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I. NOTES OF INTEREST

A. New Publications

Research Report GC 1981-9, Exploratory Investigation on the Response of Mulched, Staked Tomato to Drip Irrigation, Tube Placement, and Type and Quantity of Fertilizer by A. A. Csizinszky and A. J. Overman is available from the Bradenton AREC, Bradenton, FL 33508.

(Maynard)

B. FSHS Vegetable Section Report

Twenty-five research papers were given in the Vegetable Section of the Florida State Horticultural Society (FSHS) during its 94th Annual Meeting at Lake Buena Vista, November 4-6, 1981. Jim Stephens, Extension Specialist, Gainesville, presided as sectional VP. The newly elected Vegetable Section VP is Paul Everett, Professor of Soil Science at ARC, Immokalee. The best paper award for the 1980 vegetable section was presented to D. J. Pieczarka, formerly of AREC, Belle Glade, for his paper, "A new race of Helminthosporium turricum and reacting sweet corn hybrids to the pathogen." In the Garden and Landscape section, the best paper award went to J. M. Stephens, Marcia Kelt, and Nancy Seely, for their paper, "The Jacksonville Urban Gardening Program." The 1982 meeting is scheduled for the Carillon Hotel, Miami Beach.

(Stephens)

II. COMMERCIAL VEGETABLE PRODUCTION

A. Update on Bush Bean Row Spacings

Row spacings for mechanically harvested bush beans have been limited in past years due to the side reel harvesters in use. With the advent of front reel bush bean harvesters higher density populations of beans are now possible.
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Studies have shown that doubling the plant populations, that is planting on 18-inch rows instead of 36-inch rows, will increase the yield per acre tremendously. Many growers, especially in South Florida, have already started to move to this closer row spacing.

Caution should be used in recommending closer row spacings in bush beans. One problem that immediately is a concern is how do cultural practices and pest populations react in higher density plantings, and will pest control practices in use now be effective in the thicker canopy of the higher populations.

Fortunately, many of these questions have been anticipated and research is in progress to answer these problems.

Ken Pohronezny and Bob McSorley, at the Homestead AREC reported on their work this year at the Florida State Horticultural Society.

Joan Dusky at AREC Belle Glade, is working on the weed aspect as is Steve Kostewicz in Gainesville.

The results presented at the Florida State Horticultural Society this year by Steve Kostewicz et al. gives some interesting information on weed populations and weed control methods as it affects yields of bush beans at various between row spacings. With high weed pressure there was no advantage in higher density beans, however, with only one cultivation, significant differences were seen between the yields of the various row spacings. However, a second cultivation, just before bloom reduced yields in 12 inch-row spacings.

Work is still in progress to determine the interactions of in row spacings, cultivations and herbicide applications.

For more in depth information on these aspects, I suggest you read the papers when they are published, or contact the authors.

(Stall)
B. Re-Fertilizing Full Bed Mulched Tomatoes

Nearly all of the commercial tomato acreage in Florida is produced with the full bed mulch system. Approximately 70% of the harvested acres are irrigated by seep irrigation, 27% by sprinkler, and about 3% by the drip method. In periods of excessive rainfall, as was encountered with this fall crop in the seep irrigated areas, significant leaching occurred in fields which had less than adequate drainage. It is believed that most of the bed placed and some of the band placed nutrients were dissolved and carried away when beds became saturated and the water raised.

Severe leaching did occur this fall and growers were faced with the potential of "yellow fields" and low yield. The earlier the problem was detected the more effectively a corrective program could be initiated. Growers who live with their crop usually spot the tell tale signs of growth slowdown, loss of leaf color, and poor set of fruit in the case of tomatoes, peppers and eggplant long before the emergency level is reached.

How can a vegetable grower replace lost fertilizer to a mulched bed when the crop is growing in the bed? With drip irrigation, most of the nitrogen and potassium is usually supplied in soluble form during water application, thus "replacement" would not be a problem. Usually all of the micro-nutrients and phosphorus are applied in the soil during bed formation when drip is used.

In sprinkler irrigated areas, soluble fertilizer can be metered into the system during watering, too. Mulched beds watered by sprinkler are usually well perforated, thus, the nutrients can be carried into the bed fairly readily. This method also feeds weeds and may require added expenses in herbicides or cultivation.

Seep irrigated crops require a different strategy. A small portion of the (NK) nutritional needs can be supplied by foliar sprays but the cost could be prohibitive for a crop at mid season. If we can assume that a tomato crop one month from first harvest may need more than one half its total
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N & K to provide for satisfactory yields and quality then approximately 90-100 lbs of nitrogen and 120 to 130 lbs of potassium may need to be replaced.

What are the alternatives for growers using seep irrigation?

1. Monitor salt levels in the beds frequently. Inexpensive soluble salt meters are available and easy to use. Spot problem fields early to avoid crisis.

2. Insure good drainage and rapid removal of excess rain. Beds should not be flooded at any time. Flooding can rapidly suffocate roots, encourage root rotting organisms and disease, as well as leach valuable nutrients.

3. Fertilizer can be applied by hand or machine in a puncture and replacement method or sidedressing close to the outside of the bed wall. The bed puncture method may be the most effective but most labor intensive method. In a 7260 lineal foot-row acre approximately 500 lbs of an 18-0-25 fertilizer would need to be applied to replace this 90-0-125 amount of N and K₂O.

(a) If the spots were spaced 18 inches apart, 1.5-oz of material should be placed in each of the 66 punctures per hundred lineal foot of bed (HLF).

(b) If the spots were spaced 24-inches apart, approximately 2.2-oz should be placed in each of the 50 puncture spots per HLF.

(c) If the spots were spaced 30 inches apart, approximately 2.5 to 2.7-oz should be placed in each of the 40 spots per HLF.

(d) If the continuous band sidedressing method was selected, approximately 6.5 to 5.8-lbs of the 18-0-25 fertilizer should be applied per HLF.
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Let us hope that we do not encounter these emergency situations again, but if we do, let us be sure that the problems can be detected earlier so that remedial practices can be more effective.

(Marlowe)

III. HOME VEGETABLE GARDENING

A. Know Your Minor Vegetables - Pumpkin

The term "pumpkin" refers to certain varieties of Curcurbita pepo L., Cucurbita moschata Duch. ex Poir., Cucurbita mixta Pang., and Cucurbita maxima Duch., according to Smith and Welch, Proc. Amer. Soc. Hort. Sci., 1963. The varieties called pumpkins differ from those varieties called squashes by having coarser, more strongly-flavored flesh, and rinds that are softer at maturity than the winter squashes but harder than the summer squashes. Local tradition and common usage may dictate that a particular variety is called a squash in one area of the country and a pumpkin in another.

Pumpkins come in many shapes, sizes, and colors. This variation is due not only to the many named varieties, but also to the fact that pumpkins cross-pollinate readily among themselves and with the squashes. Seeds of pumpkins are commonly saved by gardeners.

The most common uses for pumpkins are for jack o'lanterns and for making pies. Some of the more widely grown varieties for these purposes are described here.

For Jack O'Lanterns

'Connecticut Field' - this is the standard general purpose or large Halloween pumpkin which is used more than any other variety for carving into a jack o'lantern. Fruits have a hard orange, smooth, and slightly ribbed skin. The thick meaty flesh is deep yellow in color, coarse textured and sweet. Most will average 15 to 25-pounds after 120-days from
seeding. The blossom scar is prominent, about 1 2/3-inches in diameter. The 3 to 4-inch long fruit stalk is slightly curved, rough, ridged, woody and tough.

Other names sometimes used for this variety are: Big Tom, Canners Supreme, Common Field, Connecticut Cornfield, Connecticut Golden Field, Connecticut Yellow Field, Cow, Eastern Field, Georgia Field, Golden Marrow, Indian Field, Jack O'Lantern, Lake Shore, Large Common Field, Large Cornfield, Mammoth Field, Michigan Mammoth, Pure Gold, Southern Gold, Southern Field, Vermont Pumpkin, Western Field, Yankee, Yankee Field and Yankee Pie.

It is used for making pies, canning, stock feed and jack o'lanterns.

'Big Max' - Matures in 120-days. Best of the big ones for Florida gardens. Skin is pinkish orange, slightly rough in texture, and about 3 inches thick. Jumbo size pumpkins often reach 70-inches in girth and 75 to 100-pounds. Although best suited for jack o'lanterns, the flesh is suitable for making pies.

'Big Moon' - Matures in 110 to 120-days. Although the flesh is suitable for pies, it is grown for show and making jack o'lanterns. Some of these may reach 200-pounds under ideal growing conditions. These huge pumpkins have a medium orange color, slightly rough texture, and are evenly ribbed.

'Jack O'Lantern' - Matures in 110 days and is about the right size for a small jack o'lantern (grows about the size of a man's head). Deep yellow, slightly elongated pumpkins average about 10 to 15-pounds. Special selection out of 'Connecticut Field'.

'Funny Face' - A hybrid variety good for small jack o'lanterns and pies. Suited to small gardens due to semi-bush plants. The short-vine growth is only about 5-feet wide. Matures early (95 to 100-days). Pumpkins are bright orange and average 10 to 15-pounds.
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'Spirit' - Also a semi-bush variety which produces 12-inch diameter fruits with deep orange color. Matures early (100 days). Good for both small jack o’lanterns and pies.

For Pie Pumpkins

'Small Sugar' - Also known as New England Pie, Boston Pie, Early Sugar, Golden Sugar, Mothers Famous Pie, New England Pie, New Yellow Sweet Potato Pie, and Yum Yum. This is the most popular and widely grown pie pumpkin throughout the northeastern section of the country.

The pumpkins are small averaging only 6 to 7-pounds. Shape is nearly globular, flattened top and bottom, ribbed, and somewhat depressed. Blossom scar is prominent and corky. Skin color is reddish orange, entire fruit may be finely speckled with minute dark brownish dots. Mature in 110-days.

'Cinderella' - Bush type, 10-inch, globe shaped, smooth bright orange, maturing in 95-days.

'Triple Treat' - Bright orange, uniformly round fruits weigh 6 to 8-pounds and have hull-less seeds.

'Spookie' - An improved 'Small Sugar' type, averages about 6 to 7-pounds and matures in 110-days from seeding. Great for pies.

'Winter Luxury' - Resembles 'Small Sugar' but has an outside skin with a fine gray-tan netting which looks like the netting on a cantaloupe. Firm thick orange flesh make excellent pies. Averages 8-pounds.

'Cheese' - One of the most popularly grown pumpkins in Florida gardens. Pumpkins are flattened and round, with buff colored, smooth, ribbed skin. The 10 to 12-pound fruits grow on a vine. Matures in 110-days. Not the right color for jack o’lanterns.
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'Kentucky Field' - Similar to 'Cheese' except elongated. Has buff colored, ribbed skin. Orange coarse sweet flesh makes it good for pies. Weighs about 13-pounds.

'Cushaws' - These produce large, elongated fruits, the necks of which are solid, free from seed cavities, and often curved. Seeds are in the bulbous end. Among the strains available are Golden, (yellow skin), Green Striped (striped white and green, and most popular), and White (about 10 pounds).

Growing Suggestions

Time of planting - Since most pumpkin varieties need about 3 1/2 to 4-months to mature, they should be seeded by July 4, to be ready for halloween. Pumpkins planted in the spring (late March and early April) mature in about 100-days and produce best yields. These are harvested in late June and early July, and must be stored until used in October - November. Storage is a problem, for in a test at Gainesville by Halsey in 1975, storage in a dry unrefrigerated location resulted in 50% loss of pumpkins ('Big Max', 'Connecticut Field', and 'Funny Face') by late October.

Pumpkins seeded in the late spring (April 22) and in the summer (May, June, July) are affected in the garden by virus and fungus disease, are impaired by fruit-set problems, and produce smaller size pumpkins. Early August seeding provides the best fall crop for Thanksgiving, but is too late for Halloween in most cases.

Spacing - Most pumpkins, except the bush-type varieties, need at least 5-feet in each direction to spread and grow. Thus, small gardens probably should not include them. Plant 3 to 4 seeds in a hill, then remove all but the strongest plant when they reach 2 to 4-inches tall.

Fertilizing - Pumpkins respond well to liberal amounts of organic compost. A good growing tip is to place one shovelful of compost (or chicken, cow manure), under each hill before seeding. Mix a handful of 6-6-6 fertilizer into
each hill when preparing. Sidedress with a handful of 6-6-6 every 3-weeks or as needed.

Pollination - All pumpkins have both male and female flowers on each plant. Bees are needed to transfer the pollen. When the plant has two small pumpkins about the size of a baseball, remove all others as they form. This allows the two that remain to reach fairly large size.

Storage - Pumpkins keep well for a few weeks, but long time storage of 1 to 4-months is very difficult to accomplish. As has been pointed out by one study done in Gainesville, there was a loss of 50% of pumpkins harvested in late July and stored until Halloween.

Where possible, store them in a dry (70% RH) and cool (50° - 60° F) place. Spread out the pumpkins rather than stacking them up. Decay is the main source of loss.

Some good results have been obtained by curing pumpkins before storing. This was done by keeping them for 10 days at 80° - 85° F and a high relative humidity (80 - 85%).

(Stephens)

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