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

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THE VEGETARIAN NEWSLETTER

I. COMMERCIAL VEGETABLE PRODUCTION

A. Reestablishing Desirable Moisture Levels Under Mulch

Full-bed plastic mulch culture is relatively new to vegetable growers in Florida. As more crops are planted to more acreage in more areas of the state, problems develop which were not anticipated. The most recent of these is related to reestablishment of proper moisture levels in dry soil that is covered with plastic mulch. Soil that is permitted to become overly dry is indeed hard to rewet.

The simplest solution is to avoid the problem in the first place. First of all, growers should not apply mulch over a dry soil. If a soil is on the dry side, it should be well irrigated before application of the plastic. Furthermore, good soil moisture is necessary for the soil fumigant to be effective.

Secondly, growers should never "cut-off" needed irrigation except at or near completion of harvest and if mulched beds are not to be planted again. If the second crop is to be planted, irrigation should be continued to maintain good soil moisture under the plastic mulch at all times.

What can be done to reestablish desirable moisture levels when a soil is permitted to become too dry? Growers using sub-surface irrigation may succeed in reestablishing good moisture levels by heavy irrigation. In other words, raise water levels in the lateral ditches 2 to 3 inches higher than normal.

In extreme cases, as one observed on a sub-surface irrigated farm, the only alternative was to punch one-quarter inch holes in the plastic and use overhead irrigation. Holes should be punched to each side of the banded fertilizer to avoid leaching. Overhead irrigation for plastic mulched beds should be applied lightly over a period of time to reduce run-off from the plastic and to lessen water-logging of soil in the uncovered middles.

Briefly summarizing, it is easier to maintain adequate moisture levels under full-bed plastic mulch culture than it is to reestablish it. Be sure that the soil is irrigated to field capacity level before mulching and maintain a good moisture level by timely irrigation throughout the period of crop production.

(Montelaro)

B. Exercise Care When Controlling Weeds in Non-Crop Areas

Weed control in areas adjacent to vegetable fields (fence rows, windbreaks, etc.) has become of greater concern to growers in recent years. In some areas of the state, growers have begun to consider these areas when planning their overall weed control program. Many situations, at least initially, involve attempts to control dense woody undergrowth which has developed in these areas. A good many of the materials used are generally categorized as "brush killers". Usually, these are very effective materials, but also are usually very active or toxic to vegetables at very low concentrations. Thus, every attempt should be made to avoid contact either directly or indirectly (drift) with crop plants.

Each year isolated reports of herbicide drift damage to non-target area plants point out the need to insure that careless application does not occur. Following a few simple basic rules can minimize potential for spray drift and can eliminate some unnecessary (and expensive) problems.
(1) Use the recommended pressure, pattern and delivery for the application equipment (i.e. low pressure, directed sprays, large droplet nozzles, 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 an additive such as 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.

Even with the best equipment, etc., drift problems can occur if the operator is not alert or intelligent enough to realize what the consequences are. If he does not point the hand gun in the right direction or does not use common sense and care in application, the results can be costly. Growers not doing the actual application themselves should make certain that the operator is qualified and properly instructed as to the do's and don'ts of applying herbicides.

(Kostewicz)

II. HARVESTING AND HANDLING

A. Maintaining Freshness in Vegetables Without Refrigeration

Roadside market and market gardens often operate without a suitable refrigeration unit to maintain freshness of vegetables. The question "What can be done under those conditions", has been asked on several occasions in the recent past. Refrigeration, of course, is the best insurance for this purpose. Even without it there are a number of simple, but effective practices, which will help maintain freshness for short periods of time.

The simplest of these practices is to delay harvest as much as possible consistent with schedules for sale or delivery. The less the time between harvest and the consumer's refrigerator, the less the loss of freshness in vegetables. During harvest and preparation, keep all vegetables out of the sun or drying winds. In addition, handle vegetables as carefully as possible at all times to avoid injury. Vegetables that are subjected to severe injury rot easily from invasion of microorganisms. They also deteriorate rapidly from increased activity in the life processes.

To reduce the incidence of rot from certain microorganisms, chlorine can be used in the wash water. It is available as the common "liquid chlorine bleaches" usually containing 5.25% chlorine. Simply add one and one-half pints of one of the chlorine bleaches to 100 gallons of water. If the water is to be used for more than one hour or so, add 4 or 5 tablespoonfuls more to replace chlorine lost to the air by volatilization. Do not use wash water from one day to the next. Discard it and mix up a fresh batch each time. Chlorine can be used on most vegetables with the exception of lettuce which will not tolerate it. There are no harmful residues from use of chlorine. It evaporates rapidly leaving little, if any, residue or odor.
Finally, fresh vegetables should be stored and displayed in a cool place, never in the sun. They should not be permitted to dry out. If this happens, sprinkle either the vegetables or the floors and walls of the storeroom with water to increase relative humidity. The leafy vegetables and certain others like okra and peppers benefit immensely from intermittent misting or sprinkling. As the moisture film on the vegetables evaporates, they are cooled by a process known as "evaporative cooling".

The suggestions given here will go a long way in helping to maintain freshness of vegetables where refrigeration is not available. In fact, most of the practices also should be used even by operators who are fortunate enough to have refrigeration.

(Kelly and Montelaro)

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 June 13-19

Question

What has caused the stem on one of my squash plants to be flattened rather than round?

Reply

You probably are describing a freakish condition called fasciation. Many kinds of plants, including vegetables, are affected. The symptoms are similar, no matter which kind of plant is involved. On lima beans, the stem of the main lateral is flat from one-half to one inch wide and streaked with ridges. Small bean pods are produced along the flat stem, seemingly at any point. Leaves are regularly shaped and colored. Multiple flowers form at the tip end. A similar description could be written for yellow straightneck squash, where it also has been observed.

The cause has not been determined. Some reports say the condition is inherited, while others indicate an over-abundance of nutrients contribute to disorder. In any event, fasciation is not a serious problem and is rarely seen in gardens.

(2) Timely Topic for Week of June 20-26

Question

While traveling through North Florida a few weeks ago, I bought some sweet corn at a roadside stand. Although white, it was extremely sweet and delicious. Could you identify this corn and where I might get seed?

Reply

While most sweet corn is usually sweeter when purchased close to the point of production, chances are the outstanding one you bought is a white hybrid called 'Silver Queen'. In addition to its outstanding eating quality, it grows well
throughout the state, and seeds are generally available in most garden seed and supply stores or through seed catalog orders; therefore, it is an excellent choice to grow in the garden.

Typical ears are eight inches long having 14 rows of kernels well filled to the tips. Seven feet high plants are somewhat taller than most other common varieties grown in Florida. It is susceptible to leaf blight disease. If a yellow variety is planted within 1/4 mile of the white variety, yellow kernels may be produced among the white kernels.

(3) Timely Topic for Week of June 27 - July 3

Question

Can you tell me why many of the ears of corn I grew in my garden were undeveloped at the tip end?

Reply

This condition has been observed quite often, not only in gardens but also in large commercial plantings. Several explanations have been given for the cause of this condition: (a) potassium deficiency; (b) destruction of foliage by leaf blights, with correspondingly lowered food manufacturing capacity; (c) cool temperatures during ear maturation period; and (d) drought.

Corn is cross-pollinated by wind blowing pollen from the male flowers (tassels) at the top of the plant to the female flowers (silks) about midway up the stalks. Each kernel develops from an individual "pollinated" silk. Silks develop near the middle and base of the ear first, with those at the tip developing last. Under the unfavorable conditions already mentioned, those kernels pollinated first (middle and base) take precedence over those pollinated last (at the tip).

(4) Timely Topic for Week of July 4 - 10

Question

What is causing my tomato leaves to curl up?

Reply

Distorted leaf shape is usually related to virus infection or chemical spray injury. However, in this case it appears your tomato plants have a frequently encountered condition imaginatively called tomato leaf roll. It is so common a disease that it can be found in almost any field and most gardens during the latter half of the season in Florida. It does not develop markedly on an individual plant until about the time of fruit-setting. Plants show an upward rolling of the leaflets of the older leaves on the lower half of the plant, and to some extent the top leaves. The leaflets are cupped, with margins touching or even overlapping. They are firm, leathery and thicker than normal leaves. The overall growth of the plant does not seem to be greatly affected, and yields are about normal.

The cause is not fully known. It appears to be more common on staked and pruned plants than on those that are not. Also, it is very common when excessive rainfall keeps the soil over-wet for a prolonged time. Some varieties are characteristically curled due to genetic causes.

(Stephens)
B. Know Your Vegetables - Kale

Kale (Brassica oleracea var. acephala) is a cool-season cooking green somewhat similar to collard and non-heading cabbage. Kale is also called "borecole". "Kale" is a Scottish word derived from coles or caulis, terms used by the Greeks and Romans in referring to the whole cabbage-like group of plants. The German word kohl has the same origin. The Scotch varieties have very curled grayish-green leaves.

Kale is native to the Mediterranean or to Asia Minor. Kale was introduced to America from Europe at least as early as 1969. Kale is not a big commercial crop in Florida, but is found in about 1 out of 10 home gardens. Most southern gardeners, including Floridians, have preferred collard to kale.

Kale produces seed in the second year. It is grown from seed as an annual. Culture is similar to that for cabbage and collard. Throughout Florida, it can be seeded or transplanted from September through March with fairly good results. For best results, it should be planted so that harvest takes place in the coolest months. For home use, some of the leaves are stripped off as needed; the plants then continue to produce more leaves. It takes about 2 1/2-3 months from seeding to harvest. The main problems are those that occur on cabbage and collards. Because of the curly leaves, worms are more difficult to remove.

Among the varieties listed by seed companies are 'Blue Curled Scotch', 'Dwarf Siberian', 'Dwarf Green Curled Scotch', 'Dwarf Blue Scotch', 'Imperial Long Standing', 'Siberian', 'Spring', and 'Flowering Kale'. The latter is very attractive for landscape planting.

(Stephens)