TO: COUNTY EXTENSION DIRECTORS AND AGENTS (VEGETABLES AND HORTICULTURE)  
AND OTHERS INTERESTED IN VEGETABLE CROPS IN FLORIDA

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I. Commercial Vegetable Production

A. Production of Quality Eggplant Fruits

We have had to work closely over the past two seasons with growers in Madison County in an attempt to help them solve problems with eggplants. A survey of the area last year revealed several problems associated with fruit quality. The most serious was internal darkening of eggplant tissue. In addition, many fruits were rough, misshapened and severely blemished.

A program outlined by the Extension Service for each grower demonstrated that the problems could be solved. Admittedly, some problems were observed again this season. However, one grower demonstrated that almost perfect eggplant fruits can be produced.

Briefly, the following practices are extremely important to the successful production of quality eggplant fruits.

1. Proper liming (adequate calcium and magnesium).
2. Adequate fertilization to include proper rates, sources, timing, etc.
3. Good program of rotation and sanitation to help control nematodes, diseases and insects.
4. Removal of undesirable fruits. If left on the plants, old fruits will affect subsequent plant growth and fruit quality.
5. Good control of diseases—especially Phomopsis fruit rot by use of fungicides.
6. Good insect control—Leaf eating or sucking insects and especially those attacking fruits must be controlled. Two serious insect pests are flower thrips and red spider.
7. Adequate irrigation—Needed to promote uniform growth.

An eggplant crop to be successful must develop a normal, steady growth from seedling stage to end of harvest. Anything causing plants to be retarded in growth is apt to cause a reduction in fruit quality and appearance. (Montelaro)

B. Loss of Fusarium Wilt Resistance in Jubilee Watermelon

The Jubilee variety of watermelon was released in 1963 by Dr. Crall of the Leesburg Station. Jubilee quickly gained popularity until today it may be considered among the more important varieties in Florida. When released, Dr. Crall noted that Jubilee was not as resistant to wilt as Charleston Gray, but he felt it had adequate resistance to permit economic production under Florida conditions.
This past season Jubilee fields heavily infested with Fusarium wilt were found in many areas in the State. Growers complained that the variety was losing its wilt resistance. This was confirmed by Dr. Crall and his staff in some recent work where they tested original (breeder's) seed against several different lots of commercial seed. On the average, plants from commercial seed lots exhibited from 4 to 5 more wilt than those produced from the original lot of seed. Loss of wilt resistance is due to lack of reselection each year under wilt conditions similar to the wilt stress characteristic of Florida. Seedsmen are not at fault since they were not forewarned.

We are now developing a program to return Jubilee to its original wilt resistance. This is a cooperative effort among several groups including the Extension Service, Experiment Stations, Seed Foundation, Florida Department of Agriculture and Commercial Seed Companies. The plan simply is to start again with a limited amount of breeder's seed which will be increased by the Seed Foundation and sold to seed companies for production of "Registered" seed for Florida growers. Seed sold under the "Registered" label, which will be issued by agencies in the states where it is grown, should possess wilt resistance equal to Jubilee seed sold shortly after release of the variety. Growers must realize that production of seed under this program will be costly and that this type of Jubilee seed will probably cost him more than the more common western grown seed. However, we feel that it will be well worth the added cost to growers who want to continue growing Jubilee. "Registered Seed" for the commercial grower will not be available until late in 1972.

(Montelaro)

C. Plastic Pipe for Replacing Header Ditches

About fifteen vegetable growers in the Hastings area are using plastic pipes to replace the old header ditches for irrigation of potatoes and cabbage. They are finding that it has several advantages over the old system. The closed system with valves properly located for delivery to the desired location conserves much water which in the past was lost by seepage and evaporation. One grower reports that water reaches a distant field in about one hour since installing plastic pipe as compared with eight hours when he used open ditches. The savings in time, fuel or electricity, tear and wear on the pump, etc., will pay for the cost of installation in a very few years. Where water conservation is a must, the value of the system increases immeasurably.

This project has been a joint effort between the St. Johns County ASCS and the Florida Agricultural Extension Service. Anyone needing more information can contact either of these two agencies.

(Montelaro)

D. Results of County Cultivar Trials

Seeds of Smokylee watermelon and Zipper Cream pea were sent to a number of county extension agents last March for trial and evaluation on commercial vegetable farms. Many of the grower/agent evaluations have now been received by the writer and a summary of the results are reported below.
Smokylee Watermelon

Counties participating - Alachua, Calhoun, Citrus, Hillsborough, Jackson, Levy, Madison, Marion, Pasco, Sumter, Suwannee and Washington.

Unanimous conclusion - Sunburned easily. This characteristic may not be serious in early spring or where vine cover is heavy.

Other conclusions

1. Internal eating quality (sugar and flavor) - Most growers felt that Smokylee rated excellent. One grower claimed that melons were too watery and their taste was not as good as Charleston Grays grown in the same field.

2. Internal appearance - Most growers were favorably impressed with the red flesh of Smokylee. Some growers feel that the white seed is a disadvantage.

3. Yield and size of melons - The results for these measurements were mixed. About half the growers said Smokylee out yielded Charleston Gray both in total yield and average individual melon weight, while the rest of the growers felt the opposite was true.

Zipper Cream Pea

Counties participating - Alachua, Baker, Bradford, Dade, Escambia, Hillsborough, Jackson, Levy, Marion, Palm Beach, Pasco, Polk, Seminole, Suwannee, Union and Washington.

Favorable conclusions

Generally, most growers praised the Zipper Cream pea and made the following comments as compared with other varieties.

1. Less curculio damage
2. Greater shell-out percentage
3. Matures later
4. Greater yield
5. More disease resistant
6. Excellent flavor and eating quality
7. Easily shelled from pods

Other conclusions

A few growers expressed some factors which were not as favorable, viz.

1. Excessive vining.

2. Poor germination (this was definitely not experienced by all growers). Uneven soil moisture, too low soil moisture or poor seed quality might have been the primary cause.
3. Low production (generally, the opposite view was expressed).

4. Difficult to pick with regard to maturity (undoubtedly, this will be overcome with familiarity and a little practice).

(Hart)

E. Fish Scale or Elephant Hide on Potatoes

A condition sometimes described as fish scale or elephant hide, depending on its severity, has shown up on some Florida potatoes this year. Perhaps it should be termed "gator skin" in Florida. Actually, the condition is a potato tuber "skin" defect which closely resembles the typical inherent russetting or netting of the well known Russet Burbank potato. It differs though in that manifestations usually occur in a spotty manner rather than completely covering the potato.

Most likely, the russetting which sometimes occurs on the skins of potato cultivars, which should not genetically exhibit russetting, is due to a mild form of the fungus Rhizoctonia solani. Additionally, anything that irritates or injures the skin of developing potatoes such as undecomposed plant debris may lead to scurfy or scabby or net-like eruptions, which also resemble corky-like discolorations, and could be called russetting, too. This external defect, although unappealing in marketing channels, in no way affects internal eating quality.

(Hart)
III. Vegetable Gardening

A. Cover Seed with Vermiculite

John Larsen, Texas Extension Specialist, found a way to plant vegetable seed in hot, crusty soils and still get good emergence. Because the technique may be of some practical value to home gardeners with many types of vegetables, I want to pass his report on to you.

Procedure

One of our growers fabricated a vermiculite spreader unit which mounts on the tool bar in conjunction with the vegetable seeders. As the seed is dropped from the planter, vermiculite is metered from a hopper through flexible tubes and is deposited on top of the seed immediately back of the furrow opener. For two rows per bed with beds spaced 38 inches on center, six bags or 24 cubic feet per acre of vermiculite was used to cover the seed. The vermiculite was deposited in a strip about 3/4 inch in depth and 3/4 inch in width. The furrow was slightly deeper than 3/4 inch so that the press wheels on the planter caused a little soil to fall on each side of the vermiculite strip which resulted in a 3/8- to 1/2-inch band of vermiculite to show on the surface of the bed.

Results

Onions were seeded in August, 1969, with and without 24 cubic feet of vermiculite per acre covering the seed. The onions were seeded in dry soil and irrigated several days later. In spite of fairly high winds the vermiculite did not blow out of the furrow. The stand of onions obtained from the use of vermiculite was several times greater than that without vermiculite and the yield at harvest was directly proportionate to the stand.

Rutabagas were seeded in October, 1969, with and without 24 cubic feet of vermiculite per acre covering the seed. Heavy rains following planting compacted the soil so that not only a significantly better stand was obtained when vermiculite covered the seed, but also emergence of the seedlings were a full day ahead of that on plain soil. At harvest the vermiculite covered seed yielded 450 bushels per acre compared to 300 bushels when covered with soil.

In 1970, onions were seeded about the middle of July with the modified vermiculite spreader and furrow openers and the amount of vermiculite used was reduced to three bags or 12 cubic feet for a cost of $6.00 per acre. At harvest in October, 1970, the yield of onions with vermiculite was 80 percent of that calculated for a perfect stand compared to 10 percent without vermiculite.

In July, 1970, the first planting of rutabagas was made with a precision seeder and Planet Jr. seeder, both with and without 12 cubic feet of vermiculite covering the seed. An excellent stand resulted from both planters with vermiculite covering the seed and little hand thinning was required from the precision planter compared to that from the Planet Jr. Without the use of vermiculite, the stand of rutabagas with the Planet Jr. seeder was erratic and
required some hand thinning. There was not a sufficient stand obtained with the precision planter when vermiculite was not used so that replanting was required.

A side effect not expected from the use of vermiculite was that of apparent decrease of soluble salt damage on the young rutabaga seedlings. The water used to irrigate comes from the Concho River which carries considerable salts during the summer. The soluble salts in the soil have built up to a fairly high level so that injury to rutabaga seedlings sometimes occurs. The July planting of rutabagas without vermiculite showed some die-back and leaf burn on the young seedlings when the first true leaves were developing whereas none was apparent on the seedlings where vermiculite was used. By the time the plants were developing their second and third true leaves, salt injury also appeared where vermiculite was used. Apparently, the vermiculite absorbs sufficient salts from the soil in the area of the germinating seed to prevent soluble salt damage during the early growth of the seedling.

Summary

The demonstrations using vermiculite to cover onion and rutabaga seed showed that:

1. Good stand of onions and rutabagas can be obtained from summer plantings.
2. Vermiculite prevents crusting of the soil that inhibits seedling emergence.
3. Vermiculite prevents high temperature soil from direct contact with stems of tender seedlings.
4. Vermiculite prevents soluble salt damage during early growth of seedlings.
5. It appears that vermiculite prevents high temperature build up in area of the germinating seed.
6. The use of vermiculite on seedlings of other vegetables should be equally effective as that with onions and rutabagas where similar problems of obtaining a stand are encountered.

(Stephens)

B. Ring Around Tomatoes

You may have read or heard of the ring method of tomato culture. For those who have not, here is a style of ring culture being pushed by Southern Garden Centers, and reportedly with good success.
"Japanese-Style Planting Pays Off In Fruit--Eddie Jones' Method"

The following supplies are needed:

1. A piece of wire fence five feet high and 15 feet long.
2. At least two pounds of all-purpose garden fertilizer.
3. Two wheelbarrow loads of good soil.
4. A small bottle of nematode killer.

Choose a sunny location on the south side of the house, if possible, and in full sun. Break up the soil to a depth of a few inches. Treat it with nematode killer, according to directions on the container. Place the circle of wire in the center of the broken ground. Put a layer of mulch six inches deep in the bottom of the wire ring. Add a layer of soil, then another layer of mulch and a second layer of soil. Add a pound of fertilizer, or about two heaping handfuls. Now treat the mulch and soil with the nematode killer. Make the top of the pile somewhat dish-shaped so it will hold water. Wait a week. Plant. Set three or four plants equally spaced around the outside of the wire, and fertilize them very lightly to get them started.

As the young plants grow, they will develop roots in the mulch and soil, and after that growth becomes very rapid. Tie the plants to the wire as they grow. Spray weekly with a fungicide to ward off blight, and if you see signs of insects, spray. Should you see signs of slugs scatter an anti-slug bait over the mulch and about the area outside the wire.

When production becomes heavy, put five pounds of fertilizer on top of the mulch and soil and water it in.

There can be many variations of this method of growing tomatoes, commonly called a Japanese tomato ring.

C. Know Your Vegetables

This item will appear each month, discussing a little known vegetable.

Tree Tomato (Cyphomandra betecea) - Articles appear quite often advertising the tree tomato. It is not a true tomato, but is a perennial shrub 6 to 10 feet high, having large, five-inch long, heart shaped, pubescent leaves. The fruit are two to three inches long, oval in shape, smooth and many seeded, borne on a long stem. Fruit resembles a tomato in appearance.

It is grown in Florida only in gardens or around the house, and only in frost-free locations. It is grown widely in South America, especially Peru and Brazil.
It begins bearing at two years from seed and is usually finished at 5 or 6 years. Its season, from bloom to mature fruit, is about three months duration. It is easily propagated from seed, but also may be started from cuttings.

Private citizens advertise seed for sale in the Florida Market Bulletin, and it is listed by Lakeland Nurseries, Hanover, Pennsylvania. There may be other seed sources for this vegetable in addition to these mentioned, but these two may be helpful for gardeners seeking a trial in the near future.

(Stephens)