RUTGERS COOPERATIVE EXTENSION
NEW JERSEY AGRICULTURAL EXPERIMENT STATION

The BLUEBERRY BULLETIN

A Weekly Update to Growers
Dr. Gary C. Pavlis, County Agricultural Agent
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June 8, 2001 **Vol. XVII, No. 8**

AT A GLANCE…

Problem - Solution

Mummy Berry -
- Indar, 2 fl oz/A
- Benlate 50WP, 1.0 lb/A

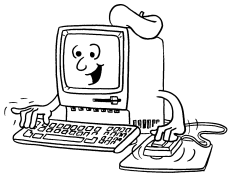
Anthracnose -
- Captan 50 WP 5.0 lb/A
- Captan 80 WP 3.1 lb/A
- Captec 4L 2.5 qt/A
- Ziram 76DF- 4.0 lb/A

Blueberry Maggot
- Yellow Sticky Traps

Aphids
- Provado 1.6F- 3to4 fl oz/A

INTERNET ADDRESS

Click on to the RCE Web site
and see our 'Web Page'.
www.rce.rutgers.edu/pubs/blueberrybulletin



BLUEBERRIES

Insects:
Dr. Sridhar Polavarapu, Extension Specialist in Blueberry Entomology, Rutgers University
Mr. Dean Polk, IPM Agent - Fruit

Leafrollers, green fruitworms, and spanworms: Incidence of leafroller and green fruitworm activity has decreased. All activity is below threshold levels.

Aphids: Aphid populations are higher than last week, with about 80% of samples showing some aphid activity. Aphid populations are above 10% of terminals infested in about 29-30% of samples. Provado 1.6Fhas generally worked well. Diazinon was also used in one monitored field, but showed little to no activity.

Cranberry Fruitworm (CBFW): Trap counts decreased in Atlantic County, but increased some in Burlington County. This is normal, since phenology is always slightly later in Burlington than in Atlantic County. The also means that the flight has peaked in Atlantic County and is peaking in Burlington County. Treatments should be applied during the early part of this week in Atlantic, and by the weekend in Burlington County.

Thrips: Both nymphs and adults have been noted in crinkled leaves and in fruit clusters. Up to 150 to 200 nymphs per bush have been seen on one farm. Thrips are often associated with wild flowers that may be present near ditches and border areas. These hosts may help increase thrips populations that are present in cultivated fields. In fact, it is likely that these insects have been

(Continued on page 2.)

here for a number of seasons, but have gone unnoticed. If growers are concerned about whether their fields have thrips populations, a simple sampling method can be used. Take a white piece of cardboard or other firm white surface, and sharply rap a couple of fruit and leaf clusters against the board 2 to 3 times. Any nymphs that are present will be dislodged and visible on the white board.

Disease and Culture:

By Gary C. Pavlis, Ph.D.
Atlantic County Agricultural Agent

Scorch: Farm visits have made me very aware of the fact that Scorch disease is alive and well in both Atlantic and Burlington Counties. Plants with Scorch disease would be best removed before harvest begins. The best method would be to spray the plant with Provado to kill the aphids, mow down the plant, burn the prunings and treat the stump with Roundup. The stump can be pulled after harvest when the risk of damaging fruit is over.

No leaves: Growers visits this week have revealed many fields with plants that have canes with fruit but no leaves. This is not Scorch. The lack of leaves usually points to a root problem. It could be grubs, it could be root rot, but this year I believe in most cases the lack of leaves is due to grubs. We now can control grubs with Admire in New Jersey. Watch this newsletter for proper timing of application of Admire.

Sincerely,

Dr. Gary C. Pavlis
Atlantic County Agricultural Agent
Editor - Blueberry Bulletin ma

2001 TAILGATE MARKETING OPPORTUNITIES

By Richard W. VanVranken
Atlantic County Agricultural Agent

Farmers interested in learning about this year's tailgate marketing opportunities are invited to an informational/planning meeting on Tuesday, June 19, 2001, 7:30 PM at the Rutgers Cooperative Extension of Atlantic County office in Mays Landing, 6260 Old Harding Hwy, Mays Landing, NJ.

Informational representatives from different locations (Atlantic City, Collingswood, Smithville, Ocean City, and North Jersey) will be on hand to discuss: locations, space, rules, costs and etc. Please join us! For more information call 609/625-0056 and ask for Marilynn.

BLUEBERRY THRIPS: AN EMERGING PROBLEM IN NEW JERSEY HIGHBUSH BLUEBERRIES

By Sridhar Polavarapu

We now know that there are at least two species of thrips present in New Jersey blueberries. These two species, *Frankliniella tritici* and *Scirtothrips ruthveni*, can cause extensive damage to leaves, flowers and potentially to fruit. In addition to these two species, several other species have been collected from blueberries in New Brunswick, Nova Scotia, and Maine from low bush blueberries and in Georgia, Mississippi, Arkansas, and Florida on Southern highbush and Rabbiteye blueberries. These additional species include *Frankliniella vaccinii, F. bispinosa,* and *F. occidentalis*. Several other species of thrips have also been recorded to damage on sparkleberry, which is a related species of highbush blueberry. These thrip species include *Catinathrips vaccinophilus* and *Haplothrips rectipennis.* Except for *H. rectipennis,* all other thrips are flower or leaf feeding. *H. rectipennis* is a known predator of thrips and is often present in the same galls with *F. vaccinii* and *C. vaccinophilus*. Therefore, not all thrips are plant feeding and some of these thrips are important predators of plant feeding thrips.

Thrips injury can be recognized by tight curling of leaves accompanied by malformation of leaves. More importantly, in addition to injury to leaves, thrips preferentially feed on style and the surrounding green tissue. This feeding injury to style can affect pollination and subsequent fruit set. Based on work conducted in Georgia and Mississippi, thrips can also feed on pollen and chlorophyll tissue (green tissue) within the flower. Damage to ovule has also been reported and under severe conditions small berries drop prematurily causing direct yield loss. Pimpling on the fruit has also been noticed if the infestations are severe. Populations as high as 40-50 per flower cluster have been previously recorded in Georgia. As much as 60% reduction in fruit set has been attributed to thrips injury in Georgia in Southern highbush blueberries.

Adult thrips can also move long distances along with air currents. It is possible that the thrip populations we have seen this year may have originated from other surrounding crops. Depending on the species, there can be as many as 10-12 generations each season. Under the present temperature conditions, they can complete a full generation in 18-22 days.

Of the insecticides that are currently registered on blueberries, Lannate and Asana are known to have activity on thrips. Although, these insecticides have never been evaluated specifically for thrips, I expect they to provide some control against thrips.

At. Co. Blueberry Trap Averages

WEEK END	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
8-Apr		133.00				
15-Apr		197.50				
22-Apr		195.75				
29-Apr		215.60				
6-May		188.80				
13-May		108.67				
20-May	4.79	16.63	0.00			
27-May	6.00	1.94	0.33			
3-June	2.66	0.19	13.67			

Burl. Co. Blueberry Trap Averages

WEEK END	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
8-Apr		- -				
15-Apr		--				
22-Apr		25.00				
29-Apr		107.00				
6-May		125.50				
13-May		41.43				
20-May	4.30	4.14				
27-May	4.56	0.67				
3-June	26.68	0.50				

Insect Trap Count Key: RBLR=redbanded leafroller, OBLR=obliquebanded leafroller, CBFW=cranberry fruitworm, SNLH=sharpnosed leafhopper, BBM=blueberry maggot.

WINTER WEATHER FAILS TO DAMAGE BLUEBERRY CROPS

By Chris Koger, Staff Writer
Reprinted: The Packer, May 28, 2001

Cold weather slowed blueberry production in southern states and devastated North Carolina's crop, but shippers don't expect significant decreases in the availability of blueberries this summer, as production soon begins in New Jersey, the Pacific Northwest and Canada.

SOUTHEAST: Dry weather and adequate chill hours actually helped instead of harmed the berries in Florida this spring, said Cammy Hinton, blueberry sales manager for Hinton Farms Produce Inc., Dover, Fla. Hinton Farms grows minimal volumes of blueberries, but packs for more than 50 other growers. The same weather that helped the blueberries harmed the strawberries during harvest.

"As far as blueberries are concerned, it was probably helpful," Hinton said. "We are always pretty marginal on the number of chill hours, but we got adequate chill hours prior to the bloom."

Prices for northern Florida blueberries were $16 for flats of 12 4.4-ounce cups May 14, the day some shippers in eastern North Carolina began packing. Supplies were too light there to provide prices, according to the U.S. Department of Agriculture's Agricultural Marketing Service.

Florida produced 2.1 million pounds of fresh market blueberries in 2000.

Hinton Farms plans to ship blueberries from late March through the end of May, and Georgia production generally is in full swing from June 1 to July 10, according to the North American Blueberry Council, El Dorado Hills, Calif.

North Carolina is most active from May 25 to July 10, but volumes will be down as much as 30% because of freezes April 18-19, said Sherry Warren, fruit and vegetable market news reporter for the USDA's Market News Service in Raleigh, N.C.

"From what I'm told, the estimated volume will be reduced this year. It ranges anywhere from 25 to 30% statewide," Warren said. "We have some farmers that irrigate, and they're going to have a better outcome. …Some (growers) are really unsure at this point if they're going to be able to fulfill their commitments to their customers." (Continued on page 4.)

Mike Klackle, vice president of sales for Global Berry Farms LLC, Naples, Fla., said temperatures dipped to 24 degrees. North Carolina was expecting a record crop, which will ease the loss. Growers for Global Berry Farms have about 40% to 45% of the fresh market blueberries in the state, Klackle said.

"There will still be a good amount of blueberries to sell," Klackle said. "Frankly, they said it could have been a bumper crop."

Georgia, which produced 9.2 million pounds of fresh blueberries in 2000, compared to North Carolina's 12 million pounds, didn't have the freeze damage to the extent of North Carolina, said Keith Mixon, general manager of Sunnyridge Farm Inc., Winter Haven, Fla. Sunnyridge recently acquired land and a packing facility in Baxley, Ga.

"Things look very good. Our first production was April 22, and we'll produce blueberries until July 6," Mixon said. "The freeze did hurt some Georgia stuff, but we escaped it for the most part."

NEW JERSEY: Tim Wetherbee, sales manager for Diamond Blueberry Inc., Hammonton, NJ, said early estimates pegged the start of New Jersey's blueberry harvest about five days later than the usual June 15-20 start, but changing weather patterns moved the season along.

"We've had a real good winter here, and the weather conditions were ideal for the crop. Everything looks positive at this time," Wetherbee said in mid-May.

Diamond Blueberry will pack between 750,000 and 1 million 12-pint flats this season, Wetherbee said.

New Jersey produced 24 million pounds of fresh market blueberries last year.

MICHIGAN: Michigan usually starts blueberry harvest around June 25, picking through Sept. 25, with larger volumes from July 15 to Sept. 10, according to the blueberry council.

"We had a late spring that turned to an instant summer," Klackle said of Michigan.

"I think we'll be closer to the normal start than early, like the last two years."

Michigan produced 20 million pounds of blueberries in 2000.

NORTHWEST: Washington and Oregon shippers should receive light supplies of blueberries in late June or early July, with peak production from July 20 to Aug. 7.

Jeff Malensky, director of marketing for Oregon Berry Packing Co., Hillsboro, said the proliferation of blackberry blooms can give blueberry growers a general idea of how the crop will look.

"The blackberries and blueberries look good," Malensky said. Oregon harvested 10 million pounds of fresh blueberries last year, and Washington had 2.2 million pounds, according to the blueberry council.

BERRIES MAY PROTECT AGAINST CANCER AND HEART DISEASE

(Reprinted) ARS News Service
Agricultural Research Service, USDA
February 27, 2001
Hank Becker, (301) 504-1624, hbecker@ars.usda.gov

Blueberries, cranberries, huckleberries and related plants have now been found to contain resveratrol, a potential anticancer agent, according to Agricultural Research Service scientists who made the discovery.

This new finding from ARS chemist Agnes Rimando at the Natural Products Utilization Research Unit, Oxford, Miss., adds to previous research by other scientists who found that dark-skinned bunch grapes contain resveratrol. Rimando is working with scientists at Agriculture and Agri-Food Canada, Kentville, Nova Scotia, and the ARS Small Fruit Research Station in Poplarville, Miss.

Using chemical identification procedures, the team of scientists measured the resveratrol content of 30 whole fruit samples of blueberry, cranberry, huckleberry and related plants. The samples represented five families and 10 species of Vaccinium fruit. They also measured resveratrol in skin, juice/pulp and seed samples of muscadine grape.

Because of its important biological properties, resveratrol (3,5,4-trihydroxystilbene) has been examined extensively in grapes. Studies showed the compound protects the grapes from fungal diseases. It also provides health benefits for consumers by reducing the risk of cardiovascular disease. The compound's anticancer potential warranted its examination in other fruits.

The team's studies showed that several fruit samples of Vaccinium contain varying amounts of the compound. Analysis of the extracts of the skin, juice/pulp and seed of muscadine grapes showed that concentration of resveratrol in the skin was highest. Levels in the juice/pulp were much lower than in the skin and seeds. Analysis of more Vaccinium and muscadine samples is continuing.

The new data could help build a foundation for increasing resveratrol in those berry and grape crops that are important to many small farmers. Future research goals will include enhancing production of resveratrol in selected species.

ARS is the lead scientific research agency of the U.S. Department of Agriculture.

Scientific contact: Agnes Rimando, ARS Natural Products Utilization Research Unit, Oxford, Miss, (662) 915-1037, fax (662) 915 1035, arimando@asrr.arsusda.gov.

Important Correction !!

The date for the USDA Blueberry Breeding Field Day was erroneously listed in last week's Newsletter as ~~July 10, 2001~~.

The correct listing for the Field Day should be: July 12, 2001.

Be sure to mark the correct date on your calendar now. Please excuse any inconvenience this has caused.

United States Department of Agriculture
Agricultural Research Service
Beltsville Fruit Laboratory
Marucci Center for Blueberry & Cranberry Research and Extension
Chatsworth, New Jersey

To: Blueberry growers, researchers and others
From: Dr. Mark Ehlenfeldt, USDA-ARS
Re: Blueberry Breeding Field Day

This letter is to cordially invite you to the USDA Blueberry Breeding Field Day to be held **July 12, 2001** from 9:00 a.m to 12:00 noon at the Philip E. Marucci Center for Blueberry and Cranberry Research and Extension in Chatsworth, New Jersey. This is the first field day to be held in a number of years and is intended to allow growers and other interested persons to view some of the upcoming materials in the USDA breeding program and learn about other items of interest. Among the featured items:

- Highbush cultivar test plot. This plot contains the widest assortment of cultivars in the world and is an opportunity to view new cultivars as well as established and historical cultivars. There's also a rabbiteye cultivar test block!
- Selection plots. Plots containing Phase 1 selections which are being propagated for further testing.
- Seedling nurseries. Families of seedlings being grown out for initial evaluation and selection.
- High density seedling disease nurseries. Nurseries where screening for disease resistance occurs. See other controlled disease screening as well.
- Equipment for firmness and color testing.
- Blueberry mulching experiment.
- Meet Rutger's new bee researcher, Dr. Medhat Nasser.

July 10th is a busy time of year for many of you. Although the field day is officially scheduled from 9 to noon, guests are welcome throughout the day, and many aspects of the field tour are self-explanatory. So feel free to stop by later if it better fits your schedule. If you arrive later in the day, visit the Main Office of the Research Center where you will be able to get guide sheets to many of the plots.

The Marucci Blueberry and Cranberry Research and Extension Center is located at 125A Lake Oswego Road. Lake Oswego Road can be found between Pine Barrens Canoe Rental and Mick's Canoe Rental (they're about a mile apart) on Route 563 about 9 miles southeast of Chatsworth, New Jersey. For additional directions or questions call 609-726-1590.

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