



Berry/Vegetable Times



August 2003



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Calendar of Events

Aug. 12 and Sept. 9 - Pesticide Testing 9 am at Hillsborough Co. Cooperative Extension Office, Seffner. No pre-registration. Call (813) 744-5519 for details.

Aug. 22—Syngenta Meeting, Ramada Inn Plant City 11:45 am. CEU's and CCA's applied for.

Aug. 26 and 27—AgriTech Educational Session and Trade Show. Arthur Boring Building—Festival grounds . For registration call 813-752-6822. CEUs and CCAs available.

Sept. 3 2003 Florida Tomato Institute. Ritz Carlton, Naples. CEU's available.

Sept. 4 and 5—Annual Joint Tomato Committee Meetings, Ritz Carlton, Naples. For information contact Diana Hester at 407-894-3071.

Sept. 5—Ag. Pesticide Collection Day. US Liquids, 7202 East 8th Avenue, Tampa. Enter at the corner of 8th & Orient Road.

Sept. 21-23 — Annual FFVA Convention, Ritz Carlton, Key Biscayne. For information contact Leslie Curry at 407-894-1351.

From your Extension Agent...

A reminder for blueberry growers who are growing in containers to monitor the moisture level in your pots even though this is the rainy season. Don't rely on Mother Nature alone if you turn off your water system during the rainy months. Pots can dry out very fast in the hot temperatures we have during the summer. What may be enough rainfall to take care of watering plants in the ground may not be sufficient to wet the well draining media in containers. Be sure to actually dig down several inches in the container and see if the potting mix is damp; if not you will need to water. Damage to the bush this year will affect next year's harvest. Damage severe enough to loose leaves and tender new growth can occur in a short time under high temperatures and intense sun if the potting medium dries out. In severe cases you can lose your bush. Keep this in mind and don't forget to keep a check on your plants through the rainy season.

The 2003 AgriTech Educational Session and Trade Show will be held August 26th & 27th at the Arthur Boring Building in Plant City and has a very good program lined up. For the two days there will be a total of 7 CEUs offered for holders of restricted pesticide licenses, with 1 of the credits being CORE . For Certified

Crop Advisors, there are a total of 10 CCA credits being offered. This is a great way to get a major portion of the credits you need in a short time. For information on registration contact the Florida Strawberry Growers Association at 813-752-6822.

In our last newsletter there was a short article on heat stress and illness. This is very important when it feels like a sauna when you walk outside even first thing in the morning. Be sure and drink plenty of fluids and watch for the signs that you, your buddy or coworkers are overdoing it. Early signs are: exhaustion, headache, nausea, chills, muscle weakness or cramps, dizziness or fainting, loss of coordination and severe thirst or dry mouth. If you or someone else has heat stress or illness do the following quickly: move out of the direct sun, loosen clothing and lie down, fan to cool off, wet a cloth and put on the person. Do as much as possible to cool them off quickly to get their body temperature down. Then seek emergency health care.

Take care of yourselves out there!

Alicia Whidden

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Sting Nematode Plagues Local Strawberry Growers during the 2002-2003 Growing Season

Jon Hamill, UF Graduate Student and Don Dickson, Professor, UF Entomology and Nematology Department

Sting nematode is an important disease pathogen of strawberry in the Plant City - Dover region of Florida. This nematode is considered a highly aggressive, virulent plant-pathogen that is capable of causing severe crop damage even at low numbers of less than 10 nematodes per half-pint of soil. The purpose of this article is to show how sting nematode numbers are distributed over the season and at different soil depths, and perhaps most importantly to show why crop destruction and weed management at the end of the strawberry season is critical for sting nematode management. Three different farmer fields were chosen to determine sting nematode numbers. They are listed as Farms 1, 2, and 3. Fields at each farm are being sampled monthly. In September, before fumigants were applied, we initiated sampling at Farm 1. Sampling at Farms 2 and 3 was begun January 2003.

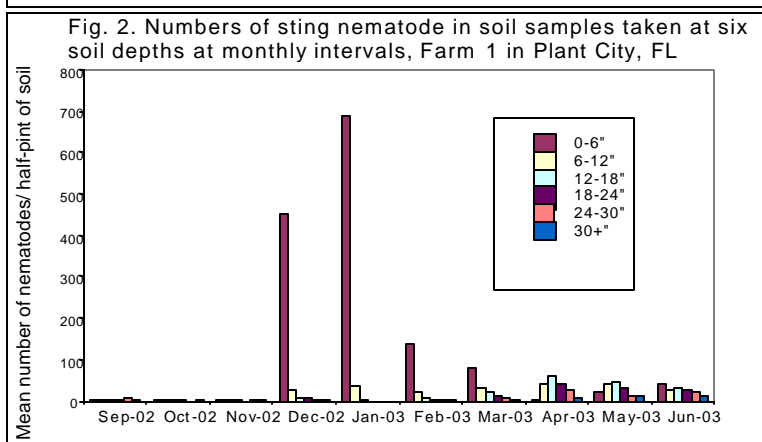
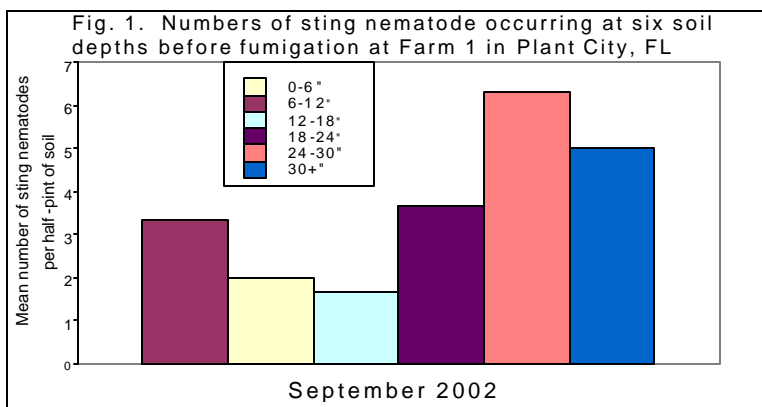


Results obtained over the 2002-2003 season are as follows: 1) During the month of September at Farm 1 sting nematode was detected at depths greater than 30 inches (Fig. 1). At this time, a greater number of nematodes were detected below 18 inches

than in the top 0-18 inches of soil (Fig. 1). 2) The numbers of sting nematode were highest in the upper soil profile throughout the months of November - February. They began decreasing gradually in March; at which point the numbers of sting nematode began to increase at soil depths greater than 18 inches (Figs. 2 - 4). 3) The numbers of sting nematode at all three farms were not very different until the month of June. At this time, Farms 1 and 2 (Figs. 2 and 3) removed the plastic mulch from their beds but did not destroy the strawberry plants nor eliminate weeds after the growing season. Favorable weather and an acceptable food source allowed the nematode numbers to increase. Whereas at Farm 3 (Fig. 4), the plastic mulch was removed promptly after double cropping, plants were destroyed, and the field was disked and planted to a cover crop.

In summary, sting nematode appears to be fairly deep in the

soil at the time of soil fumigation. It is unclear what percentage of these nematodes living deep in the soil profile are killed by soil fumigation or whether they are capable of moving back into the fumigated zone (generally considered to be approximately 12-inches deep when chisels release the fumigant 8-inches deep in the soil). To determine information about the nematode's resurgence in December - February will require additional studies. The numbers of sting nematode that we recovered from all three farms in December - February are considered to be enormously high. This was reflected in the number of severely stunted plants observed at that time. Lastly, it is of great importance to keep the strawberry fields free of suitable hosts for sting nematode after the growing seasons. Crop destruction in a timely manner can prevent a resurgence of nematode numbers late in the season.



Promoting Bee Pollination for Blueberries

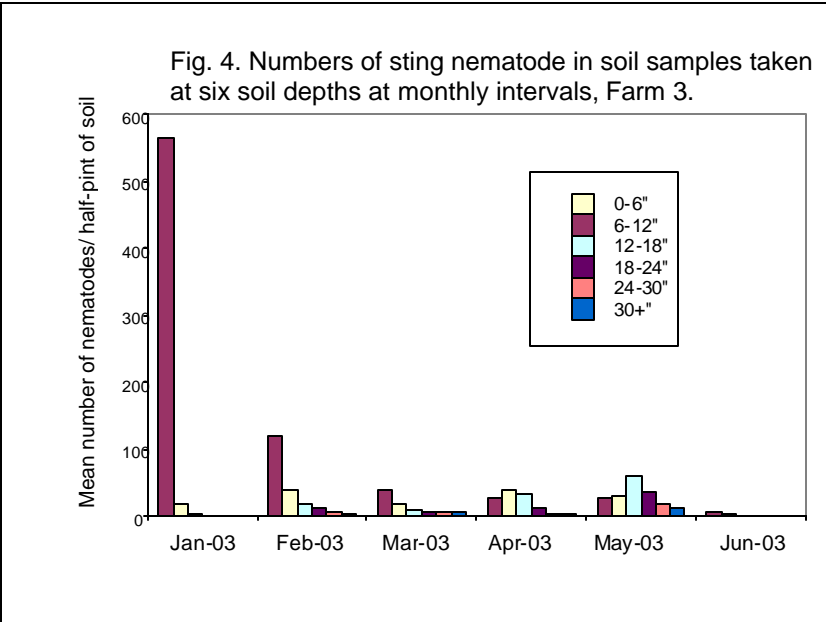
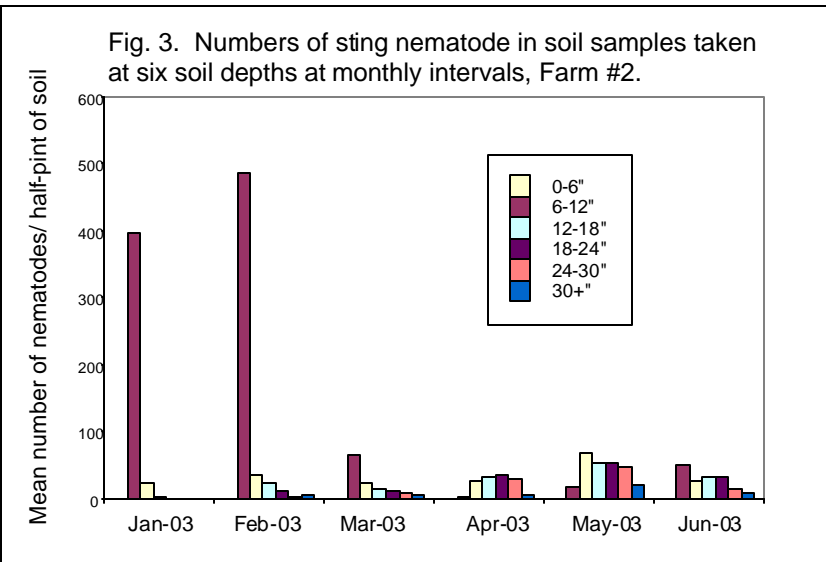
Paul Lyrene, Professor, UF Horticultural Sciences

The Florida highbush blueberry crop, which was harvested in April and May this year,



was about average in size when the state is considered as a whole, although the amount of fruit harvested each year is on an upward trend due to increased acreage. The cold winter and the lack of hard, late freezes favored an above-average crop, but persistent rains and high humidity during the flowering period in north Florida

interfered with bee pollination and reduced fruit set on many farms. Most highbush blueberry varieties require cross pollination by bees. Individual flowers are only receptive to pollen for about 7 days, and flowers that are not visited by bees during their receptive period either set no fruit, or set fruit that is smaller and ripens later than normal. It was apparent from observing farms in Alachua County just prior to harvest that the smaller plantings had better pollination than the larger ones. The likely reason is that wild bees, including



bumblebees and southeastern blueberry bees, were able to pollinate the smaller number of flowers on the small farms during the few hours when the weather permitted, whereas the enormous number of flowers on the larger farms overwhelmed the native bees. Honeybees, which are brought into the fields by growers to pollinate blueberries, were much less effective than usual in north Florida this year because they were kept in their hives by so many rainy days and because the blueberry pollen did not shed well when the

flowers were wet. Few years are so rainy during blueberry pollination season as this year in north Florida, but as farms get larger, growers will be ahead if they do all they can to promote bee pollination.

New Admire2F® Insecticide may be useful in

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 approved to the exclusion of others of suitable composition. Use pesticides safely. Read and follow directions on the manufacturer's label.

Strawberry

James Price, Associate Professor,
GCREC Bradenton

Bayer Crop Science has received a federal registration for Admire 2F® to control aphids and whiteflies on strawberry. The registration provides significant restrictions that limit the product's usefulness in Florida, but it still may be valuable to manage some important problems. Admire® is well known among vegetable growers for its properties to control silverleaf whitefly.

The product may be applied as a foliar spray but a soil application is recommended for best control. Relative to strawberry culture in Florida, the label provides for application via the irrigation system, although strict procedures are established.

A 14-day preharvest interval seriously limits the product's use under Florida's conditions. In most cases this means that farmers may not apply Admire® after late November. Those that do apply the insecticide then may expect aphid and whitefly control for a month to 7 weeks, or through early to mid-January. Admire® applied in this manner is fully systemic. Although little data are available relative to the matter under our conditions, it is unlikely that soil applications of Admire® would seriously interfere with control of twospotted spider mites by *Phytoseiulus persimilis* predators; foliar sprays are harmful to the nymphs and adults.

Since whiteflies presently are not problematic on Florida strawberry, the best use here may be to growers who apply it to the soil 14 days before the first harvest to control aphids that accompanied transplants from the nursery. Doing so will delay, reduce, and possibly eliminate economically important aphid problems. Several other insecticides are available as foliar sprays to control aphids on strawberry, but

most can reduce the efficiency of biological control of twospotted spider mites by *P. persimilis*.

Soil and Water Management for the 2003 - 2004 Season.

John Duval, Assistant Professor,
GCREC Dover

With plants for the 2003-2004 season just two months away from being planted it is time to start thinking about soil fertility. Soil testing should be conducted now to allow for analytical results to be returned and fertilizer and lime orders to be placed. pH is the measure of soil acidity. The soil pH affects chemical, physical and biological properties of the soil. The availability of nutrients in the soil is usually the main concern for growers. While pH affects the availability all nutrients, micro elements (manganese, boron, copper, and zinc) are more severely affected than macro nutrients. The pH range for the production of strawberry is between 6.0 and 6.5 with 6.2 being optimum. Soil test results should give a recommendation for the amount of lime to apply to raise the pH into this range. Liming materials are also beneficial in adding calcium and magnesium to fruiting fields. Lime should be broadcast applied and thoroughly incorporated prior to bed formation.

This is also a good time to begin thinking of your means of soil moisture monitoring for the coming season. Tensiometers, gravimetric sensors (watermark, gypsum blocks), TDRs, and a host of other means are available. Optimal soil moisture for producing strawberries in this area is between 8 and 15 cbars. Using proper water management will produce the highest possible yields from your plants and reduce pumping costs and wasted water. Purchasing this equipment now will give you

enough time to familiarize yourself with their operations. Not only is this a good idea for water management it is also part of a Best Management Strategy from which you can benefit in the future with cost sharing and presumption of compliance with current regulations.

Disease Resistance and Fungicides to be Discussed at AgriTech

Jim Mertely, Plant Pathologist and
Craig Chandler, Professor, GCREC
Dover

Two experiments were carried out last season to evaluate strawberry cultivars and advanced breeding lines for resistance to anthracnose fruit rot (*Colletotrichum acutatum*) and Botrytis gray mold (*Botrytis cinerea*). In each experiment, fungicide applications were manipulated to allow the target disease to develop while suppressing the other disease. A severe epidemic of anthracnose fruit rot developed during the mid-February to mid-May evaluation period. Cultivars in the anthracnose experiment showed distinct differences in disease incidence. Over 90% of the 'Treasure' and 'Aromas' fruit were infected, while losses in 'Sweet Charlie' and 'Carmine' were less than 10%.

Results like these bring to mind the question, "Shouldn't we take advantage of disease resistance when planning a disease management programs?" While the answer is obviously 'yes', much information would be needed to develop fungicide programs for specific cultivars. Look for further information on these topics, and an update on strawberry fungicide labels at the AgriTech meeting. See you there!

Harvest Award Nominations

Celebrating its 10th year as the county's premier agricultural awards program, the 2003 Harvest Awards Luncheon has been scheduled for Wednesday, November 5th at the Hillsborough County Fair. Nominations are now being taken for this year's event. Awards are presented to the outstanding farm family, outstanding agribusiness, outstanding woman in agriculture, and outstanding young farmer, rancher or nurseryman. In addition, two special lifetime achievement awards are also given during the luncheon. Nomination forms are now available at the following locations: Cooperative Extension Service in Seffner, Farm Credit Office in Plant City, Farm Bureau Office in Valrico and the Ruskin Chamber of Commerce. Deadline for submission is October 3rd.

The 2003 Awards Luncheon will pay special tribute to all former Harvest winners in recognition of the 10th Anniversary. The annual luncheon is the kickoff activity for the Hillsborough County Fair which runs from November 5 through 9 on the grounds of the Raymond James Stadium in Tampa. The Harvest Awards were established in 1993 to recognize and celebrate the outstanding achievements in agriculture. The Lifetime Achievement category was added recently to honor the county's agricultural pioneers.

Each nomination must be accompanied by a brief statement and resume of accomplishments. Those wishing more information may call Mike McKinney at the Cooperative Extension Service at 744-5519 ext. 107 or 128.

IR-4 Updates

Based on work by IR-4, a tolerance has been established for residues of the insecticide methoxyfenozide (Intrepid®) in or on cucurbit vegetables (Group 9) at 0.3 ppm;

okra at 2.0 ppm, southern/blackeye pea at 4.0 ppm; and turnip greens at 30 ppm. The regulation became effective May 30, 2003.

In addition, a tolerance has been established for residues of the insecticide imidacloprid in or on popcorn grain (0.05 ppm), popcorn stover (0.2 ppm), strawberry (0.5 ppm), acerola, avocado, canistel, feijoa, guava, jaboticaba, mango, okra, passionfruit, papaya, sapodilla, mamey/black sapote, star apple, starfruit (1.0 ppm), longan, lychee, persimmon, pulasan, rambutan (3.0 ppm), salal (3.5 ppm), and leaves of root and tuber vegetables (Group 2) and legume vegetables except soybean (Group 6), both at 4 ppm. These tolerances replace existing or time limited tolerances already in place for some of these crops. (*Federal Register*, 5/30/03 and 6/13/03).

Pesticide Registrations and Actions

On May 2, the FDACS registered the fungicide Acrobat® 50 WP (dimethomorph) to control diseases in Florida bulb vegetables, cucurbit vegetables, and lettuce. The EPA registration number for the BASF produce is 241-410.

On June 18, the FDACS registered AgroFresh's postharvest tool Smartfresh® (1-methylcyclopropene) for mitigating undesirable ethylene effects on harvested fruit. The EPA registration number for the product is 71297-2. (FDACS PREC June and July Agendas).

Pesticide Potpourri

According to researchers at Ohio State University, consumers could not tell the difference between organically grown and conventionally grown strawberries. Researchers grew the berries under matted row

conditions, and consumers were asked to judge the produce based on taste, looks and smell. The judges were able to differentiate between varieties (*The Grower*, May 2003).



CropLife America and the European Crop Protection Association released results of a study which shows that the average discovery, development, and registration costs to bring a crop protection product to market have increased from \$152 million in 1995 to \$184 million in 2000, a cost eight times higher than 20 years ago. The consulting firm conducting the study attributed the increase primarily to the adoption of new technology, stricter regulatory standards instituted to ensure environmental and consumer protection, and a rise in the amount of data required by regulatory authorities. Also, the development period for a new product (from first synthesis to commercialization) has increased from 8.3 years in 1885 to 9.1 years in 2000 and the average number of molecules screened leading to the introduction of each new product increased from 52,500 to > 139,000 for these same respective years. (CropLife America, *Spotlight*, 5/16/03).