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

FROM: James R. Hicks, Extension Vegetable Specialist

VEGETARIAN NEWSLETTER 74-11

IN THIS ISSUE:

I. COMMERCIAL VEGETABLE PRODUCTION

A. Obtaining Good Potato Stands
B. Water and the Future of Vegetable Production in Florida
C. "Commercial Vegetable Insect, Disease and Nematode Control Guide" Available
D. Proper Handling of Transplants at Setting Time
E. Control Drift Before It Happens

II. HARVESTING AND HANDLING

A. Machine Harvesting and Tomato Quality

III. VEGETABLE GARDENING

A. Timely Gardening Topics
B. Know Your Vegetables - Goa Beans

NOTE: Anyone is free to use the information in this newsletter. Whenever possible, please give credit to the authors.
A. Obtaining Good Potato Stands

A good stand of healthy plants is the first step toward the production of a good crop of potatoes. It is not uncommon to find the opposite—that is, fields with less than satisfactory plant stands and vigor in the potato-growing areas in Florida. The problem of poor stand is most serious when poor-quality seed is planted during wet, cool seasons. In most cases, the problem can be avoided or, at least, lessened in severity by taking a few, simple precautionary steps.

The most important step in getting a good stand of potatoes is good seed. Buy only certified seed. If the grower feels the seed does not come up to certification standards upon arrival, he should call in an inspector of the Florida Department of Agriculture. After arrival on the farm, potato seed should be protected from adverse weather conditions, especially freezing.

The next step is to treat the seed immediately after cutting. Dr. R. S. Mullin, Extension Plant Pathologist with the University of Florida, recommends Captan (7 1/2%), Dithane M-45 (8%), or Manzate 200 (8%) dust at 1 pound per 100 pounds of potato seed. The seed should be planted immediately after treating. If the planting operation is stopped, cutting and treating should be stopped, also. Treated seed pieces are apt to rot if left unplanted for any length of time.

Briefly summarized, the following are steps to be taken to insure good potato stands:

1. Try to avoid planting into cold, wet soils.
2. Buy high-quality certified seed.
3. Have seed inspected if quality does not appear to meet certification standards.
4. Protect potato seed in freezing weather.
5. Treat seed with a recommended fungicide and plant immediately after treating. Do not continue cutting and treating if planting operation is stopped.

(Montelaro)

B. Water and the Future of Vegetable Production in Florida

The situation in Florida is rapidly changing from an over-abundance of water to one of shortage of this valuable resource. Within the past few years, we have seen water problems develop in areas where vegetables are being produced near highly populated areas. Fortunately, these minor problems have been easily resolved in the past. However, the problem may not be so easy to solve in the future.

In one area of the state, water allocation to growers is being discussed now. It is almost certain that growers in this area and others in Florida will be restricted from using unlimited amounts of water in the future. The problem is a serious one to vegetable growers. They should familiarize themselves with the problem and become involved in the deliberation of all agencies and groups engaged in working out solutions satisfactory to agriculture and other interests. Secondly, vegetable growers should analyze their methods of using water and try to develop alternative ways to use less than they have in the past. Some growers have already succeeded in this. Hastings area potato and cabbage growers are using plastic pipe to replace open, header ditches to deliver water to fields on several thousand acres of land.
By actual tests and grower reports, water usage and costly pumping have been reduced by 40 to 50% with this system.

Research and Extension workers of the Institute of Food and Agricultural Sciences are interested in water usage and are actively working to find solutions to the problem. It will take the cooperation of all interested parties to develop workable alternatives to the water problems of the future.

(Montelaro)

C. "Commercial Vegetable Insect, Disease and Nematode Control Guide" Available

Circular 193H "Commercial Vegetable Insect, Disease and Nematode Control Guide" was revised and is now available for distribution to commercial vegetable growers in Florida. Available funds permitted us to print a very limited supply.

To insure that each county gets its "fair share" of this publication, Extension Specialists have given the Bulletin Room Office a guide list for first mailing. Each county will receive a sufficient number of circulars to meet their needs. Additional copies can be ordered from the reserve supply by letter explaining the request.

(Kelly, Montelaro)

D. Proper Handling of Transplants at Setting Time

Many of the plants used for transplanting purposes are grown by people other than the grower. In some instances, the plants are grown out-of-state. A frequent complaint heard from growers is that he has received plants of poor quality that are not surviving in the field. Perhaps, in most situations, this may be true, but a great deal can be done to the plants after leaving the plant or seedbed which can affect their ultimate survival.

The plants should be kept in a cool environment to prevent overheating, wilting and loss of moisture. The plant grower usually packs and ships plants with the roots wrapped or in contact with moist soil, peat, newspaper, etc., to prevent them from drying.

The ride from plant producer to grower can be a demanding test of the plants' ability to withstand extreme conditions. However, let us assume that up until the time the grower receives the plants, conditions have been optimum for plant survival. Many growers do not adequately care for their transplants after receiving them. The following are some good handling steps which will help maintain the plants' ability to get off to a good start in the field.

(1) Upon receipt of plants, place them in a cool and/or shady situation.

(2) Stack or pile the containers loosely to aid air circulation and to prevent heat build-up in the plants.

(3) Water sparingly, if necessary. It is important to keep plants from drying out but too much water can spread or create disease problems.

(4) Take only sufficient plants to the field to keep ahead of the planting crew. Too frequently one passes a large field which undoubtedly will take a day or two to complete yet all the plants necessary are sitting in the sun along the edges of the field. If the fields are isolated and all the plants must be taken to the
field at one time, it does not follow that the plants have to be set in the sun next to the field.

(5) During "down times" such as lunch, etc., protect exposed plants to prevent heat and dessication damage. Wet burlap sacks can be draped over open bundles and stacks on the transplanter.

The plant that is set in the field from a seedbed usually undergoes a "shock" period because of the severing of roots when pulled, etc. Improper handling during the period from seedbed to production field can add to this shock and can draw further from the vitality of the plant. Any factors the grower can manipulate to improve or help the plant during this period can be to his benefit.

(Kostewicz)

E. Control Drift Before It Happens

Crops for winter production are in the field and actively growing. Many growers are gearing up in some of these crops to apply postemergence herbicides for late season weed control. These growers are reminded to prevent herbicide drift. Each year isolated reports of herbicide drift damage to non-target crops point to careless application techniques. Following a few simple basic rules can minimize potential for spray drift and eliminate some unnecessary (and expensive) problems.

(1) Use the recommended Pressure, Pattern and Delivery for the application equipment (i.e. low pressure, directed band, shielded, etc.).

(2) Don't spray in excessive wind conditions. Don't spray if velocity exceeds 4-5 m.p.h.

(3) If you must spray under moderate wind conditions, use a foam or a spray thickening material to give a coarse heavy droplet pattern.

(4) Make sure the low volatile formulation is used if there is any question as to the nearness of other crops. Use of a granular material might be in order if the application equipment is available.

(5) Know the herbicide you are using and how it will perform under various weather conditions. Some herbicides volatilize rapidly if applied to wet soil on a hot day while others are not affected.

(Kostewicz)

II. HARVESTING AND HANDLING

A. Machine Harvesting and Tomato Quality

Harvesting is the most labor-demanding process in the fresh tomato industry. As labor has become less available and more expensive, IFAS has placed considerable emphasis on developing harvesting machines. At present, machine harvesting is standard practice for a number of Florida vegetables (snap beans, sweet corn, potatoes, celery, radishes, carrots, etc.) and the list is growing. Eventually, all the major vegetable crops in Florida will probably be machine harvested simply because the availability of labor is too uncertain and when labor is available it is expensive. In the past, there has been some opposition to mechanical harvesting of certain vegetables during the transition from people to machine. There is always some resistance to change from within any industry.
Varieties are developed for machine harvesting, but that is only one of many criteria given consideration when a variety is being evaluated. For example, 'Florida MH-1', which was released for machine harvesting, has been subjected to taste panel tests to evaluate taste, color, appearance and texture. Laboratory data have included soluble solids, titratable acidity, ascorbic acid (Vitamin C) and firmness. In all these tests, 'Florida MH-1' has equalled or exceeded the popular Florida varieties. Consumer tests have shown that consumers actually prefer red-ripe 'MH-1's over pink 'Floradel's. Other consumer tests have shown that consumers do not discriminate against 'MH-1's that have been machine harvested.

The amount of fruit damage occurring during mechanical harvesting depends on a number of factors—one of which is the type of machine. The Semi-Harvester developed by Professor Norman Hayslip at IFAS' Ft. Pierce Research Center has repeatedly resulted in less damage than hand harvest.

The vegetable industry does not need to apologize to the consumer for converting to mechanical harvesting. It may be necessary to remain in business. Mechanical harvesting is no reason (or excuse) for offering poor-quality tomatoes if the following basic points are considered.

1. Tomato harvesters do not have potential for selective picking—they are once-over harvesters and pick everything. With the more concentrated fruit set of 'MH-1', the number of immature fruit harvested is relatively small if the harvest is properly timed. Remember, 'MH-1' can be harvested completely ripe with proper handling. Preliminary culling is done on the machine and the tomatoes should be culled as close as possible in order to save the expense of transporting cull fruits and handling them again at the packinghouse. Too many packers get overly concerned about the volume of culls and forget about pack-out volume (rather than pack-out percentage). Enough workers should be provided to adequately grade the produce and insure the integrity of the pack.

2. No machine is better than the operator. Anyone operating a harvester should know the equipment. This means being able to recognize when the machine is operating to full potential (not speed!) and to make adjustments when it isn't. Harvester operators must take conditions (yield, temperature, terrain, graders, etc.) into account when determining operating parameters.

3. Cultural practices are an important part of a tomato mechanical harvesting system. Every step in production (bed shape, fertilizer, variety, etc.) is molded by the type of harvesting to be utilized. Mechanical harvesting on a crop grown for hand harvesting will probably not be satisfactory.

Machine harvesting is not synonymous with poor quality. In order to maintain a viable vegetable industry, many Florida crops are going to be harvested by machine and since tomatoes utilize so much labor, they will probably be among the next commodities to make the switch. However, quality cannot be sacrificed, for a declining market will quickly wipe out any economic advantage to machine harvesting.

(Hicks)
THE VEGETARIAN NEWSLETTER

III. VEGETABLE GARDENING

A. Timely Gardening Topics

These questions and answers are suggested for agents' use in developing periodic (weekly) radio or newspaper briefs. They are based on letters of inquiry from Florida gardeners.

(1) Timely Topic for week of November 17-23.

Question

I want a winter garden, but being new in Florida I don't know what vegetables to plant. What can I grow at this time of year?

Reply

A winter vegetable garden in all parts of Florida should be about as active and busy as in the spring or fall. South Florida gardeners can combine both cool-season and warm-season crops from October through February. Central and North Florida gardeners must plant cool-season crops which will tolerate the low temperatures which occur either occasionally or frequently. Best items for the winter are the root crops, leafy greens and salad greens. English pea is about the only fruiting vegetable to be planted in the colder areas. Common root crops to include are: beets, carrots, onions, radish, rutabaga and turnips. Common leafy greens are: beets, cabbage, chives, collards, mustard, spinach, kale and turnips. Leafy salad crops are: celery, endive, escarole, lettuce and parsley. Other crops include broccoli, cauliflower and strawberries.

(2) Timely Topic for week of November 24-30.

Question

Now can I control slugs in my vegetable garden?

Reply

Slugs are small snail-like creatures that feed on vegetation, rasping off tender tissues and leaving holes or skeletonized areas and a tell-tale ribbon of slime. They are particularly fond of extra-succulent crops such as lettuce and spinach. Slugs often hide in damp, dark places and will congregate under mulch and pieces of wood laid on the ground. Many gardeners report that containers set into the ground and filled with beer attract slugs which crawl into them and drown. However, best bet for control is to use a bait containing metaldehyde (slug bait sold at garden supply stores).

(3) Timely Topic for week of December 1-7.

Question

Instead of dusting and spraying, I plan to use friendly insects to control harmful insects in my garden. How well does this work?
Reply

Biological control utilizing other insects is rarely successful under home garden conditions. Eggs or colonies of ladybird beetles, praying mantises, lace-wing flies and other insects are advertised as putting an end to insect problems. What isn't stated is that some of these predators are limited in the kinds of insects they will eat and that others eat beneficial insects as freely as noxious ones. Praying mantises, for instance, will pounce on honeybees as readily as on cabbage butterflies. In any case, the majority may fly away soon after liberation. The home gardener who buys insect predators to solve his insect problems is likely to be disappointed.

(4) Timely Topic for week of December 8-14.

Question

What must I do to get good white heads of cauliflower?

Reply

Cauliflower heads turn yellow or green when exposed to sunlight. Blanching is necessary to produce white heads of good quality. Until the heads are 2 to 3 inches in diameter, the leaves cup over the heads and shut out sunlight. As the head grows, it pushes the leaves apart so that light gets in and colors the curds or head. To prevent this, you can lap the leaves over the head and secure them with string or rubber bands.

(Stephens)

B. Know Your Vegetables - Goa Beans

The Goa bean (Psophocarpus tetragonolobus D.C.) is also known as Winged Bean and Princess Bean. It is similar in looks and growth habit to the ordinary garden pole bean. The pointed 3 to 6-inch long leaves are produced on weak vining stems. The plant produces a large tuberous root which is eaten both cooked and raw in the Orient. The pods are 6 to 9-inches long and 1-inch broad, and when young, are cooked and eaten like green beans. Seeds are round, green when mature, similar to English peas, but about the size of soybeans.

Goa beans are not grown commercially in Florida or other parts of the United States. They are sometimes found in home gardens where they are grown more as a novelty than as a food crop. Those interested in trying this vegetable should prepare the soil, plant the seed, and care for the plants just as for pole beans.

(Stephens)