mid-spring. Chip budding is used in the fall. Cleft grafting is also successful. It is best to allow the freshly cut tree to stop bleeding its milky white fluid (this takes about 5 minutes) before applying the graft. The grafted scion will usually bear that season. Grafts are best done with dormant scions on a growing plant.

Mulch and a small amount of nitrogen are all that is necessary, along with good drainage. Figs are drought tolerant, but will grow vigorously with a good water supply and a sunny location. Figs are usually disease free, although leaf spot, black spot and rust from various fungal species can be seen in our humid climate. This may be ignored, or the plant sprayed with an anti-fungal agent. Figs are sensitive to nematode damage, but this rarely destroys the plant.

There are more than 600 named fig varieties and of these, many do well in Houston. Most have been named and renamed many times, which is an annoying source of confusion. Furthermore, figs purchased from mail order nurseries are commonly mislabeled. Fortunately, most figs have distinctive leaf patterns (and odors) and an expert can name your plant or place it in a particular group with reasonable accuracy from their examination.

Dr. Stewart Nagle has studied figs extensively in our area and has a monograph available on the subject. George McAfee has successfully grafted most of our local figs. He generally recommends closed-eye figs such as Banana, LSU Purple, Celeste (Malta), Black Mission and Hollier.



Fresh Fig Cookies:

Ingredients: 1 c. white sugar, 1/2 c. shortening, 1 egg, 2 c. all-purpose flour, 1 t. baking soda, 1 t. baking powder, 1/2 t. salt, 1/2 t. cloves, 1 cup fresh figs (peeled and chopped), 1/2 c. chopped walnuts.

Pre-heat oven to 350 F. Cream sugar and shortening and add beaten egg. Sift dry ingredients and blend with creamed mixture. Fold in figs and nuts. Drop by spoonfuls on greased sheet. Bake for 15-20 minutes. Makes 3 dozen.

Pomegranate Cultivation

The pomegranate (*Punica granatum*) is the lone member of the family *Punicaceae* and has no close plant relatives. The fruit has been cultivated since biblical times and is native to Persia. It was brought into Spain around 700 A.D. and imported into the U.S. through both Florida and California in the 1500s. By 1917, the USDA listed 140 separate varieties with a repository in Wolfskill, CA. By 1994, there were less than 50 varieties still on hand, but in recent years, additional cultivars have been imported from Iran and Russia. The fruit has been used for ink, medicinal purposes, jelly, syrup, grenadine flavoring and for eating out of hand.

Pomegranates require only about 100-200 chill hours for flowering and are usually considered to be self-fruitful. The flowers may be of several colors but are usually red. Some varieties are painfully thorned, others are thorn-free. The plant suckers heavily and can be grown as a bush or a tree. Generally, the maximum height is 8-12 feet — slightly more if grown as a tree. If grown as a bush, it is most productive with only 3-4 major canes. Without pruning, the multiple canes that develop are often straight shafts with no fruit. Pomegranates are quite decorative to the landscape.

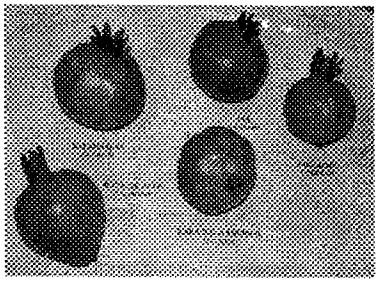
Cultivars are propagated by hardwood cuttings which are easily rooted in the spring. Simply place a 6-8 inch shaft of last year's growth into a moist potting mixture with 3 buds showing above the soil line. The base of the shaft is cut at an angle and may be dipped in rooting hormone solution before placing it into the soil. No particular rootstock is used, although dwarf varieties are known.

The favored climate is hot and dry, although the plant grows well in Houston and up into the warmer parts of zone 7. The major enemy is heavy rain during the maturation process which may lead to splitting. Pomegranates may be picked before they are fully ripened and then stored at room temperature for up to 6 months. This process improves the flavor and sweetness. Scale and leaf spot are prominent in plants grown here and are controlled with dormant oil and copper or sulfur sprays. Fertilization is with a balanced mixture, for example 8-8-8.

The interior of the fruit may be white to red and sweet to sour. There are many named varieties with Wonderful being the best known but far from the best flavored. Eve and Mae are said to be excellent, and I have had the most production from Cloud, a pink, moderate-sized cultivar. Trees with take 3-5 years to come into good production and may continue to bear for 200 years.

Pomegranate recipes usually start with the juice, which should be obtained without badly damaging the seeds and thus releasing compounds which adversely affect the flavor. The ink-like material in the skin should also be avoided. There are several useful techniques for this juice collection:

1. Roll the whole fruit firmly and vigorously to soften it and then poke a hole through the skin and squeeze the fruit, allowing the juice to drip through the hole into a container.
2. Remove the kernels with a spoon and place them in a cloth bag before squeezing them to obtain juice.
3. Cut the fruit in half and ream the innards with a juicer, then filter the material through cloth (this technique releases a great deal of pulp which may be bitter, depending on the variety).
4. Mix equal parts of pomegranate kernels and sugar in a bowl, cover and leave overnight. The next day, boil the mixture in a saucepan while stirring and crushing the kernels with a wooden spoon, careful not to damage the seeds too badly. A small amount of water may be added. The hot mixture is filtered through cloth. If this technique is used, the amount of sugar in the final mixture needs to be adjusted, depending upon the product desired.



Pomegranate Margaritas:

Ingredients: 1 c. sugar, 1/2 c. water, 2 1/2 c. pomegranate juice (see note at end of recipe on making juice), 1 c. tequila (anejo), 3/4 c. fresh lime juice, 10 thin strips or slices of cucumber for garnish. In a small saucepan, combine the sugar and water and simmer over high heat, stirring, until the sugar has dissolved. Let cool completely. In a tall pitcher, combine the sugar syrup with the pomegranate juice, tequila and lime juice. Stir well, fill the pitcher with ice and stir again. Pour into 10 margarita, martini or cordial glasses, garnish each with a cucumber strip, and serve. Making pomegranate juice: cut the pomegranates in half crosswise and use a citrus juicer, preferably a large one, to extract the juice. One large pomegranate yields 1/3 c. of juice, which can be frozen for up to 6 months.

I Saw It on the Net

Genetic engineering in plants has been a reality for several years. Early steps led to changes in the color of flowers and then to the insertion of alternate plant or bacterial DNA into the target cultivar. This introduction of certain features, such as a delay in ripening or resistance to particular pesticides (now specific pesticides would kill all offending vegetation except the desired plant), gave an immediate advantage which might take nature many generations to accomplish. The work has extended to numerous crops, including grasses, soybeans, corn and other vegetables. Interestingly, one of the early promoters of plant modification by genetic research was former Vice President Dan Quayle, even though he was unable to correctly spell potato.

As described in the *Agricultural Research* journal (http://www.ars.usda.gov/is/AR/archive/jul99/fruits0799,htm), Drs. Richard Bell and Ralph Scorza, working at the USDA Kearneyville, West Virginia facility, claim to have introduced a bacterial gene into peach and pear trees to cause dwarfing. Either the rootstock or the grafted cultivar may be dwarfed independently. They plan on introducing a dwarf Bosc pear as the first demonstration of this technique. If such a modification results in a healthy tree bearing full-sized fruit, this would be the holy grail of pomologists and commercial orchardists seeking high density fruit production which is easy to harvest. Can the introduction of low-chill genes be far behind? This type of work will eventually expand the spectrum of where quality fruit may be grown to feed our ever-expanding population. Imagine Harry and David Comice Royal Riviera pears growing in Alvin, TX on a dwarfing trellis system.

And Thanks....

Yvonne Gibbs has temporarily given up her editorial role with the newsletter to spend more time with her family. We thank her for the countless tasks she has accomplished for the Gulf Coast Fruit Study Group, including the preparations for our meetings, pruning work in the orchard, harvesting and preparing the fruit for our demonstrations, organizing our planning committee meetings, and preparation of the newsletter. We hope she can continue to work with the organization as time permits.

Other Recipes of Note:

Fabulously Sweet Pear Cake:

Ingredients: 4 c. fresh pears, 1 c. white sugar, 1 c. chopped pecans, 1 c. packed brown sugar, 1 c. vegetable oil, 2 eggs, 3 c. all-purpose flour, 1/2 t. salt, 2 t. baking soda, 1 t. vanilla extract.

Peel and slice pears thin. Mix sliced pears with white sugar, brown sugar and nuts, and let sit for 1 hour. After sitting, puree pear mixture in a blender. Preheat oven to 350 F. Grease and flour one 9 x 13 inch pan. Add dry ingredients (flour, salt, baking soda) to pear mixture and stir until just blended. Then, add oil, vanilla and eggs. Pour batter into prepared pan. Bake at 350 F for 1 hour and 15 minutes.

Yogurt and Pomegranate Dip with Cilantro:

Ingredients: 1 large ripe pomegranate, 2 c. chilled plain yogurt, 2 scallions (white and tender green, finely chopped), 1/4 c. finely chopped fresh cilantro, fresh mint springs (for garnish). Cut the pomegranate in half crosswise and gently lift out the seeds in sections, being careful not to break them. Pull the seeds off the yellow pithy membrane. In a medium bowl, combine the yogurt, scallions and cilantro. Gently fold in all but 2 T. of the pomegranate seeds. Transfer the yogurt dip to a glass bowl and garnish with mint springs and the reserved pomegranate seeds. Makes 2 1/2 cups.

Pomegranate Jelly:

Ingredients: 4 c. pomegranate juice, 7 1/2 c. sugar, 2 T. lemon juice, 1 small bottle liquid pectin. Measure pomegranate juice, lemon juice, and sugar into a large saucepan and mix. Bring to a boil over high heat and at once add liquid pectin, stirring constantly. Then bring to a full rolling boil and boil hard for exactly 1/2 minute. Remove from heat, skim, pour quickly into hot sterilized jars, and seal. Makes about 11 8 oz. glasses.

Muscadine Hull Pie (thanks to William T. Smith of Laurel, MS):

Ingredients: 2 1/2 cups Muscadine hulls, 1 c. juice from Muscadine hulls, 1 c. sugar, 1 1/2 T. cornstarch, 3-4 drops vanilla, 1 T. butter, pastry for 9-inch lattice-top pie. Remove pulp and seeds from muscadines. Boil hulls until tender in enough water to cover hulls. Drain, reserving juice. Mix sugar, cornstarch, vanilla and juice together. Pour over hulls and let stand 20 minutes. Pour hulls and mixture into pie crust. Dot with margarine or butter. Cover with lattice-top. Bake at 400 degrees for 15 minutes. Reduce heat and bake at 375 degrees for 45 minutes more.

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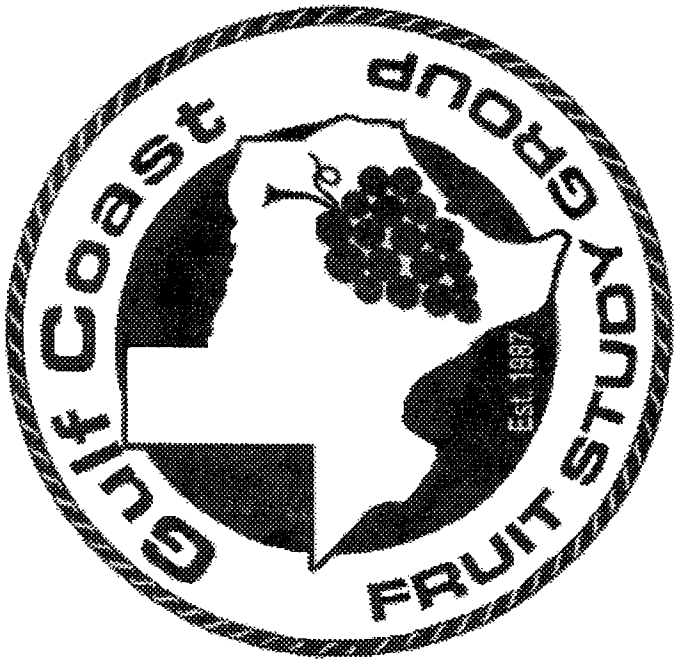

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