UNIVERSITY OF FLORIDA EXTENSION
Institute of Food and Agricultural Sciences

Berry Times

IFAS

A monthly newsletter of the University of Florida Institute of Food and Agricultural Sciences, Gulf Coast Research and Education Center, and Florida Cooperative Extension Service.
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February 2002

Carolina Geranium Contributes to Spider Mite Problem

Jim Price

Soon after transplants are set, tiny Carolina geranium seedlings begin to appear and by January these weeds can become large. As Carolina geranium plants grow they become excellent reproductive hosts for the twospotted spider mite and the tumid spider mite (the purple-red colored mite), complicating the management of these mites.

Carolina geranium.

Spider mite.

The weed is not such a problem when it grows from a transplant hole in the plastic mulch, because in that position miticide applications will kill resident mites on both the weed and the strawberry. Unfortunately, the Carolina geranium can grow in the row middles, row ends, on field and access road margins and on fallow, recently tilled fields, places not normally treated with miticides. Spider mite populations increase on the Carolina geraniums in these places and transfer to the strawberry crop, insuring a regular re-infestation. The mites can walk from the weeds to nearby strawberry plants or be carried greater distances in air currents on strands of silk they produce.

Leaf inspection.

Good weed management is essential for growers depending on miticides for spider mite control. The condition is not so problematic for growers depending on biological control with *Phytoseiulus persimilis*. This predator easily finds the available mites on the weeds and controls the pest mites. Growers can evaluate their vulnerability to the problem by finding the Carolina geranium on their farm and surveying the underside of the leaves for spider mites. Growers who use biological control should find predators about as often as spider mites. The Carolina geranium problem presents another good reason to consider biological control of spider mites. For more information on spider mite control visit this link on our website http://strawberry.ifas.ufl.edu/spidermites.htm.

New SpinTor® 2SC is a Valuable Tool in Strawberry

Jim Price

SpinTor® 2SC (spinosad), by Dow AgroSciences, recently was approved for use in strawberry to control armyworms, omnivorous leaf tier, strawberry leaf roller, and thrips. This product represents an important addition to the collection of insecticides available to strawberry growers.

Leaf tier caterpillar.

SpinTor® is a new type of insecticide that is a combination of two toxins (spinosins A and D, thus the common name "spinos*ad*") obtained from the fermentation of a soil microorganism, *Saccharopolyspora spinosa* (an actinomycete). It possesses a favorable pre-

harvest interval (PHI 1 day) and re-entry interval (REI 4 hours) and is compatible with many beneficial insects and mites. However, SpinTor® is very toxic to honeybees exposed to direct spray and it should be applied only in the early morning or late afternoon when honeybees are not foraging. SpinTor® is a contact and stomach poison and is not systemic in the plant. A suitable adjuvant and an excellent spraying technique may enhance the ability of SpinTor® to contact and kill thrips in flowers where they are protected.

Growers who employ *Phytoseiulus persimilis* for spider mite management may welcome this product for thrips control, given that no other material now available has this unique combination of thrips control, compatibility with *P. persimilis* and short REI and PHI. When using this product to control caterpillars, the egg or young larval stages should be the target. This timing makes regular scouting of the crop important. Four (6 ounces/acre) to seven (4 ounces/acre) applications can be made to a crop, depending on the rate used. In no case can more that 29 ounces/are be applied to a crop.

The industry is fortunate to have an additional choice of caterpillar and thrips control agents. Good resistance management practices such as scouting, applying SpinTor® only when conditions warrant, and rotating among classes of chemicals are important for the long life of this product in the strawberry industry.

From an Aussie Point of View

Mark Herrington, Sr. Horticulturist (Breeding) – Queensland Horticulture Institute

Some thoughts from 'an Aussie' visiting your enchanting state. Firstly, I am grateful to have had this opportunity. It has been rewarding and stimulating to work with Dr. Chandler and the UF strawberry team at Dover, and to meet a number of growers. The Florida strawberry industry has a major asset in this UF group – as you would all know already. Part of my work here was to work with Dr. Chandler on methods to better select parents and new varieties. One of the first questions that arises in this work is, what should a variety be like?

The bottom line is that the consumer must be happy to buy strawberries; in fact, the consumer should be excited to buy them. Our job, the job of everyone in the production and marketing chain from the breeder, researcher and the grower through the retailer is to offer strawberry fruit that are exciting or at least pleasurable to eat. We, who are lower in the chain, can be happy with a profit, but the consumer only buys strawberries for the experience, so we need to make sure they have a good experience.

We in the strawberry industry know that not all strawberries will give the same experience to a consumer. Now, you will have noticed that different people like different types of apples. The same is true with strawberries. However, while one can choose from a variety of 'named' apples in the supermarket, at present the consumer does not get the choice for strawberries. Consumers should know that different varieties of strawberries give different experiences. Then they can choose the experience (variety) they like. It is better to have to make a choice between this name or that name (variety) of strawberry than between a strawberry and another fruit. A good name for the variety adds to the experience.

The consumer may have to pay more to get their preferred variety, but they will do that if they had a good experience. G'day!

Reminder on using bloom sprays to control Botrytis fruit rot.

Dan Legard

Strawberry blossoms.

As the weather warms up and the strawberries began to flower heavily, I would like to remind growers and consultants about some of the keys for controlling Botrytis fruit rot. Research conducted at the Dover research center has found that fungicide applications during the peak bloom period in February are the most effective way to

Botrytis fruit rot.

control Botrytis. Weekly applications of captan or thiram at full-labeled rate during the last two months of the season can provide excellent control of Botrytis. However during peak bloom periods in February we found that two to four bloom applications of Elevate? and/or Switch? combined with the weekly applications of captan or thiram provided the best control of Botrytis fruit rot. We recommend that growers continue to apply captan with the Elevate and/or Switch applications if they want to also control anthracnose fruit rot. Additional information on controlling Botrytis fruit rot can be found on our website at http://strawberry.ifas.ufl.edu in our Production Guide.

New powdery mildew fungicide in the pipeline.

Dan Legard

Dow AgroSciences is working with University researchers and IR-4 to complete studies needed to bring a new fungicide called quinoxyfen to market. This fungicide is only effective against fungi that cause powdery mildew and is classified as a reduced risk fungicide. This means that it has low toxicity and is compatible with IPM programs. On strawberry quinoxyfen has provided excellent control of powdery mildew in research trials conducted by Dr. Doug Gubler at the University of California - Davis. Quinoxyfen has a unique mode of action for controlling fungi making it an excellent rotation partner for managing fungicide resistance in powdery mildew. This product will probably be called Quintec but will not get a full label for strawberry until 2004-2005. For more information on powdery mildew control visit our website at the following link:
http://strawberry.ifas.ufl.edu/prodguidedis.htm provides control information, and this link will provide a list of fungicide recommendations http://strawberry.ifas.ufl.edu/Strawberry fungicide recommendations 2000.htm.

Petiole Sap Testing

John R. Duval

Monitoring the nutritional status of strawberry plants over the course of the season is critical for optimizing yields. Deficiencies in the early season can decrease yields later in the year. Analysis of plant tissue is the best way to determine how well a fertilization program is meeting the demands of strawberry growth. There are means to determine the plants nitrogen (nitrate) and potassium levels directly in the field. The use of hand held ion specific electrodes (Cardy meters) provide a simple and effective way of doing this. Ten to 15 petioles are removed randomly from actively growing plants then pressed to remove sap from the petioles. This sap is then placed on the electrode and a value in parts per million is given for the specific ion. This information can be used to increase or decrease the fertilization. The sufficiency range of values for N (nitrate) and K are given below. These numbers are a guide. Weather conditions may decrease (if temperatures are cool) or increase (if temperatures are warm) desirable N and K values during December, January, and February.

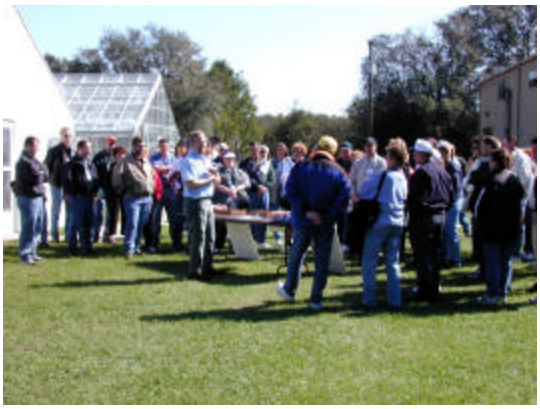
Month	Petiole sap concentration (ppm)	
	N (nitrate)	K (potassium)
Nov.	800-900	3000-3500
Dec.	600-800	3000-3500
Jan.	600-800	2500-3000
Feb.	300-500	2000-2500
March	200-500	1800-2500
April	200-500	1500-2000

Center Update – **Christine Manley**

Our center was recently host to one of the largest tour groups in our history. Garst Seed Company located in Indiana organized a tour of 400 people to GCREC-Dover on February 5th. Guests were introduced to each program involved in our research, and of course, invited to taste our fruit. Each program had a station set up at the front field or near the greenhouses, and the tour proved to be a great success with many compliments and probing questions from the participants. Garst Seed Company specializes in soybeans and corn. Their annual conference is held in different locations throughout the country and always includes an agricultural education day. The participants also visited a tropical fish farm during their tour day. With 3 busloads per hour over 5 sessions, our faculty and staff had their work cut out for them. Photos of the event are on the next page.

John Hogue and Curtis Nagel, in Dr. Jim Price's program, explained the procedure for using biological vs. chemical control of twospotted spider mites.

Dr. John Duval described cultural management practices to the group.



Dr. Dan Legard introduced our guests to diseases that affect Florida strawberries.

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