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I. NOTES OF INTEREST

A. Vegetable Crops Calendar.


II. COMMERCIAL VEGETABLES


Last month we discussed Florida vegetable transplant volume. This month we focus on transplant acreage and shipping trends. The Florida containerized vegetable transplant industry is geographically concentrated in two locations: the Sarasota, Ruskin, Plant City area and the Immokalee, LaBelle, Naples area. An isolated but major production area is Bushnell where the bulk of the ebb and flow irrigation production is located.

Slightly over 109 acres of transplant production “under glass” (plastic actually) were logged in 1990, 46 acres more than recorded in 1980. Eighty-four percent of these acres have traditional overhead irrigation. Ebb and flow irrigation (bottom watering) services 16% of the production acreage (97.5% of which are at the Bushnell location).

Greenhouse styles include: aluminum trussed bow houses (65 acres), wooden trussed houses (13 acres), saw-toothed houses (3 acres), quonset houses (12 acres), and 19 acres in unspecified structures. Trussed bow houses (aluminum or wood) in Florida traditionally have curtain sides which are raised and lowered for temperature modification. Quonset houses do not have curtain sides.

Most vegetable transplant producers, major and minor, (see Table 1 footnote) indicated they expected production to either increase or remain stable across all crops. Where areas of decreasing production were a concern growers cited various reasons such as: yearly fluctuations in acreage, market conditions, over production, and changes in production areas to which plants were shipped.

Half of the vegetable transplants grown by Florida’s major producers were shipped to users in-state, a third (36%) were shipped out-of-state, and the rest (14%) were used on-farm (Table 1). Distribution of transplants used in-state and on-farm indicates Florida’s status as a major producer of tomatoes, peppers, and watermelons.

Volume wise, tomato, pepper, cabbage, tobacco, celery, watermelon, broccoli, lettuce and collard transplants make up the bulk of Florida’s out-of-state sales.

In contrast to the distribution pattern of the major producers, the twenty-five smaller companies indicated greater than 80% of all transplants produced were used on-farm. This was true for all but four types of transplants, broccoli, cantaloupe, eggplant, and squash, most of which were shipped in-state. Only 3% of minor house production was shipped out-of-state.

Thirty-four states and two countries (Bahamas, Canada) were cited as recipients of Florida transplants. Among the most frequently mentioned states receiving transplants were Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. This factor may not identify those states receiving the bulk of Florida’s transplants however. Other states listed as receiving vegetable transplants include: Alabama, Colorado, Connecticut, Delaware, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas,
Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Jersey, New York, North Carolina, North Dakota, Oklahoma, Texas, West Virginia and Wisconsin.

Table 1. Distribution and Use of Florida Vegetable Transplants

<table>
<thead>
<tr>
<th>Type</th>
<th>Used on Farm (%)</th>
<th>Shipped In-State (%)</th>
<th>Shipped Out of State (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Major* Minor</td>
<td>Major Minor Minor</td>
<td>Major Minor Minor</td>
</tr>
<tr>
<td>Tomato</td>
<td>10 70</td>
<td>51 25</td>
<td>39 5</td>
</tr>
<tr>
<td>Pepper</td>
<td>19 75</td>
<td>57 23</td>
<td>24 2</td>
</tr>
<tr>
<td>Cabbage</td>
<td>17 91</td>
<td>29 3</td>
<td>54 5</td>
</tr>
<tr>
<td>Eggplant</td>
<td>5 3</td>
<td>76 96</td>
<td>19 1</td>
</tr>
<tr>
<td>Collard</td>
<td>0 90</td>
<td>6 5</td>
<td>94 4</td>
</tr>
<tr>
<td>Broccoli</td>
<td>0 21</td>
<td>40 36</td>
<td>60 43</td>
</tr>
<tr>
<td>Watermelon</td>
<td>36 87</td>
<td>51 13</td>
<td>14 0</td>
</tr>
<tr>
<td>Onion</td>
<td>12 83</td>
<td>79 17</td>
<td>9 0</td>
</tr>
<tr>
<td>Lettuce</td>
<td>0 82</td>
<td>9 18</td>
<td>91 0</td>
</tr>
<tr>
<td>Muskmelon</td>
<td>4 63</td>
<td>49 35</td>
<td>47 2</td>
</tr>
<tr>
<td>Squash</td>
<td>0 35</td>
<td>98 64</td>
<td>2 1</td>
</tr>
<tr>
<td>Celery</td>
<td>0 100</td>
<td>48 0</td>
<td>52 0</td>
</tr>
<tr>
<td>Total</td>
<td>14 80</td>
<td>50 16</td>
<td>36 3</td>
</tr>
</tbody>
</table>

*Major houses consist of: Classic Plants, CollierGro, Johnny Johnson Greenhouses, LaBelle Plant World, Plants of Ruskin, Redi-Plants, Speedling, Inc. (2), and The Plant Farm.

(Vavrina, Vegetarian 92-06)
B. Demonstration on Reduced Fertilizer for Tomatoes.

Ken Shuler has just completed an on-farm demonstration of reduced fertilizer rates for tomatoes in Palm Beach county with the Capella Farms operation. I know we are starting to gather a few believers out there ... so it seems that the more of these demonstrations we do, the better things will get.

Ken’s study involved four very simple fertilizer treatments including the grower standard practice for winter tomatoes on the sandland in Palm Beach county. The study was replicated four times and Ken did the picking and grading. His vegetable specialist analyzed the data and provided moral support.

The test was conducted on a sand that tested 4 ppm double-acid K (about as low as you can go without hitting distilled water!). The P was 120 ppm P and the soil was 0.7% organic matter and had a water pH of 7.3. The grower broadcast 500 lb per acre of 8-4-12 on Sept. 26, 1991. Notice that this grower has bought into the idea that he needs next to no P2O5. However, the high potash ratio philosophy still prevails. (Ken is working with the grower on that one).

Ken went into the beds on Nov. 1 and applied his treatments to blank shoulder band furrows left for him by the grower. Ken’s treatments were (this is where the moral support of the specialist comes in!):

1. 160 N: 180 K2O (close to IFAS recs.)
2. 160 N: 260 K2O (high potash).
3. 160 N: 180 K2O (half of N and K from slow-release).
4. 200 N: 300 K2O (grower standard).

In late January, the whole field, including Ken’s test received a liquid injection wheel addition of 40 lb/A of N and 13 lb/A of K2O. (Can’t have everything go right). Harvests were made five times through February and into April.

And now ... the envelope please! You guessed it! No significant treatment effects for yield or size grades. The yields were: 1560 ctns/Acre for treatment #2; 1745 ctn/A for treatment #1; 1830 ctns/A for treatment #3, and 1870 ctns/A for treatment #4. The grand mean was 1750 ctns/A which is the number we should talk about when referring to yield results (since there was no treatment effect).

Although the plots received an extra injection of N and K2O, the results clearly show the extra N and K applied in the "grower" treatment was not warranted. Furthermore, increasing the K2O to N "ratio" by increasing the K2O rate did not improve yields and indications are the yields might be reduced. I hope we can throw the word "ratio" out the window and start talking about rates. Neither of Ken’s high potash treatments improved yields or size grade over that from the 180 (plus 13) lb K2O/Acre. And all this on a 4 ppm K soil! Keep up the good work, Ken! More details in Ken’s Palm Beach Extension report 1992-3.

(Hochmuth, Vegetarian 92-06)

III. VEGETABLE GARDENING

A. Inflorescence Abnormalities in Sweet Corn.

About this time (early summer) each year we in Extension get a lot of calls from homeowners inquiring about strange happenings in their vegetable gardens. Commonplace questions are, "Did my potatoes cross with my tomatoes, for I see little green fruits on top of the potato plants?", and "Why are my eggplants brown, instead of black", or "Is this fruit growing on my tomato plant a tomato or a pepper? It looks just like a bell pepper!"

But the question most often asked me this year has been, "What's going on with my sweet corn?" "It's got tassels where the ears should be!" So let's take a closer look at this latter condition, which
seems to be happening on the 'Silver Queen' variety more so than others.

First, the sweet corn plant is usually what we call *monoecious*, that is, the male (staminate) and the female (pistillate) flowers are borne in separate inflorescences on the same plant. The male flower is the tassel at the top of the stalk, and the female flowers are in the lateral branches arising in the axils of the lower leaves. These pistillate flowers when mature are called ears.

However, occasionally off-type plants occur which produce seed in the tassel, or a tassel in the ear. When either of these two unusual occurrences happen, the gardener is alarmed and quickly calls for an explanation.

In both cases, the off-types occur as a result of stressful climatic conditions. For example, this year (1992) we have experienced an unusually lingering cool spring. This climatic pattern has disrupted the normal inflorescence sex determining hormonal production. The result - a tassel where it should not be, or a seed-head in the tassel area. In an over-simplifying manner we generally refer to the cause as "a climatic induced physiological disorder."

Also, it could be labelled a "genetic throwback", for keep in mind that very early corn (pre-historic) had perfect flowers - those with both male and female parts in the same flowers. It was only years later, through breeding and selection, that the parts were separated to the tassel and ears. If you examine closely each of the tassel-sprouts coming from the base of the ears, you will notice that each spike contains both the staminate panicles and the pistillate grains with emanating silks clustered vertically along the spike next to the ear.

While I'm talking about unusual sweet corn flowering conditions, I might as well mention two more: xenia, and poor tip-fill.

The immediate effect of the pollen parent on the characteristics (usually color) of the endosperm of the kernel is called "xenia". We see it most often when yellow corn fertilizes a white variety - the kernels come out mixed or mostly yellow, since yellow is dominant over white. When yellow is pollinated by white corn, the kernels are yellow, but lighter and often have a white tip.

The other condition - poor tip-fill - has to do with stress. The flowers (kernels with silks) near the bottom and middle of the ear develop the silks first so are pollinated first. However, those at the bottom are farther away from the tip (entrance of pollen) so take longer to extend silks to the tip. Those flowers at the tip are last to develop, so under stress (unfavorable growing conditions), take lower precedence than those earlier pollinated. The result - poor tip-fill and smaller grains.

Then why is so much seen in 'Silver Queen'? Probably simply because this particular variety is grown more frequently than any other in Florida gardens.

Now, you say, so much for the corn problem. What about the little potato fruits and the "to-peppers" and the brown eggplants? Well, those are great topics for future *Vegetarian* articles. Stay tuned!

(Stephens, *Vegetarian* 92-06)
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