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I NOTES OF INTEREST

A. Vegetable Crops Calendar.


II COMMERCIAL VEGETABLES

A. Is there life after ‘Sweet Charlie’?

The short answer is, yes, there will be life after ‘Sweet Charlie’. Recent history of commercial strawberry production in Florida and California has been that varieties change every 5 to 10 years. There is probably more breeding effort on-going with strawberries — both public and private — than ever before. So, as has happened with every variety before it, ‘Sweet Charlie’ will be replaced. The real question is: with what, and when will the replacement take place? I cannot answer these questions with certainty, but I can present some information that should provide you with a better view of the future variety situation.

‘Sweet Charlie’ was planted on 38% of the west central Florida strawberry acreage last season, replacing ‘Oso’ in the number one spot. Growers made the switch primarily because of the earlier fruiting pattern of ‘Sweet Charlie’. ‘Sweet Charlie’ produces the majority of its fruit volume before the end of February — whereas ‘Oso’ produces over half of its fruit in March and April. I believe this early fruiting pattern is key for our industry; we need to produce the bulk of our berries before southern California starts flooding the market with fruit in March.

The acreage devoted to ‘Sweet Charlie’ has risen steadily since it was released in 1992, but it will probably level off after this season and then start to decline as newer varieties from California or Florida become available.

‘Camarosa’, a University of California variety, was released only a few years ago, but it has quickly become the dominant variety in California, replacing nearly all of the ‘Chandler’ acreage in that state. ‘Camarosa’ has a more even fruiting pattern, and produces a firmer berry, than either ‘Chandler’ or ‘Oso’. In our trials at the Dover Center last season, the fruit quality of ‘Camarosa’ was good, but its early season yield (Dec. - Feb.) was only slightly better than that of ‘Oso’. ‘Camarosa’s even, but moderate, fruit production may be more useful in southern California than it is here. Southern California typically has a fruiting season of about six months, while the Plant City/Dover area typically has a four month fruiting season. Ultimately, I think we need varieties that are going to give us a high volume of fruit in the period from late November to mid March.

The University of California breeding program, earlier this year, released four new varieties: one short day variety and three day neutral varieties. The short day variety is named ‘Gaviota’, and it may be an alternative to ‘Camarosa’. According to information released by the University of California, ‘Gaviota’ has excellent fruit quality, especially flavor, and has a compact plant with a cull rate about half that of ‘Camarosa’. Also, it has greater rain tolerance, and is more resistance to mildew and anthracnose crown rot than ‘Camarosa’. On the down side, ‘Gaviota’ is not as adaptable to early planting dates as is ‘Camarosa’. This fact might indicate that it will be a late producer in Florida.

The three new day neutral varieties may be alternatives to ‘Selva’. They are named ‘Aromas’, ‘Diamante’, and ‘Pacific’. According to the University of California, all three are superior to ‘Selva’ for productivity, fruit quality, and harvest efficiency. Two of the three new varieties, ‘Aromas’ and ‘Diamante’, are also less susceptible to spider mites and powdery mildew than is ‘Selva’.

These new California varieties should be available for trial here next season. It appears that ‘Gaviota’ could potentially replace some of our ‘Camarosa’ acreage, and one or more of the new day neutrals may replace our ‘Selva’ acreage. The day neutrals could also be an alternative to ‘Sweet Charlie’ — if they have early and consistent fruit production here in central Florida.

‘Rosa Linda’, the new University of Florida variety, got off to a rough start in its inaugural season (1996-97). Many of the early season fruit from this variety had green tips. Then the hard freeze of January 19th caused a high amount of flower damage, resulting in a lot of misshapen fruit. Despite these difficulties, however, ‘Rosa Linda’ produced the highest amount of marketable fruit among the varieties we tested at the Dover center last season.

‘Rosa Linda’ is susceptible to anthracnose fruit rot, but is less susceptible to Botrytis rot than ‘Sweet Charlie’, and also appears to have some resistance to mildew, mites, and bacterial leaf spot.
There will be a small quantity of virus-free stock available for fruiting fields this season, and it is my hope that if this material performs well, there may be some renewed interest in 'Rosa Linda' as an early season producer of attractive, flavorful fruit.

In summary, there is nothing yet that fills the December through February time period better than 'Sweet Charlie'. I think it will be two to three years before we have a suitable replacement. It will most likely be one of the new California day neutrals, a cleaned up 'Rosa Linda', or one of the advanced selections currently being evaluated at the University of Florida's Dover research center.

(Chandler & Crocker, Vegetarian 98-05)

B. Grower testing program.

This is an update on the program that Tim Crocker and I initiated to evaluate advanced selections in commercial fields.

Before this program was initiated in the summer of 1996, the testing of advanced selections in commercial fields was done in a rather informal manner. Cooperators varied from year to year, and no standard format was used to evaluate grower plots.

Last summer, seven commercial growers in west central Florida were chosen to participate in the program. Six of the farms represented different soil types and growing conditions in the Dover/Plant City area; the seventh farm, which is in Citrus County, and was chosen to represent the northern edge of west central Florida. Each grower was asked to make a four to five year commitment to the program, and to sign a non-distribution agreement. This agreement allows the cooperator to test our material on their farm, but prohibits them from propagating and distributing the material to others — unless they have written permission from the University.

Dr. Crocker and I developed a standard data sheet that each cooperator was asked to fill out once a month during the fruiting season. This data sheet asks growers to rate selections for runnering, plant vigor, amount of misshapen fruit, color uniformity, albinism, fruit size uniformity, susceptibility to water damage, and overall productivity.

Eleven different selections were evaluated in grower trials last season. Unfortunately, we did not have enough plants for all seven cooperators to receive plants of all 11 selections. Also, the quality of the plants we had to distribute was not ideal. The plants were bare-root plants dug from a winter nursery at the Dover center. They generally had small crowns and some blight on the leaves.

Despite our first year problems, we did get some useful information, and were able to narrow the II selections down to six that we think deserve another look.

This season, our cooperators will be looking at seven selections: one of them is a 1992 selection; two are 1993 selections; and four are 1995 selections. The 1992 selection has looked good in the early season, but its fruit may be too soft. The 1993 selections are designated 93-100 and 93-113. The 93-100 has good fruit size, firmness, flavor, and color. It also has a small, manageable bush and a desirable fruiting pattern (similar to 'Sweet Charlie'). The biggest drawback of this selection may be fruit shape. Some of its fruit have blunt ends, and, if it is exposed to adverse weather conditions, it can produce fruit with splits or other malformations.

The 93-113 has a more attractive fruit shape than the 93-100, but has smaller average fruit size, and may actually be better adapted to Citrus County than to the Dover/Plant City area.

The four 1995 selections all produced some beautiful fruit in small plots at the Dover center last season, but we don't have much quantitative data on them yet. Last season was their first year in our observational trial at the Center, and they were not in any of the grower trials.

We'll take a particularly close look at the 93-100 this season. Each cooperator will receive about 2,000 northern propagated plants of this selection. If it performs well, we'll propagate enough for each cooperator to receive 10-20,000 plant for the 1998-99 season. That's enough plants to set one half to one acre. Plantings of this size should allow us to get some good information on the post harvest handling characteristics of this selection.

(Chandler & Crocker, Vegetarian, 98-05)

C. Bacterial rind necrosis of watermelon.

Hollowheart of watermelon was discussed in the March Vegetarian. The focus of this month's article is on another fruit defect - bacterial rind necrosis, sometimes simply referred to as rind necrosis.

Rind necrosis was first reported in Hawaii (Ishii and Aragaki, 1960). Typical rind necrosis is characterized by a light brown, dry, and hard discoloration interspersed with lighter areas. The disease develops in the rind and rarely extends into the flesh. Occasionally the affected area is limited to the
vascular bundles, but generally the discoloration spreads, sometimes affecting the entire rind. The causal organism was believed to be an *Erwinia*.

The disease was first reported in the continental United States in several areas of Texas (Thomas, 1968). Fruit from some fields were completely free of the disease, whereas in other fields infected fruit ranged from few to many. Bacterial rind necrosis was often more severe in fields where plants were heavily infested with watermelon mosaic virus. This led to speculation that a common vector may facilitate the spread of both diseases. The causal organism again was narrowed down to an *Erwinia* species.

Rind necrosis is a serious disease of watermelon that regularly occurs in California’s Imperial Valley (Kontaxis and Kurupus, 1975). Results from several experiments to determine a causal agent were inconclusive.

In other experiments (Hopkins and Elmstrom, 1977), the diversity of bacterial flora isolated from healthy and diseased fruit was similar except that enterobacteria were isolated more frequently from diseased than from healthy fruit. Rind necrosis occurred at inoculation sites following injection of *Erwinia*, *Pseudomonas*, *Enterobacter*, and *Bacillus*.

Variation among varieties in susceptibility was reported in Florida (Elmstrom and Hopkins, 1973 and Hopkins and Elmstrom, 1974) and in California (Kontaxis, 1976). Over a three-year evaluation period in Florida, ‘Sweet Princess’ and ‘Jubilee’ were most tolerant, whereas ‘Klondike Blue Ribbon’ and ‘Louisiana Queen’ were most susceptible. Other varieties were intermediate in susceptibility and not always in the same order. The incidence of bacterial rind necrosis varied from year to year. For example, ‘Sweet Princess’, the most tolerant variety, had 10.0, 14.8, and 21.8% affected fruit in 1972, 1973, and 1974, respectively. ‘Klondike Blue Ribbon’, the most susceptible variety, had 39.1, 64.8, and 73.7% affected fruit in those years.

Some of these same varieties were evaluated in Imperial Valley of California (Kontaxis, 1976). ‘Klondike Blue Ribbon’ was the most tolerant variety and ‘Sweet Princess’ was intermediate in susceptibility. These results are at odds with those obtained in Florida.

What is known about bacterial rind necrosis can be summarized as follows: the disease has been reported from several watermelon growing areas, *Erwinia* sp. most often has been associated with the diseased rind areas, other bacterial organisms isolated from either diseased or healthy fruit cause typical symptoms at inoculation sites, the incidence of the disease varies among varieties and growing seasons, and varieties may not always respond to the disease in the same way.

Watermelon bacterial rind necrosis appears to be genetically controlled but its frequency is affected by an interaction with environment. For the most part, varieties in use today appear not to be as susceptible as those used in the 1970’s suggesting that watermelon breeders have been successful in selecting against the disease.

References

D. 1998 Quincy tomato industry.
Acreage: There are 5,100* acres of mulched, staked tomatoes grown annually in Gadsden and surrounding counties. About half of this acreage is grown in Gadsden County, Liberty County, Fl. has about three hundred acres of production and Decatur County, Ga. has about 2,500 acres of annual production. Tomatoes are brought in from as far away...
Lake Park and Moultrie, Ga. to be packed under the "Quincy" tomato name. Quincy has become known nationwide and in Canada for its excellent quality tomatoes. In fact Pacific Tomato Co., who just built a $1 million+ packing house on the west side of Quincy 2 years ago, has never grown any tomatoes in Gadsden County. When Pacific first started they grew all their tomatoes around Jay, Fl., a good 100 miles away, and since have moved most of their production to Decatur County. They built the packing facility in Quincy solely for the Quincy name.

*note: No more than 1/2 (half) of this acreage is planted at one time because there are two distinct growing seasons, a Spring crop and a separate Fall crop. Spring crop acreage is generally separate from Fall crop acreage as a disease and insect control measure. The Spring crop is transplanted in March and harvested in June and the Fall crop is transplanted in July and harvested in October-November. The development of improved hot-set tomatoes by UF and seed companies caused a major expansion of the industry about 1990 in regards to the Fall crop.

*note: The above acreage is the actual row footage of plastic mulch. It takes about 25% additional land area for drive rows, ends of rows, and erosion conservation.

Large packing houses located in Gadsden County are: Gadsden Tomato Company, Juniper Packing Co., N. T. Gargiulo, Inc., North Florida Tomato, Pacific Growers, Thomas Smith Farms, Quincy Tomato Co.

Economics and Employment: For the past few years the annual harvested crop value has been from $40 million to $50 million. The industry employs over 3,000 full-time, part-time and seasonal workers. With the economic multiplier effect, the tomato industry injects over $100 million a year into the local (Quincy area) economy.

Irrigation: The Quincy tomato industry was one of the first to adopt drip or trickle irrigation. Today, 100% of the growers use drip tube irrigation, which is a major water savings and energy savings. Compared to overhead irrigation, drip irrigation requires only about 1/4 or 25% as much water. Plus, this method of irrigation allows producers to use fewer pesticides as opposed to overhead sprinkler irrigation.

Gadsden Tomato Growers Association: This association is a big supporter of the community and has donated thousands of dollars to 4-H, Redlands Christian Migrant Program, Gadsden County Literacy Volunteers, Ounce of Prevention, Take Stock in Children and others. They also contribute about $30,000 a year to the University of Florida NFREC. Just this year, they donated an additional $90,000 in order to get the Plant Pathology position refunded by UF.

Quincy Tomato Exchange: This new growers exchange was formed just last year, 1997. The Capper-Volstead Act allows growers who are members of an exchange to coordinate marketing, pricing, etc. Quincy area producers saw the increased need to form their own exchange because of ever increasing Mexican competition brought on by NAFTA.

(Ben Castro, Gadsden C. Ext. Agent
Vegetarian 98-05)

E. Methyl Bromide alternatives and worker safety.

While for many the year 2000 means concern over "whether my computer can make the transition into the new centennial", the year 2000 has a totally different meaning for farmers who are dependent on methyl bromide. Unless the current political climate changes, the year 2000 may be the last year methyl bromide is used on many commodities in the U.S.

While most people are becoming familiar with at least some of the research which has been underway since 1993 to find acceptable alternatives, there are other issues that may affect the acceptability of the alternatives, some of which have not been emphasized. Growers need to be aware of all the issues involved to avoid unwelcome surprises later. They also need to begin working with the most acceptable alternatives for their region and farming situation on a small scale, to expose any problems specific to their cultural practices.

Soil solarization is a practice which has received considerable interest. Limitations include diminished effectiveness during cool, cloudy weather. Also, nematode control has been poor. Organic amendments and other sustainable practices are generally expensive and the cost often outweighs the benefits. Additional work is still needed on practices such as cover crops. Telone C-17 is the best chemical alternative currently available; however, it has to be used in conjunction with a herbicide. There are few herbicides labeled for use on most vegetables and chances of new registrations are lower today than 5 years ago, partly due to the Food Quality Protection Act. The combination of Telone with Tillam has provided acceptable results in most trials. But Tillam is an old product, so there is concern about long term
availability. Strict interpretation of the Tillam label suggests that it can not be used in tomatoes which are transplanted the way most Florida growers transplant. Telone, like many of the other alternatives, is more demanding of the conditions at the time of application than was methyl bromide. It takes much longer to dissipate in cold soil, requiring a longer waiting period prior to transplanting, approximately 3 weeks. This in turn means earlier land preparation to avoid an unacceptable shift in harvest window.

The area of most concern for growers, however, is that of worker protection and safety. The Telone label requires that workers wear what are often referred to as “space suits”, rubber gloves, rubber boots and a full face respirator, one which covers the entire face. It is uncomfortable in cold weather, but unbearable in the heat and humidity of Florida. The filter cartridges must be changed regularly. Will the current wage rate pay someone for enduring the rigors of this PPE in June, July and August? It may even take more workers, as they may have to work in shifts with extended rests, all while being paid. Labor is already approaching a critical level in Florida, and this could accentuate that. Then there is the psychological aspect of poorly educated workers seeing themselves dressed as if they were about to clean up Chernobyl. Urban encroachment is becoming a way of life for agriculture. Imagine the uninformed public seeing this site for the first time, especially if their property is close to the area being fumigated. The manufacturer of Telone is aware of these problems and is exploring ways to address these issues, but as the label currently stands, these are real issues.

Recent reports indicate that there may be some hope for at least leveling the playing field by putting us on a timetable more in line with the developing nations. Let’s hope this happens. We still have a lot of work to do to find acceptable alternatives and those extra 10 years or so could be critical.

(P. R. Gilreath, J. P. Gilreath, Vegetarian 98-05)

F. Tomato Varieties for Fall Planting in North Florida.

Now is the time to start selection of varieties for fall tomato planting. Our normal fall planting period is from about July 15 to August 15. During this time period night temperatures are too warm (> 70 ° F) for fruit set with “normal” varieties. A variety is needed that will set under warm night temperatures. ‘Solar Set’ released in 1989 was the first commercial hot-set variety. Since that time many new hot-set varieties have been trialed.

Solar Set is a University of Florida release with seed available from Asgrow. It is still the main variety for fall production. Yields are good and most fruit is in the large and extra large category. ‘Solar Set’ should be pruned lightly with only ground suckers plus 2 additional suckers removed. Many times it is not pruned at all and still does quite well. Not for spring planting as fruit are usually rough on the bottom. Has been used for vine ripen and works quite well.

Equinox is a recent release from the UF/IFAS program. It is an improved ‘Solar Set’ with a smoother blossom end and higher yields. In trials at NFREC, Quincy, it has been the top entry in 2 of last 3 years. Fruit size is equal to ‘Solar Set’. Pruning again should be light or none. ‘Equinox’ has also done fairly well in spring trials. Seed is available from Agrisales.

Captiva, from Petoseed and has done well in trials at NFREC, Quincy. Yields have been slightly better than ‘Solar Set’ but not as high as ‘Equinox’. Fruit size has been about 0.5 oz smaller than ‘Solar Set’. ‘Captiva’ is one of a very few varieties that has resistance to race 3 of Fusarium wilt. Has done well in spring trials also. Prune lightly or none at all.

Sanibel is from Petoseed and has done well in fall trials at NFREC, Quincy. Yields have been similar to ‘Captiva’ but fruit are slightly larger than ‘Solar Set’. ‘Sanibel’ was developed for the vine-ripe market and has had good acceptance. It is one of the few fresh market hybrids that has good resistance to root knot nematode in trials at NFREC, Quincy. ‘Sanibel’ should be pruned lightly or none at all.

Suncrest, a fresh market hybrid from Roger’s Seed has done well in fall and spring trials. Yields have been equal to ‘Solar Set’ in fall trials but fruit is slightly smaller. It should be pruned lightly or none at all. For trial.

XPH 10035 is from Asgrow Seed. Yields have been higher than ‘Solar Set’ but not as high as Equinox. Fruit have averaged about 0.5 oz larger than ‘Solar Set’. Plant should be pruned lightly. Fruit at times have been slightly flattened. For trial.

Agriset 761 is from Agrisales. It does not set fruit in high temperatures as well as ‘Solar Set’ and should be reserved for the later plantings. If a long enough production period occurs (no early frost) yields are equal ‘Solar Set’ but fruit are slightly smaller. ‘Agriset 761’ must be pruned to get maximum yields
and increase fruit size. Prune at least lightly, at times moderate pruning (leave at least 2 below the fork) has increases yields and fruit size even further.

(Olson, Vegetarian 98-05)

III PESTICIDE UPDATE

A. Select (Clethodim) labeled in tomatoes.
The post-grass herbicide Select (clethodim) has received labeling for use on tomatoes, alfalfa, dry beans and peanuts.

Select 2EC may be sprayed over the top of tomatoes at rate of 6-8 ft. oz/acre (0.187-0.25 lb a.i/A) to control a large number of grass weeds.

A crop oil concentrate containing at least 15% emulsifier should be added at 1% v/v in the finished spray volume. Do not apply Select 2EC herbicide within 20 days of harvest.

Apply only to actively grasses at recommended weed heights. Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

See the label for additional directions and restrictions.

(Stall, Vegetarian 98-05)

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<th>Vegetable</th>
<th>Common Edible Part</th>
<th>Other Edible Parts</th>
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<tbody>
<tr>
<td>Beans, snap</td>
<td>pod with seeds</td>
<td>leaves</td>
</tr>
<tr>
<td>Beans, lima</td>
<td>seeds</td>
<td>pods, leaves</td>
</tr>
<tr>
<td>Beets</td>
<td>root</td>
<td>leaves</td>
</tr>
<tr>
<td>Broccoli</td>
<td>flower</td>
<td>leaves, flower stem</td>
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<tr>
<td>Carrot</td>
<td>root</td>
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<td>Cauliflower</td>
<td>immature flower</td>
<td>flower stem, leaves</td>
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<td>Celery</td>
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<td>Corn, sweet</td>
<td>seeds</td>
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<td>Cucumber</td>
<td>fruit with seeds</td>
<td>stem tips and young leaves</td>
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<td>Eggplant</td>
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<td>leaves edible but not flavorful</td>
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<tr>
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<td>swollen stem</td>
<td>leaves</td>
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<tr>
<td>Okra</td>
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<tr>
<td>Onions</td>
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<td>Vegetable</td>
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<tr>
<td>Radish</td>
<td>roots</td>
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<td>Squash</td>
<td>fruit with seeds</td>
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<tr>
<td>Turnip</td>
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<td>Watermelon</td>
<td>fruits-interior pulp and seeds</td>
<td>rind of fruit</td>
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Although many of the secondary plant parts are edible, their popularity as food items is diminished by lack of proper flavor or unfavorable texture. For example, the leaves of practically all the cabbage family are edible, but the strong flavors of some species are disagreeable or too strong for most people's taste.

The edible leaves and stem tips of sweet potato vines are well known in many parts of the world. Often considered a poor man's food, sweet potato foliage has a rich protein content that helps supplement the nutritional value of the roots.

As for all vegetable parts, there is a great deal of variation within varieties in flavor and culinary characteristics of these secondary parts. For example, some sweet potato stem tips in certain varieties are bitter with a resinous flavor that is too strong.

Quite often, cooking is necessary to make the parts edible. Raw leaves eaten fresh may even be slightly poisonous in some cases.

(Stephens, Vegetarian 98-05)