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

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I. COMMERCIAL VEGETABLE PRODUCTION

A. Mole Cricket Control Under Full-Bed Mulch Culture

A problem that crops up quite often under the ever-increasing full-bed mulch system of culture for tomatoes, peppers, eggplant, strawberries, etc., is serious outbreaks of mole crickets. Damage to young seedlings is severe enough to require resetting or even complete replanting. Unlike open-culture systems which permit treatment after an outbreak of mole crickets is observed, hardly anything can be done under full-bed mulch because the mulch barrier makes it impossible to reach the pest with insecticides.

A mole cricket infestation can develop even in mulched plantbeds treated with the multi-purpose fumigants which usually kill most insect pests contacted. What happens is that mole crickets from untreated areas migrate to the treated areas under the mulch cover after holes are cut into mulch for seeding or transplanting. Judging from the amount of damage observed, it appears that mole crickets like the moist environment under a mulch-covered bed.

The problem can be solved rather simply by the use of a good insecticide application just prior to placement of the mulch cover over the plantbed surface. James Brogdon, Extension Entomologist with the University of Florida, says that aldrin, chlordane, diazinon and Dylox are generally suggested for use in mole cricket control. Mr. Brogdon recommends "broadcast aldrin or diazinon at 2 pounds or chlordane at 4 pounds active ingredient per acre as a spray, dust or granule or a 2% chlordane or aldrin or 5% Dylox bait evenly on the bed surface just prior to application of mulch."

NOTE: Some of the materials listed above are not approved for all crops. Check the label before using an insecticide.

(Montelaro)

B. New Vegetable Variety Circular Available

Circular S-223 entitled "Vegetable Variety Trial Results in Florida 1969-70-71 and Recommended Varieties" was received from the printer last month and is now available for distribution to people interested in commercial vegetable production in Florida. Circular S-223, fourth in a series, supersedes circulars (S-176, S-179 and S-206) on variety trials and recommendations. The circular, edited jointly by the Experiment Station and Extension Service, contains variety trial results from eighteen researchers located at eleven centers throughout Florida, as well as Extension recommendations for vegetable varieties for the State.

The purpose of the circular is to give as much information as possible on vegetable varieties in one publication. It summarizes variety test results for three years. The most promising varieties are listed in table form with comparison against standard varieties. Many of the more important horticultural characteristics are also shown in the table. Anyone looking for information on a variety is apt to find it in this publication.
Circular S-223 is an excellent reference on commercial vegetable varieties for the State of Florida. Not only commercial growers, but county extension agents, seed dealers and other commercial fieldmen dealing with vegetable growers should certainly obtain a copy. It can be obtained from County Extension Offices or by writing this office.

(Montelaro)

C. Spidermite Control in Strawberries

The two-spotted spidermite has been a persistent, serious pest on strawberries in Florida for many years. Spidermites feed on the underside of the leaves by sucking out plant juices with their needle-like mouthparts. The injured foliage turns yellow and then develops into brown blotches as the tissues die. A heavy infestation of mites feeding on the plant can cause a stunting of the plant's growth. The stunting, if severe, can result in a drastic reduction in yield.

Dr. S. L. Poe, Assistant Entomologist at the AREC Bradenton, has been working on management programs for controlling spidermite and insect pests on strawberries, and has recently summarized some of his findings. He states that "Effective management of the two-spotted spidermite on strawberries is dependent upon (1) adequate knowledge of its biology, life history, and population dynamics relative to the crop and (2) judicious use of miticides (acaracides)."

Spidermites are secretive and hide on the under surface of leaves. All stages of the life cycle can usually be found concurrently on the plant. Between egg and adult, there are several stages with an immobile molting phase between each. During the molting phases, the miticides are not as effective as on the active stages of the life cycle.

Fruiting plants are excellent hosts for the mites and large populations are associated with this phase of the plants life cycle versus straight vegetatively growing plants (summer nursery plants). Dr. Poe has listed six key points to consider on management of spidermite populations.

"1. Since mite populations build up quickly in fruiting fields but not in summer nurseries, the plants set into the field in October should be mite-free. A few mites on these plants in the beginning can lead to large populations and serious problems by mid-December."

"2. Where large populations of mites are present, back-to-back sprays 4 days apart should be instituted to "wipe out" the populations. More time is required for a few mites to reach damaging population levels than for many mites to attain the same level, therefore, maintain the population at a low level at all times."

"3. A spray schedule should be based on close observations and remedial action taken at once when needed. A new material, Omite, is now available; however, its use should be governed by common sense and sound judgment."
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(a) Obtain thorough coverage of the entire plant; wet upper and lower leaf surfaces with the toxicant. If necessary, add a sticker and increase gallonage per acre.

(b) Base spray practices upon need and do not delay application.

(c) Keep foliage of plants open when possible through plant spacing and avoid dense, heavy mats of foliage to facilitate application.

"4. Do not rely exclusive on one acaricide for population suppression. Frequently, use of one material alternately followed by a second or a third will result in better population management than any one material alone. This will also avoid maintaining a heavy selection pressure against a single compound. Alternate sprays of Omite, naled and dicofol should provide adequate control."

"5. Do not set strawberries in fields adjacent to garden crops or on lands cleared of such ideal mite hosts as eggplant, since mites readily move from one crop to another."

"6. Use acaricides only according to label recommendations."

Below are listed the recommended materials for use for spidermite control in Florida strawberry production.

<table>
<thead>
<tr>
<th>Insect</th>
<th>Spray (Pounds Material Per Acre)</th>
<th>Min. Days To Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spidermites</td>
<td>dicofol (Keltane 35% WP, 2-3 lbs.)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(Keltane 4E, 1 qt.)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Omite 30% WP, 2-3 lbs.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>naled (Dibrom 8 EC, 1 pt.)</td>
<td>1</td>
</tr>
</tbody>
</table>

The use of trade names in this publication is solely for the purpose of providing specific information. It is not a guarantee or warranty of the products named and does not signify that they are recommended to the exclusion of others of suitable composition.

(Kostewicz)

II. HARVESTING AND HANDLING

A. Shipping Vegetables

Since Florida is beginning a new shipping season, now would be a good time to review some of the shipping practices. Even though some of the commodities are shipped singly, many are in mixed loads. Usually load mixing is done for
buyer or receiver convenience and allows buying in quantities smaller than truck load lots. Probably the most serious problem created by mixing loads is that of temperature incompatibility. Many vegetables are subject to chilling injury at temperatures well above freezing. A partial list of these crops together with recommended temperatures and chilling injury symptoms was published in the February, 1972 Vegetarian. These crops should not be stored or shipped with vegetables which have a recommended temperature of around 32° F. The optimum temperatures for the two types of vegetables differ so widely that quality deteriorates in one or both of the commodities if shipped in a mixed load.

Any commodity being shipped should be at the desired shipping temperature when loaded into the vehicle. Most refrigerated trucks or rail cars have adequate refrigeration to maintain the desired temperature, but these units were not designed for precooling and should not be used to do the initial cooling. Proper loading temperature will become even more critical as the industry moves into palletized (or unitized) loads. More and more receivers are realizing that they cannot afford the cost of unloading by hand. Eventually, shippers are going to be forced either by economics at their end or by receivers to go to unitized loading. Now would be a good time to approach the problems and, along with your customers, begin to look for a solution.

Vehicles should be loaded as rapidly as possible to prevent warming of the produce. Those loads which are shipped under top ice should be iced either as the loading progresses or immediately after loading is completed. In addition to the obvious benefits of refrigeration, ice tends to reduce water loss from the produce.

Proper temperature during transit is the responsibility of the transporter, providing he was given proper instructions by the shipper or receiver and providing the commodity was at a reasonable temperature when loaded. However, it might be worthwhile to remember that it is the packer's name on the carton or box, and whatever happens to the commodity in that container (regardless of who was at fault) will probably reflect on the packer. It would only take a few minutes to instruct the truck driver on temperature requirements for the load and thereby ensuring arrival of the produce in good condition at the terminal.

(Hicks)

III. VEGETABLE GARDENING

A. 1973 Revised List of Recommended Vegetable Varieties for Florida Gardens

**Beans:** Lima Bush - Fordhook 242, Concentrated, Henderson, Jackson Wonder, Dixie Butterpea Lima Pole - Florida Butter Snap Bush - Extender, Contender, Harvester, Provider, Wade, Cherokee (Wax), Kinghorn Wax Snap Pole - Dade, McCaslan, Kentucky Wonder 191, Blue Lake Green Shell - French Horticultural

**Beets:** Early Wonder, Detroit Dark Red

**Broccoli:** Early Green Sprouting, Waltham 29, Atlantic
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Cabbage: Copenhagen Market, Marion Market, Badger Market, Glory of Enkhuizen, Red Acre, Chieftain Savoy

Cabbage, Chinese: Michihli, Wong Bok

Cantaloupes: Smith's Perfect, Seminole, Edisto 47, Gulf Stream, Planters Jumbo

Carrots: Imperator, Gold Spike, Chantenay, Nantes, Waltham Hicolor, Gold Pak

Cauliflower: Snowball (many strains), Improved Holland Erfurt, Snowdrift

Celery: Utah 52-70, Florida Pascal

Collard Greens: Georgia, Vates, Louisiana Sweet

Corn, Sweet: White - Silver Queen
Yellow - Gold Cup, Golden Security, Seneca Chief, Iobelle

Cucumbers: Pickling - Ohio MR-17, SMR 18, Pixie
Slicing - Poinsett, Ashley
Greenhouse - Fertila, Femspot

Eggplant: Florida Market, Florida Beauty

Endive: Ruffec

Escarole: Full Heart Batavian, Florida Deep Heart

Kohlrabi: Early White Vienna

Lettuce: Crisp - Premier, Great Lake Types, Fulton
Butterhead - Bibb, Matchless, Sweetheart, Boston
Leaf - Prize Head, Ruby, Salad Bowl, Black-Seeded Simpson
Romaine - Parris Island Cos, Dark Green Cos

Mustard Greens: Southern Giant Curled, Florida Broadleaf

Okra: Clemson Spineless, Perkins Long Green, Emerald, White Velvet, Louisiana Green Velvet

Onions: Bulbing - Excel, Texas Grano, Granex, White Granex, Tropicana Red Green - White Portugal (or any white varieties), Beltsville Bunching, Shallots (a multipling type)

Parsley: Moss Curled, Perfection

Peas: Garden - Little Marvel, Dark Skinned Perfection, Laxton's Progress
Southern - Blackeye, Brown Crowder, Bush Conch, Producer, Floricream, Snapea, Zipper Cream, Purple Hull Pinkeye

Peppers: Hot - Hungarian Wax, Anaheim Chili
Bell - California Wonder, Yolo Wonder, World Beater, Florida Giant
Special - Cubanelle
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Potatoes, Irish: Sebago, Red Pontiac, Kennebec, Red LaSoda

Radishes: Cherry Belle, Red Prince, Comet, Early Scarlet Globe, Sparkler (white tipped), White Icicle

Spinach: Virginia Savoy, Dixie Market, Hybrid 7, Bloomsdale Longstanding

Spinach, Summer: New Zealand

Squash: Summer - Early Prolific Straightneck, Early Summer Crookneck, Cocozelle, Zucchini, Patty Pan
Winter - Alagold, Table Queen, Butternut

Strawberries: Florida 90, Dabreak, Torrey, Sequoia, Tioga

Sweet Potatoes: Porto Rico, Georgia Red, Goldrush, Nugget, Centennial, Coastal Sweet

Tomatoes: Manalucie, Homestead 24, Indian River, Floradel, Tropic, Walter, Florida MH-1, Large Cherry, Roma (paste)

Turnips: Japanese Foliage (Shogoin), Purple Top White Globe

Watermelons: Large - Charleston Gray, Congo, Jubilee, Crimson Sweet
Small - New Hampshire Midget, Petite Sweet, Sugar Baby
Seedless - Tri-X 317 (Stephens)

B. Know Your Vegetables - Horseradish

Horseradish (Armoracia rusticana) is a hardy perennial usually grown as an annual for the pungent roots. These roots contain an oil which gives the roots a hot, biting, pungent taste. This sharp taste makes horseradish valuable as a condiment.

Horseradish does not grow well in Florida. It grows best in the northern section of the country, and at the higher elevations of the tropics.

Where horseradish is grown, two types are usually found--the "common" and the "Bohemian." The common type has broad, crinkled leaves and high quality roots. The Bohemian type has narrow, smooth leaves, with root quality somewhat less than that for the "common" type.

Propagation is by vegetative means, utilizing side-root cuttings called "sets." Seeds are not used. The side-roots (sets) are removed from the main central root when it is harvested. All small, slender root sets between 8 and 14 inches long and about the thickness of a pencil are removed, trimmed, and stored in a moist, cool place until time for planting in early spring.

Rows are spaced 30 inches apart and plants are spaced 2 feet apart in the row. A furrow 3 to 5 inches deep is dug in each bed. The "sets" are placed horizontally in the bottom of the furrow and a little soil is placed on the bottom end of the root, leaving the top portion uncovered.
A special practice is utilized by horseradish growers to obtain top quality roots. When the largest leaves reach 8 inches long, the soil is dug away from the top end of the main root. While the lower end is left undisturbed, the top and middle portions are stripped of any small roots. Then the soil is replaced. A few weeks later, the practice of stripping is repeated. The result is a smooth root with few, if any, side roots to mar the appearance.

(Stephens)