Vegetarian 89-12

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I. NOTES OF INTEREST

A. Calendar.


B. New Publications.


C. Suwannee Valley Field and Greenhouse Vegetable Grower’s Shortcourse and Trade Show.

Saturday, January 13, 1990
Suwannee Co. Agric. Ctr. & Coliseum
Live Oak, FL

8:30 am - Registration and Trade Show
(Coffee and Donuts)

9:15 am - Field Vegetable Session

12:00 N - 1:30 pm lunch and visit exhibits

1:30 pm - (Choice of two sessions)
Greenhouse Vegetable Session or
Snap Bean and Sweet Corn Session

4:00 pm - Adjourn

MEAL RESERVATIONS AT $5.00 EACH
ARE REQUIRED BY JANUARY 6, 1990.

*Credits (CEU’s) will be granted for each session toward renewal of certification for pesticide applicators.

Sponsored by, Institute of Food and Agricultural Sciences, University of Florida, Cooperative Service and Area Agribusinesses.

FIELD VEGETABLE SESSION

Morning
Moderator: Allen Tyree - Extension Agent I - Hamilton County.

8:30A Registration, Coffee and Donuts.

9:30 Cucumber and Squash Varieties and Production - Mr. Bob Hochmuth, Multi-County Extension Agent

10:00 Disease Update (Watermelon, Changes in Fungicides) - Dr. Tom Kucharek, Extension Plant Pathologist

10:30 Fertilizer Management for Drip Irrigation and Plastic Mulch - Dr. George Hochmuth, Extension Vegetable Specialist

11:00 Watermelon Varieties (Standard Icebox and Seedless) Dr. Gary Elmstrom, Cucurbit Specialist, Central Florida AREC, Leesburg.

11:30 Future Management of Water Resources in the Suwannee Valley - Mr. Terry Demott, Water Resources Specialist, Suwannee River Water Management District.

11:50 Suwannee Valley State Farmer’s Market Update - Mr. Jim Warner, Suwannee Valley State Farmer’s Market Manager

12:00 LUNCH AND VISIT EXHIBITS
(Lunch Reserv. $5.00 in advance)
GREENHOUSE VEGETABLE SESSION

Moderator: Mike Sweat, Baker County Extension Director

1:30P The Sweet Potato Whitefly "The Whole Story", Dr. Fred Johnson, Extension Entomologist

2:15 Fruit Disorders and Nutrition Management for Winter, Dr. George Hochmuth.

3:00 New Diseases, New Challenges, Dr. Gary Simone, Extension Plant Pathologist

SNAP BEAN AND SWEET CORN SESSION

Moderator: Bob Tervola, Suwannee County Extension Director

1:30P Fertilizer Programs for Snap Beans and Sweet Corn, Dr. George Hochmuth.

2:00 1989 Snap Bean Variety Trial Results, Mr. Bob Hochmuth.

2:20 Weed Control in Snap Beans and Sweet Corn, Dr. Bill Stall.

2:50 Sweet Corn Variety Trial Results, Mr. Bob Hochmuth, Mr. Bob Tervola, Dr. Steve Sargent.

3:30 Discussion

For further information, contact: Bob Hochmuth, Live Oak AREC at (904) 362-1725.

D. 1990 Sweet Corn Institute.

The 1990 Sweet Corn Institute will be held Wednesday, January 24, 1990 at the Florida Fruit and Vegetable Annex III, 4401 E. Colonial Drive, Orlando, FL. The Institute is held on alternating years to update Florida growers and industry on the newest research and developments in the Sweet Corn industry.

The registration for the institute will start about 9:30 with the meeting starting promptly at 10:00 am. A preliminary program follows:

Preliminary Program


Sensory Evaluation of Sh2 and se Sweet Corns. Charles Boyer, Penn State University, University Park, Pennsylvania.

Sweet Corn Marketing in the 90's. Donald Scruggs, South Bay Growers, South Bay, Florida.


E. 1990 IFAS Watermelon Institute.

Tuesday, January 30, 1990
Marion Co. Coop. Ext. Office Auditorium
2232 NE Jacksonville Road
Ocala, FL

Moderator: Bill Phillips, Marion County Extension Director

1:00 Welcome and Introduction - Dan Cantliffe, Chairman Vegetable Crops Dept., IFAS, Gainesville, FL.

1:10 Degradable mulches for watermelons - Bob Hochmuth, Live Oak REC, IFAS, Live Oak, FL.

1:30 Management of micro (drip) irrigation for watermelons - Gary Clark, Gulf Coast REC, IFAS, Bradenton, FL.

2:00 Fertilizer management for drip-irrigated watermelons - George Hochmuth, Vegetable Crops Dept., IFAS, Gainesville, FL.

2:20 Water rules and regulations affecting agriculture - Bill Smith, Southwest Florida Water Management District, Brooksville, FL.

2:45 BREAK

3:00 Performance of seedless watermelon varieties - Spring 1989 - Don Maynard, Gulf Coast REC, IFAS, Bradenton, FL.

3:20 Weed control systems for watermelons - Bill Stall, Vegetable Crops Dept., IFAS, Gainesville, FL.

3:40 Controlling white flies, thrips, and spider mites - Fred Johnson, Dept. Entomology and Nematology, IFAS, Gainesville, FL.

4:10 Epidemiology of watermelon mosaic virus 2 in north central Florida - Susan Webb, Central Florida REC, IFAS, Leesburg, FL.

4:30 Bacterial fruit blotch of watermelon - Don Hopkins, Central Florida REC, IFAS, Leesburg, FL.

4:50 Disease control program for watermelons - Tom Kucharek, Dept. Plant Pathology, IFAS, Gainesville, FL.

5:10 Adjourn

II. COMMERCIAL VEGETABLES

A. Spring Broccoli Variety Selection for North Florida.

Broccoli is a minor crop for north Florida. Small production areas exist for local sales. Interest in production has been increasing, but because of cost of handling (top icing) large acreage production has not occurred. The following information is results of numerous replicated trials conducted at the N.F.R.E.C., Quincy from 1986-1989.

Transplanting dates were 20 Feb. 1986, 25 Feb. 1987, 26 Feb. 1988 and 28 Feb. 1989. In-row spacing was 9 inches and between row spacing was 36 inches. Total nitrogen applied ranged from 160 to 175 lbs./A. Total phosphorus applied was 108 lbs./A. Potassium (K₂O) amounts applied ranged from 275 to 295 lbs./A. All plants were produced in expanded polystyrene trays with dimensions of 1 inch X 1 inch X 3 inches. The varieties tested are listed in the following table. Information is also provided as to source of seed, number of years planted, average yield over number of years planted and average number of days from transplanting to first harvest. All varieties listed were planted in 1989. Some varieties were not included in all years because of lack of seed or were new releases.

The highest yielding variety was 'Greenbelt'. It was first in yield in 2 of 3 years and in second place the third year. 'Pirate' came in second in yield and placed second in 3 out of 4 years and was
first in fourth year planted. 'Green Valiant' placed third overall and ranked number 3 in 3 of 4 years. The top 3 varieties are late maturing varieties requiring 68 to 70 days to harvest. The next 3 varieties 'Green Top', 'Mariner' and 'Green Charger' were very similar in yield and maturity. They would be included in the mid-season maturity group. The highest yielding early variety was 'Galaxy'. Another early variety was Packman. If the varieties are broken into maturity early (≤ 60 days), mid-season (61 to 66) and late (≥ 67 days), we have 4 early varieties, 11 mid-season varieties, and 4 late varieties. Selection of varieties from each maturity group would allow an extended season from a single planting date.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Source</th>
<th>Number of Years planted</th>
<th>Average Yield (crates/A)</th>
<th>Average days to first harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenbelt</td>
<td>Northrup King</td>
<td>3</td>
<td>417</td>
<td>68</td>
</tr>
<tr>
<td>Pirate</td>
<td>Petoseed</td>
<td>4</td>
<td>592</td>
<td>70</td>
</tr>
<tr>
<td>Green Valiant</td>
<td>Northrup King</td>
<td>4</td>
<td>486</td>
<td>68</td>
</tr>
<tr>
<td>Green Top</td>
<td>Takii</td>
<td>3</td>
<td>477</td>
<td>63</td>
</tr>
<tr>
<td>Mariner</td>
<td>Petoseed</td>
<td>2</td>
<td>476</td>
<td>63</td>
</tr>
<tr>
<td>Green Charger</td>
<td>Northrup King</td>
<td>3</td>
<td>474</td>
<td>62</td>
</tr>
<tr>
<td>Galaxy</td>
<td>Asgrow</td>
<td>3</td>
<td>460</td>
<td>57</td>
</tr>
<tr>
<td>Mercedes</td>
<td>Northrup King</td>
<td>2</td>
<td>450</td>
<td>64</td>
</tr>
<tr>
<td>Pinnacle</td>
<td>Takii</td>
<td>3</td>
<td>436</td>
<td>67</td>
</tr>
<tr>
<td>Emperor</td>
<td>Northrup King</td>
<td>4</td>
<td>434</td>
<td>64</td>
</tr>
<tr>
<td>Commodore</td>
<td>Northrup King</td>
<td>3</td>
<td>433</td>
<td>59</td>
</tr>
<tr>
<td>Lancelot</td>
<td>Petoseed</td>
<td>3</td>
<td>425</td>
<td>64</td>
</tr>
<tr>
<td>Brigadier</td>
<td>Petoseed</td>
<td>3</td>
<td>414</td>
<td>61</td>
</tr>
<tr>
<td>Packman</td>
<td>Petoseed</td>
<td>4</td>
<td>396</td>
<td>57</td>
</tr>
<tr>
<td>Sprinter</td>
<td>Northrup King</td>
<td>3</td>
<td>390</td>
<td>62</td>
</tr>
<tr>
<td>Green Duke</td>
<td>Northrup King</td>
<td>3</td>
<td>390</td>
<td>63</td>
</tr>
<tr>
<td>Commander</td>
<td>Northrup King</td>
<td>3</td>
<td>375</td>
<td>62</td>
</tr>
<tr>
<td>Top Star</td>
<td>Northrup King</td>
<td>2</td>
<td>365</td>
<td>60</td>
</tr>
<tr>
<td>Premium Crop</td>
<td>Petoseed</td>
<td>3</td>
<td>361</td>
<td>65</td>
</tr>
</tbody>
</table>

*All varieties were planted in spring 1989, missing years are due to lack of seed or release of new varieties.*

(Ölson, Vegetarian, 89-12)

B. **Comparative Yields of Watermelon Fruit Types.**

Three types of watermelons are grown in Florida: standard, icebox, and seedless. Standard and icebox melons are differentiated by weight; standard melons range from 18 to 35 pounds each, whereas icebox melons range from 6 to 12 pounds each. Triploid or seedless melons are characterized by the absence or near absence of hard seeds. Fruit weight within each type is influenced by variety, season, cultural management practices, time of harvest, and possibly other factors.

Some growers considering growing seedless watermelons have expressed concern that yields from seedless melons may not be as high as those from standard varieties. In theory, however, yields from seedless melons should be higher than those from standard melons because more fruit are set on each plant. Developing seeds restrict fruit set in standard and icebox watermelons, therefore, the increased fruit set in seedless watermelons is related to the absence of seeds.

To determine the effects of watermelon fruit type on yields, the data shown in Table 1 were gleaned from recent IFAS variety trial results.
Table 1. Yields of standard, seedless and icebox watermelons.

<table>
<thead>
<tr>
<th>Location</th>
<th>Season</th>
<th>Standard</th>
<th>Seedless</th>
<th>Icebox</th>
<th>Yield (cwts/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leesburg</td>
<td>Spring 1988 (20)</td>
<td>464</td>
<td>---</td>
<td>(8) 402</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spring 1989 (14)</td>
<td>537</td>
<td>(30) 525</td>
<td>(7) 385</td>
<td></td>
</tr>
<tr>
<td>Bradenton</td>
<td>Spring 1988</td>
<td>---</td>
<td>(16) 586</td>
<td>(16) 439</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spring 1989</td>
<td>---</td>
<td>(30) 657</td>
<td>(10) 450</td>
<td></td>
</tr>
<tr>
<td>Quincy</td>
<td>Spring 1987 (25)</td>
<td>408</td>
<td>(4) 684</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>470</td>
<td>613</td>
<td>419</td>
<td></td>
</tr>
</tbody>
</table>

*Numbers in parenthesis refer to the number of varieties in the average yield.

Unfortunately, only two direct comparisons between yields of standard and seedless watermelons were found. In spring 1987 at Quincy, average yields from four seedless varieties were far higher than the average yields from 25 standard varieties. On the other hand, average yields from 14 standard varieties and 30 seedless varieties were about equal at Leesburg in the spring of 1989. Yields of icebox-type melons at Bradenton were less than those from seedless melons and less than those from standard melons at Leesburg in spring 1988 and 1989. Average yields over three locations indicate that yields of seedless varieties were higher than those of standard varieties which in turn were higher than those of icebox varieties.

The average fruit weight data presented in Table 2 support the view that the higher yields of seedless varieties are the result of greatly increased fruit set since average fruit weight was only about two-thirds of that of standard varieties also is indicated because average fruit weight was less than one-half of that of standard melons whereas yields were only slightly less that those of standard melons.

Table 2. Average fruit weight of standard, seedless, and icebox watermelons.

<table>
<thead>
<tr>
<th>Location</th>
<th>Season</th>
<th>Standard fruit weight (pounds)</th>
<th>Seedless fruit weight (pounds)</th>
<th>Icebox fruit weight (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leesburg</td>
<td>Spring 1988</td>
<td>18.6</td>
<td>---</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>Spring 1989</td>
<td>21.8</td>
<td>14.1</td>
<td>8.6</td>
</tr>
<tr>
<td>Bradenton</td>
<td>Spring 1988</td>
<td>---</td>
<td>13.8</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td>Spring 1989</td>
<td>---</td>
<td>13.0</td>
<td>9.2</td>
</tr>
<tr>
<td>Quincy</td>
<td>Spring 1987</td>
<td>23.9</td>
<td>17.4</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>21.4</td>
<td>14.6</td>
<td>9.3</td>
</tr>
</tbody>
</table>

The data presented here support the view that watermelon yields are highest in seedless types, intermediate in standard types, and lowest in icebox types. Greater fruit set accounts for the higher yields obtained from the seedless types. It is hoped that additional data will be available soon to verify these conclusions.

(Maynard, Vegetarian 89-12)

C. Reducing Internal Bruising During Tomato Handling.

Postharvest handling of perishable crops requires careful coordination and integration of the various steps from field to consumer, since mechanical damage is the leading cause of quality loss at wholesale and retail levels for many commodities. As tomatoes ripen and soften during typical handling and shipping operations,
greater care must be taken to minimize mechanical damage such as bruises, cuts, punctures, abrasions and internal bruising. Over 75% of Florida tomatoes are shipped out of the state; therefore ways of avoiding or reducing mechanical damage are of great interest to the Florida tomato packer/shippers.

Internal bruising (IB) becomes apparent after the tomato is nearly fully ripe; the consumer will notice the damage at slicing, which may affect future sales. It has been described as a breakdown of the locular gel from the normal clear, pink color to a cloudy, yellowish color. This report will focus on studies performed this past year for three tomato cultivars to establish maximum drop heights which should not be exceeded at transfer points in order to avoid unacceptable incidence of IB during tomato handling. Dr. Jeff Brecht, Vegetable Crops Dept., was principal cooperator.

Three cultivars were hand harvested in commercial fields in the Ruskin/Bradenton areas: 'Solar Set' and Northrup-King 4459 at the mature green (MG) stage and 'Sunny' at MG and breaker (BR) stage. The tomatoes sampled were of medium size (6X6 size) and were placed directly into polystyrene cell pack trays to avoid damage and returned to the laboratory in Gainesville the same day.

Groups of 20 tomatoes were individually dropped from approximately 4, 8 and 12 inches at MG and BR ripeness stages. For each drop height and ripeness stage, twenty fruits were dropped once on opposite sides at the fruit equator, and 20 fruits were dropped twice on the same location at the equator. Following the respective drop treatments, the tomatoes were held at about 73 until at the firm, red-ripe stage. At this point they were evaluated for internal bruising by slicing through equator.

Analysis showed that incidence and severity of IB increased with increasing drop height, and that tomatoes at BR stage were more susceptible to IB. For MG fruits, regardless of cultivar, a single drop from 8 inches was sufficient to cause 5 to 45% of the tomatoes to have IB; a single drop from 12 inches caused 30 to 45% IB. For BR fruits, a single drop from 4 inches caused from 63% to 73% IB; from 8 inches, 60% to 100% of the tomatoes had IB. Two drops at the same location generally caused more IB than a single drop for all cultivars. Of these three cultivars, 'Sunny' was least susceptible to IB, followed by 'Solar Set' and 'NK-4459'.

Although a handful of cultivars account for the majority of tomatoes packed in the state, most packinghouses handle several cultivars during the course of a season. All handling operations should be evaluated from the perspective of reducing and eliminating transfer points which might cause mechanical damage. IB is a "hidden" damage, the extent of which truly reflects on the care taken during handling. Minor modifications at transfer points, such as lowering drop heights, coordinating transfer velocities and adding padding materials to contact surfaces can cause significant reduction in the amount of IB and other damage incurred during harvest, handling and packing operations.

(Sargent, Vegetarian, 89-12)

III. PESTICIDE UPDATE

A. Limited Use Label for Dual on Cabbage.

Third Party Registrations, Inc. (TPR, Inc) has announced the acceptance of a limited use 24 (c) label allowing the use of Dual 8E on transplanted, tight-headed cabbage. The supplemental labelling is for Special Local Need for distribution and use only within Florida by persons who have signed authorization and waiver agreements with TPR, Inc.
To obtain proper labelling allowing use of this product a grower must contact the following:

TPR, Inc.
P. O. Box 140097
Orlando, FL 32814-0097
Telephone: (407) 898-4057

(Stall, Vegetarian, 89-12)

IV. VEGETABLE GARDENING

A. New Record Set for Jicama.

A market-gardener in Archer, Florida has just established a new state record for the largest jicama root grown in Florida. Kathy Bergsma weighed one in at 2 pounds, 3 ounces. The old record for jicama was a root weighing 6 ounces grown in Palm Beach County. Before one gets the impression that these are big jicama roots, keep in mind that roots over 50 pounds have been reported in other areas. So this particular record likely will not stand long. In fact, Kathy says she will be out to break her own record next year.

Kathy decided to try a few plants in her market garden this past spring, so she ordered a few seeds from a seed company catalog and grew about 500 plants. What she discovered was a new crop for this area, and quite possibly a profitable one. So far she has had good luck selling the "roots" of her labor at the wholesale price of 75 cents per pound. The current retail price for fresh jicama roots at local supermarkets is around $1.50 per pound.

According to Kathy, the jicama was not too difficult to grow. On April 15, she spaced the seeds 18 inches apart within each row, and placed 2 rows on each 4-foot wide elevated bed. She then kept the plants growing by fertilizing and watering when necessary. Although the plants were trailing (resembling pole beans), they were not trellised, as is usually suggested. A few caterpillars feeding on the foliage were the only problem encountered, and since the plants were not devastated by their feeding, no control measures were taken.

Roots were dug December 1, 1989. While the largest was just over 2 pounds, most averaged about ½ to 1 pound in size. A major concern was the lack of uniformity in shape. The ideal jicama root is top-shaped, similar to a beet or turnip. However, Kathy's crop included many which were doubled, split, elongated, and otherwise off-shape. Quite a few roots had secondary roots attached which had to be trimmed in preparation of the roots for marketing.

Since most of the jicama roots will be sold through the Alachua County farmer's market, further sales (retail) can be monitored. Hopefully, the demand will increase for this new but delectable vegetable. Due to its sweet flavor, much like that of an apple, jicama should prove popular as a snack item, salad ingredient, as well as for use in cooked dishes. No matter if it doesn't, says Kathy, she still has her state record, and for now, that is sweet enough.

(Stephens, Vegetarian, 89-12)

Prepared by Extension Vegetable Crops Specialists

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