

# PLANT & PEST ADVISORY

CRANBERRY EDITION \$1.50

MAY 22, 2008



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## Cranberry Disease Management

*Peter V. Oudemans, Ph.D., Specialist in Plant Pathology*

### Fairy ring

This disease is believed to be caused by a unique soil borne fungus. It is frequently observed in mature cranberry beds in New Jersey and Massachusetts. We estimate that the disease causes approximately a 50-60% reduction in yield within the ring over the average yield of healthy parts of the bed and the rings expand at a rate of 18-24 inches per growing season. In a bed yielding 200 bbl/acre a ring 60 feet in diameter would result in a 6.5 bbl loss. This can be used to estimate the value of applications.

### Control

There is only one moderately effective method for chemical control of this disease. Two fungicides are currently labeled for and show efficacy against Fairy Ring. Indar and Abound can both be used as treatment against this disease.

One - two applications per year are permitted and should be made in pre-bloom and may be repeated 10-14-days later.

Fungicide	Rate/acre	Comments
Indar 2F	12 fl.oz.	Maximum of 4-applications per year
Indar 75WSP	4 oz.	Maximum of 4-applications per year
Abound	15.4 fl.oz.	Maximum of 6-applications per year

To treat a fairy ring, measure 10 ft. outward from the edge of the ring (area of dead vines) and 2 ft. in from the edge. Mark this area with flags and treat the entire area with the fungicide solution.

The amount of material needed to treat a diseased site should be calculated before the application is made. To determine this, calculate the area of the ring plus the 10-ft. beyond the edge of dead vines.

It is essential to irrigate the fungicide into the ground during and following application. The recommended fungicides are systemic and will not move into the ground if allowed to dry on the foliage. Therefore irrigation during and following application is suggested. The effect of fairy ring treatments are slow to be seen. In trials we were able to observe differences in mid-August but not in July.

### Replanting

Maintaining the genetic purity of a bed is of concern to growers who may want to rake vines for replanting or re-sale. Also, beds with one cultivar or genotype are likely to have a more predictable bloom and will be easier to manage fruit rot. Based on preliminary evidence

*SEE DISEASE MANAGEMENT ON PAGE 3*

# Insect Update

Cesar Rodriguez-Saona, Ph.D., Specialist in Entomology

At this time gypsy moth populations are under control in most farms. There are some spots in a few beds that might have a few larvae, which might reflect poor coverage of aerial sprays. This might be more evident in beds near the forest. Overall, however, insecticide sprays done two weeks ago have shown very good results. If you used the insect growth regulators Confirm or Intrepid, you might start to see the results because they often take more time than broad-spectrum insecticides to kill the caterpillars.

It is recommended to continue to scout for other pests. Sweep net samples should be continued until bloom. One pest you should scout for is cranberry blossom worm. In most cases, we expect that the sprays done for gypsy moth should have controlled this pest also. However, this pest has become a problem in recent years and can be very voracious, so even when you have sprayed for gypsy moth you should scout for this pest. Late-instar larvae of blossom worm are nocturnal, and thus sweep net samples should be taken at night (see below for more details).

*Cranberry Blossom Worm.* The cranberry blossom worm is one of the three most important pests of cranberries in New Jersey (together with spotted fireworm and *Sparganothis* fruitworm); however, it is considered a minor problem in Massachusetts, Quebec, and British Columbia, and not known to infest cranberries in other growing states.

*Life history.* The cranberry blossom worm has one generation a year. Eggs are laid singly mostly in October on fallen leaves and pieces of dead vines littering the bog floor. These eggs overwinter and begin to hatch from late April to early May. Young larvae are green but older larvae become reddish brown with a whitish stripe along each side of the body. Mature larvae become pale brown and nearly 38 mm long (see picture). Larvae become nocturnal by mid to late May. Pupation takes place in the ground or deep trash in late July and early August. The moths start to emerge in September and are active until late November.



Late-instar cranberry blossom worm

*Damage.* Young larvae nibble the leaves or bore into the buds. Fruit production is further decreased as older larvae nip off buds and blossoms, dropping them to the ground often cutting off more blossoms than they can consume. Each mature worm can fully destroy 100 blossoms over a three-week period.

*Control.* At this time you should monitor for late-instar larvae (4<sup>th</sup>-5<sup>th</sup>). Monitoring for this pest requires nighttime (9 pm to 12 am) sweep net sampling. If numbers exceed the threshold of an average of 4.5 larvae in sets of 25 sweeps, we recommend insecticide sprays. If you have used an insect growth regulator to control gypsy moth, we recommend the use of an insecticide with a different mode of action such as Avaunt, Diazinon, or Lorsban (Diazinon and Lorsban will also control blunt-nosed leafhoppers, see comment below).

Although populations of blunt-nosed leafhoppers in most beds remain low, I recommend growers to scout for this insect to make sure it does not become a problem. At this time of the year, you will find nymphs in your sweep net samples. For accuracy, during your regular scouting, save sweep net samples in a plastic bag, take them to your office/lab, and then go through the samples with a magnifying lens or, even better if available, under the microscope. The nymphs vary in color as they grow, some being yellow, some blackish, and some greenish-gray but all have a characteristic blunt head (similar to the adults).

*Blunt-nosed Leafhopper.* The blunt-nosed leafhopper is the principal vector of a phytoplasma that causes **cranberry false blossom**. Cranberry false blossom threatened the entire cranberry industry in the early 1900's. The disease was most problematic in New Jersey where the cranberry industry was almost eliminated. This leafhopper does not move around much, and colonization of bogs occurs slowly.

*Life History.* This insect completes one generation a year and overwinters as an egg. Eggs begin to hatch in early May. The nymphs go through five instars in about a month. The adults begin to appear early in July and are most abundant in late July. Numbers of this species start to diminish by the first week in August. The adults have a characteristic blunt head and vary from light yellowish-gray to dark brown (see picture).

SEE INSECT UPDATE ON PAGE 3



Adult Blunt-nosed Leafhopper

it appears that “stand opening” diseases such as fairy ring and root rot or even root insects can have an effect on the genetic composition of vines in a bed. The mechanism may be due to direct competition of “invading vines” which arise from a seed bank left in the bog from previous seasons. If this were the case cultivars such as Ben Lear would be more susceptible since they are generally poor vegetative competitors. To insure against this, growers who experience these types of dieback should consider replanting with the appropriate cultivar rather than allowing the vines to simply grow or fill in from the edges. □

*Damage.* Nymphs and adults get their food by sucking the plant juices of the cranberry with their piercing-sucking mouthparts. This direct injury is, however, not noticeable. They are most important as vectors of false blossom disease.

*Control.* The most important point in leafhopper control is locating the infestation. Monitoring for this insect is accomplished best with an insect sweep net. In case of high numbers (there is no current threshold); we recommend use of broad-spectrum insecticides (Diazinon or Lorsban). The neonicotinoids Actara and Assail are very effective against blunt-nosed leafhoppers and can be used to target the adults after bloom. □

## Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much below normal, averaging 56 degrees north, 57 degrees central and 59 degrees south. Extremes were 79 degrees at Hammonton and Canoe Brook on the 15th, and 38 degrees at Canoe Brook, Belvidere and Newton on the 13th. Weekly rainfall averaged 1.66 inches north, 2.02 inches central, and 1.63 inches south. The heaviest 24 hour total reported was 1.30 inches at Charlotteburg and Long Branch on the 16th to 17th. Estimated soil moisture, in percent of field capacity, this past week averaged 98 percent north, 97 percent central and 96 percent south. Four inch soil temperatures averaged 56 degrees north, 57 degrees central and 59 degrees south.

Weather Summary for the Week Ending 8 am Monday 5/19/ 8										
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	1.82	12.45	2.46	77	38	56.	-5	273	87	100
CANOE BROOK	1.65	11.96	.93	79	38	57.	-3	269	106	100
CHARLOTTEBURG	1.72	12.60	1.74	76	41	55.	-3	220	122	100
FLEMINGTON	1.73	11.66	1.18	76	39	56.	-4	263	88	100
NEWTON	1.38	12.14	2.47	77	38	57.	-2	321	195	100
FREEHOLD	1.68	8.56	-1.87	77	40	59.	-3	274	51	100
LONG BRANCH	1.91	10.51	-.26	73	44	56.	-5	195	7	98
NEW BRUNSWICK	1.87	10.33	.13	77	41	57.	-5	273	24	100
TOMS RIVER	2.58	10.48	.04	74	40	57.	-5	273	65	100
TRENTON	2.05	9.83	.39	76	42	58.	-5	347	67	100
CAPE MAY COURT HOUSE	1.48	7.99	-1.16	76	42	58.	-4	319	72	100
DOWNSTOWN	1.79	9.89	.48	78	42	59.	-4	367	76	100
GLASSBORO	2.04	9.62	-.36	77	44	59.	-4	401	123	100
HAMMONTON	1.56	8.31	-1.40	79	42	59.	-4	389	118	100
POMONA	1.49	9.74	.62	76	40	58.	-4	348	123	95
SEABROOK	1.42	9.89	1.33	77	44	60.	-3	411	115	100
SOUTH HARRISON	2.72	10.52	1.30	77	42	61.	NA	398	NA	NA
WES KLINE -- GDD BASE 40 PINEY HOLLOW	LAST WEEK			137 (Ending 5/12/08)				THIS WEEK 131 (Ending 5/19/08)		

**RUTGERS**

New Jersey Agricultural  
Experiment Station

Plant & Pest Advisory  
Rutgers School of Environmental  
and Biological Sciences  
ASB II, 57 US Hwy. 1  
New Brunswick, N.J. 08901

FIRST CLASS  
POSTAGE PAID  
PERMIT #576  
MILLTOWN, NJ 08850

## **PLANT & PEST ADVISORY CRANBERRY EDITION CONTRIBUTORS**

### **Philip E. Marucci Center for Blueberry and Cranberry Research & Extension (609-726-1590)**

Bradley A. Majek, Ph.D., Weed Science  
Peter Oudemans, Ph.D., Plant Pathology  
Cesar Rodriguez-Saona, Ph.D., Entomology  
Nicholi Vorsa, Ph.D., Breeding, Genetics and Culture

### **Rutgers Cooperative Extension Agricultural Agent**

Raymond J. Samulis, Burlington County (609-265-5050)

### **Ocean Spray Cranberries, Inc.**

Dan Schiffhauer, Agricultural Specialist

### **Newsletter Production**

Jack Rabin, Associate Director for Farm Services, NJAES  
Cindy Rovins, Agricultural Communications Editor

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