The VEGETARIAN Newsletter

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Prepared by Extension Vegetable Crops Specialists

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

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VEGETARIAN NEWSLETTER 76-11

IN THIS ISSUE:

I. NOTES OF INTEREST

A. Research Report
B. Color Photography as a Tool in Plant Diagnostics

II. COMMERCIAL VEGETABLE PRODUCTION

A. Soil pH - Determination and Interpretation in Vegetable Production
B. Fertilizer Fieldmen's Training

III. HARVESTING AND HANDLING

A. Squash

IV. VEGETABLE GARDENING

A. Timely Gardening Topics
B. Know Your Vegetables - Pimiento

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THE VEGETARIAN NEWSLETTER

I. NOTICS OF INTEREST

A. Research Report

The third in a series of reports covering vegetable variety responses to planting dates is available for distribution to agents and other interested workers. The report by L. H. Halsey and S. R. Kostewicz is entitled "Seasonal Response of Vegetable Crops for Selected Cultivars in North Florida. III. Okra, Sweet Corn, Sweet Potato".

(Kelly)

B. Color Photography as a Tool in Plant Diagnostics

The old adage that a picture is worth a thousand words holds true in plant diagnostics. Recently, we received a color photograph from an enterprising county agent that proved to be extremely valuable in helping to diagnose a problem with okra. He circled areas on the photograph showing the abnormalities. The photograph of two plants "in site" showed clearly foliar injury from 2,4-D, distinct curvature of the stem and stem cracking at the point of curvature.

Color photography serves a purpose in plant diagnostics next in value only to actual field visits or availability of good plant specimen. It should be used regularly by extension agents and fieldmen needing assistance from people located elsewhere.

(Montelaro)

II. COMMERCIAL VEGETABLE PRODUCTION

A. Soil pH - Determination and Interpretation in Vegetable Production

This is a follow-up of last month's article on the importance of proper management of soil pH for the production of vegetables in Florida. A confusing thing to growers is discrepancy in test values from different labs on the same soil sample. The chance of human error or equipment failure in the lab, even though possible, is remote. Technicians are trained to check themselves for accuracy on a regular basis. Human error is more apt to occur in taking the soil sample.

A "representative" soil sample is an absolute must for best results. It is advisable to take soil samples for pH analysis 2 to 3 months before planting time. To obtain a good sample, growers should divide fields into manageable blocks of about 15 to 20 acres each where soil is uniform. If not uniform, fields should be divided into smaller units to obtain the greater uniformity. Each block should be sampled thoroughly by taking cores at 15 to 25 locations representative of the block. Core depth, usually 6 inches, should be equal to the depth to which the applied lime will be mixed. Soil cores from each block should be mixed thoroughly and a portion taken, properly labeled and recorded before sending to a lab for analysis.

Growers should avoid sampling fields that are too wet or too dry. Either of these conditions may affect pH readings, depending upon the presence or absence of "fertilizer salts" which are primarily acid in nature. The pH of a soil high in soluble salts may be as much as one unit lower than in the same soil low in salts.

Often growers note a drop in pH after a crop is fertilized. This is a fertilizer salt effect. It can be predicted quite accurately by having a KCl pH
test made instead of the more common "water" pH test. Liming recommendations should be based on KCL pH which simulates conditions in a heavily fertilized soil. In its absence, salt level can be determined easily with simple instruments or estimated based on rainfall, etc., and corrections made for it. Where salt levels are found to be very low, it may be safe to assume a drop of 0.5 unit or more after the soil is fertilized heavily. In such a case, additional lime should be applied to compensate for the potential drop in pH brought about by heavy fertilization.

In addition to a good soil pH test, a soil analysis showing levels of calcium (Ca) and magnesium (Mg) is needed. With this information, growers can determine if lime is needed and if so, what type and how much. Most vegetables can be produced most economically at a pH of 6.0 to 6.5. A general "rule of thumb" for our sandy soils is to apply about 200 pounds of lime for every 0.1 unit increase in pH desired. Sandy soils high in organic matter may require more lime than suggested here. The reverse is true for sandy soils low in organic matter.

Liming not only corrects acidity problems, but can supply the nutrients calcium and magnesium. Having determined a need for lime, the next question is "What type?" We have found a Ca/Mg ratio of about 8 to 1 to be satisfactory for most vegetables. If the Ca/Mg ratio is 9/1 or higher, use dolomitic limestone. On the other hand, with a Ca/Mg ratio of 7/1 or lower, use high calcic limestone. If no lime is needed, but soil magnesium is low, it may be applied together with the mixed fertilizer at planting time.

Lime should be applied and mixed well into soil two to three months before planting. In an emergency, it can be applied up to planting time. Late application of lime is better than not liming at all.

Good management of soil pH is a key to successful vegetable production. It need not be looked upon as an area to be handled by "experts" only. Growers can and should learn as much about it as is necessary to manage it intelligently. In this way, "guesswork", often resulting in unnecessary expenditures and possible loss in yield and quality, can be avoided.

(Montelaro)

B. Fertilizer Fieldmen's Training

Fertilizer salesmen and fieldmen keep current in their information through in-house training, reading popular and technical publications, direct contact with extension and research personnel and, of course, attendance at grower meetings. Many also attend scientific meetings, but some of this clientele have expressed a need for a technological update specifically for the service and supply industry.

An initial training meeting will be held December 1, 1976, at the Manatee County Agricultural Auditorium in Palmetto. The Area Vegetable Specialist met with County Extension Agents on September 8 and formulated a program based on the needs of these allied industry representatives. The meeting is open to all Extension Agents, fertilizer salesmen and fieldmen, and other tradespeople who might find the following program of value.

Five of the most important problems have been defined and appropriate speakers have been selected to address these topics. Dr. Herman Breland of the IFAS Soil Science Department will discuss "Why different soil tests confuse growers."
Dr. S. S. Woltz of the AREC-Bradenton will speak on "The influence of liming materials on pH and other nutrients." Dr. Paul Everett of the AREC-Immokalee will treat the topic of "What happens when the soil nutrient solution is out of balance." Dr. James Montelaro, Extension Vegetable Specialist, will cover another important issue with the aid of a panel, G. M. Whitton, County Director, Pinellas County, and D. A. George, County Director, Sumter County. They will discuss "Methods of field diagnosis".

The present status of soluble salt problems in southwest Florida will be expressed in panel form by D. W. Lander, County Director, Collier County; T. Pospichal, Extension Agent, Hillsborough County; R. T. Curtis, County Director, Lee County; R. T. Montgomery, Extension Agent, Manatee County; moderated by the Area Vegetable Specialist, George Marlowe.

There will be no charge for this meeting and meals will be on a Dutch treat basis. Refreshments will be furnished by a commercial company. Handout materials will be supplied by speakers and panelists.

The conference will be evaluated at the end of the meeting by the participants. If a further training meeting is indicated, plans will be generated accordingly.

This unique and important segment of agriculture deserves our very best efforts. The contact they make with commercial growers is usually far more frequent than we can provide in Cooperative Extension. Agents are encouraged to help their local allied industry representatives keep up-to-date. Please let them know of this meeting, 10 AM to 3 PM, December 1, 1976. Programs will be forwarded on request.

(Marlowe)

III. HARVESTING AND HANDLING

A. Squash

Squashes are among the most widely grown and important vegetables in Florida. This crop also is representative of many problems that may occur during harvesting and handling and their possible solutions.

Summer squash types are harvested as soon as the fruit are of edible size and while the skin is very tender and seeds are immature. Repeated harvests are made at 3 to 5 day intervals over a period of several weeks. Future production will be reduced if fruits are permitted to mature on the plants. Size and appearance of the fruit determines the time of harvest. Elongated fruits generally are harvested when less than 3 inches in diameter and under 8 inches in length. Scallop squashes may be 3 to 4 inches in diameter when harvested. Although some markets reportedly desire the more mature squash, fruits larger than this will have hardening skin, maturing seeds, perhaps a pithy interior and will be classified as culls. Fruit may be field-packed or hauled to a shed or packinghouse at the edge of the field or a central location in the area. Picking and hauling containers should be kept free of sand, splinters, or roughness to prevent scuffing or breaking of the tender skin.

Sorting is done to remove fruits having decay, mosaic, insect injury, physical damage or other defects. Fruits are separated into 2 sizes, large and small, with the latter usually considered the best quality. U. S. Standards are
are available for grading, but official inspections are rarely requested. Washing may be done under some conditions to remove sand, but extreme care must be used in handling sandy squash to prevent any fruit damage.

Baskets, crates, or cartons from 5/9 to 1-1/9 bushel size are used as shipping containers and provide adequate protection if used properly. Surfaces should be smooth to prevent abrasion, bulge packing puts pressure on the fruit rather than the container; and loose packing permits rubbing or scuffing damage. Wrapping individual fruit with tissue wraps may provide some protection against abrasion, but the cost-benefit is questionable.

Temperature for transit and storage should be 7° to 10°C (45-50°F). Chilling injury will occur at lower temperatures. The damage will be cumulative, and symptoms will be accentuated if the squash are moved to higher temperatures after chilling has occurred. Surface pitting as a symptom of chilling injury generally appears first as isolated spots, but those coalesce to produce large, irregular sunken areas. These, particularly where skin damage has occurred from rough handling, almost always develop into decayed areas. Damaged tissue or a break in the skin generally is a prerequisite for the development of postharvest decay. Thus, careful handling can reduce decay losses as well as assist in maintaining a good appearance of the fruit. Yellow squashes may develop irregular patterns of more intense color and develop a dull surface as chilling injury increases. Decay, more rapid discoloration of physically damaged fruit surfaces, and wilting are more severe at temperatures above 10°C (50°F). Relative humidity of 90% should be maintained during transit and storage.

Winter squash types generally are harvested when fruits are more mature. If multiple harvests are made, they will be at less frequent intervals than for summer types. Fruit maturity, including compositional changes, as well as size and appearance should determine the proper time for harvesting. A proper combination of sugars and starch is necessary for best eating quality, but there are few external indicators for judging when this occurs. Although skin of winter squashes is more developed than that of summer types, it is still tender and susceptible to physical damage. Only undamaged fruit should be packed.

The most common container for winter squashes is the 1-1/9 bushel crate. Some large winter squashes may be shipped in bulk containers or loose in trucks. Care should be taken to avoid any physical damage.

Transit and storage temperature should be 7° to 10°C (45-50°F). Chilling injury of winter squashes may be severe because of the comparatively longer marketing or storage time and the decay, frequently alternaria rot, which develops following chilling injury. Moisture lose generally is not a problem with winter squashes unless storage is prolonged or conditions are severe. Relative humidity should be maintained above 50%.

(Note: This article was prepared by Dr. B. D. Thompson, Professor, Vegetable Crops Department, University of Florida, Gainesville, Florida.)
A. Timely Gardening Topics

These questions and answers are suggested here for your use in developing periodic (weekly) radio or newspaper shorts. They are based on letters of inquiry from gardeners around the state.

(1) Timely Topic for Week of November 14-20

Question

What could be causing the pods on my bell pepper plants to develop dark, discolored areas along the side? They are not rotting, but just look unsightly.

Reply

There have been other recent reports concerned with this condition in the northern half of Florida. Apparently, it is cold wind injury to the pods. I suspect the pods were located near the top of the plant in unprotected positions. This time of year there have been several days of brisk, cold north and northeasterly winds. Since pepper is a warm-season crop, requiring a daily average temperature of about 75°F, it is susceptible to a variety of low temperature induced problems. This purplish-black skin discoloration (not water-soaked) is one of them. Their edibility is probably not affected to any great extent.

(2) Timely Topic for Week of November 21-27

Question

What is causing the Chinese cabbage in my garden to be soft and bitter?

Reply

At this cool time of year, you should be getting good-quality Chinese cabbage from your garden. Chinese cabbage does best during the short days and cool but mild temperatures of winter. However, when the temperature during the day stays over 75°F for several days, the leaves do become soft and bitter. Best quality is at 60-70°F. At temperatures below 60°F, the plant will send up a seed stalk. In tests, seed stalks appeared following two weeks' exposure to 47°F. Longer days also cause more seeding, so spring planting for early summer production can bring on seeding even though there is no exposure to low temperature.

(3) Timely Topic for Week of November 28-December 4

Question

What is causing my turnip greens to be light yellow colored? I have fertilized them.

Reply

Generally, a pale yellow color instead of the desired green signals a need for more nitrogen fertilizer. However, it is possible, among other things, that you have planted them too closely in the row. I suspect you may have broadcast the seeds on the bed surface which, without proper thinning, would leave them too closely planted.
Researchers have shown that color in turnips fertilized with nitrogen is reduced by increasing the seeding rate. So even though there was nitrogen in the tops, the green color was faded. Crowding may be keeping the sunlight from the leaves where it is needed to cause green leaves.

One further possibility that should be mentioned is that although you may be fertilizing, you may be using a source of nitrogen that does not convert well in cool weather. For example, organic fertilizers need warm weather to decompose and release their nitrogen into a form usable by the plant. Likewise, some forms of inorganic nitrogen, such as ammonium sulfate, must also undergo a chemical change before the plant can use the nitrogen. Unless soil temperatures are high enough, the necessary changes to nitrate may not occur.

(4) Timely Topic for Week of December 5-11.

Question

What are the advantages for using black plastic mulch instead of a natural organic mulch?

Reply

Both kinds of mulches are beneficial to gardening. Plastic is easy to work with, is clean, and does not greatly affect the food chain or the microorganisms beneath it in the soil. Organic mulches such as sawdust sometimes start to decay and cause the microorganisms in the soil to use the fertilizer for sustenance while decomposing the sawdust. Otherwise, a natural, organic mulch is quite satisfactory, and even has a few advantages of its own. Leaves, straw, and hay are porous, so allow better penetration of water than plastic. Also, they are more insulative, so keep the soil temperature more even than under the plastic.

B. Know Your Vegetables - Pimiento

Pimiento, also pimento, (Capsicum annuum L.) is a type of pepper somewhat similar to the bell pepper. Instead of being blocky, however, the fruit (pod) is smooth, conical or heart-shaped, up to 3 to 4 inches long and 2 to 2 1/2 inches at the shoulder. The flesh is very thick, sweet and red to reddish-yellow in color at maturity.

This is the main type used for canning. The outside peel, the seeds, and the tissue around the seeds are removed, so only the interior part of the flesh walls is used. Though pimientos are good sources of vitamins A and C, they are used chiefly for color and flavor in salads, meat products, vegetable dishes, and sandwich spreads with perhaps the most going into pimiento cheese. Large amounts are used for stuffing olives and for coloring salad dressing.

In the processing of the pimientos, the tough skin must be removed. The old Spanish way (it is native to tropical America but was made popular in Spain) was to suspend the pods on sticks and pass them through a fire. The skins were charred by burning, then removed with a rough cloth. Today, while many improvements have been made, the same principle of "roasting" is still used by some commercial companies.

In Florida, pimientos are grown only to a limited extent commercially. Likewise, the bell type is much preferred by home gardeners. Just to the north, however, Georgia has usually been one of the leading states in the nation both in the production and processing of pimentos.
For production in home garden, pimientos should be grown in a manner similar to bell peppers. They may be seeded directly in the garden, or seeded into a seed-bed or appropriate container for transplant production. A pimento seeding is ready for transplanting when 6 to 10 inches high. It may be set bare-rooted or in an individual transplant container such as a peat pot. Allow a bit wider spacing for pimientos than for the bells. Set plants 24-30 inches apart in a 36 to 48 inch wide row.

The main variety used in the South is 'Perfection', or improvements such as 'Truhart Perfection'. 'Perfection' becomes red ripe about 80 days after seeding. Fruits are 3 1/2 inches long, 3 to 3 1/4 inches in diameter, heart or top shaped.

(Stephens)