

# PLANT & PEST ADVISORY

CRANBERRY EDITION \$1.50

JULY 20, 2006



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## Insect Update

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

### Rootworms, scarab grubs, and other root feeding pests in cranberries

A few growers have reported infestations of **cranberry rootworm** and **scarab grubs** (*Phyllophaga* spp.) at several locations. Here we present an overview on the biology of these species and control recommendations.

**Cranberry rootworm.** This is an important pest in cranberries in New Jersey. Feeding damage is often severe in limited areas, causing brown spots in the bog. Although the adults may feed on small berries, most of the damage is caused by the larvae. Larvae live in the soil under the vines, where they feed on the cranberry roots. Larvae prefer to feed on the bark of roots.

**Life cycle:** Mature larvae overwinter deep in the soil in cranberry bogs. Normally in New Jersey, pupation occurs in late May. Adults emerge during early June and remain active throughout July. They can be easily monitored using a sweep net. Adults are 5-6 mm (1/5") long, with dark-brown, bronzed, and shiny coloration. Eggs are laid in July on the soil surface. After hatching, young larvae start feeding on roots. Feeding lasts until October. Larvae are about 8 mm (5/16") long, yellowish-white in color with a light brown head, and usually assume a curved position. In fall and winter, mature larvae move down in the soil to overwinter. Generally, this insect has a 1-year life cycle.

**Scarab grubs.** In New Jersey cranberries white grubs (*Phyllophaga* spp.) are the most common scarab grubs. These are the most damaging species attacking cranberry roots. Larvae tend to feed gregariously on roots. Only the larval stage is considered a pest in cranberries.

**Life cycle:** Although their life cycle is not well-known for New Jersey populations, these grubs can have a 3-year life cycle. They can overwinter as a larva or an adult, depending on the point in their life cycle. Eggs are laid mostly in June. The second instars burrow into the soil to overwinter. In the second year of development, second instars migrate upwards and feed until late July, then they molt to a third instar. After feeding for a period of time, third instars burrow into the soil to overwinter. The following spring, third instars do little feeding and pupate in July. Newly formed beetles appear in the soil in August through early September. These adults remain in the soil and overwin-

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ter. Finally, adults emerge from the ground in May-June the following year. White grubs are C-shaped and over 35 mm (1 3/8") long when full grown. Adult beetles are reddish brown and nocturnal.

**Control.** Admire Pro, a new formulation of Imidacloprid (Bayer CropScience), is registered in cranberries for use against rootgrubs and rootworms. For most root feeding insects, this is the time to apply Admire Pro. Admire Pro is most effective against early instars. Consequently, you may not be able to suppress populations of 2- or 3-year life cycle grubs with a single application. You might need to apply two or three years in a row for effective suppression. For this reason, it is important to know what species you have in your bogs.

Admire Pro is a neonicotinoid insecticide registered for use in cranberries against cranberry rootworms and scarab grubs. This insecticide is a contact and stomach poison that affects the insect's nervous system. Admire is highly systemic and effective against piercing and sucking insects, such as **aphids, leafhoppers, scales**, and others. This product can be used at 7-14 fl oz/acre. A maximum of 14 fl oz (0.5 lb AI) of Admire Pro can be used per acre per season. The pre-harvest interval (PHI) is 30 days. Admire Pro is highly toxic to honey bees; thus, can be used only as a post-pollination spray. Best control is achieved when application is made post-bloom immediately after bees are removed. Admire Pro can be applied by ground or by chemigation. Aerial application of this product is prohibited. □

## Notice of Rule Proposal: Agricultural, Aquacultural, and Horticultural Water Usage Certification – N.J.A.C. 7:20A

### Public Notice

Take notice that the NJ Department of Environmental Protection is proposing to readopt with amendments the agricultural, aquacultural, and horticultural water usage certification rules – N.J.A.C. 7:20A. A statement of the substance of the proposal follows: Under the Water Supply Management Act, the Department implements a regulatory program to ensure that the ground and surface water supplies of the State are managed in a way that protects their quantity and quality, thereby protecting public health and safety, and natural resources. N.J.A.C. 7:20A contains the rules governing water usage certifications for agricultural, aquacultural, and horticultural purposes. The rules establish the schedule and reporting procedure that persons having the capability to divert 100,000 or more gallons of water per day for agricultural, aquacultural, or horticultural purposes must follow to establish their privilege to divert water and prescribes the application, review, notification and hearing procedures for establishing privileges to divert water and to obtain water usage certifications and/or registrations. The Department is proposing to readopt these rules with amendments that include new definitions, requirements for more precise source location information, additional assessment of natural resource impacts, more stringent certification conditions to protect natural resources and other users, requiring that cranberry growing operations provide the method used to determine water usage, a requirement to submit an Agriculture Development Plan to justify maintaining allocation amounts at the level approved in the certification when water use reports indicate less than that amount is being used and increase civil administrative penalties for violations.

The proposal is scheduled to be published in the New Jersey Register dated July 17, 2006. A copy of the proposal is available from the New Jersey Department of Environmental Protection by calling 609-292-2957 or:

<http://www.nj.gov/dep/rules/proposals/071706b.pdf>

Public hearings concerning the proposal are scheduled as follows:

August 8, 2006 at 6:00 p.m.  
Rutgers EcoComplex  
Environmental Research and Extension Center  
1200 Florence-Columbus Rd  
Bordentown, NJ 08505-4200

August 10, 2006 at 6:00 p.m.  
Somerset County Complex  
Freeholders Meeting Room  
20 Grove Street  
Somerville, NJ 08876

Written comments may be submitted by September 15, 2006 to:  
NJ Department of Environmental Protection, Oneida Cuevas, Esq.,  
ATTN: DEP Docket Number: 05-06-06/429, Office of Legal Affairs, PO  
Box 402, Trenton, New Jersey 08625. □

# Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal, averaging 77 degrees north, 78 degrees central and 79 degrees south. Extremes were 95 degrees at Canoe Brook on the 17th, and 62 degrees at Pomona on the 16th. Weekly rainfall averaged 0.90 inches north, 0.61 inches central, and 0.07 inches south. The heaviest 24 hour total reported was 1.05 inches at New Brunswick on the 12th to 13th. Estimated soil moisture, in percent of field capacity, this past week averaged 88 percent north, 74 percent central and 55 percent south. Four inch soil temperatures averaged 75 degrees north, 75 degrees central and 76 degrees south.

## Weather Summary for the Week Ending 8 am Monday 7/17/ 6

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
CANOE BROOK	.73	18.08	-.64	95	64	78.	5	1612	396	78
CHARLOTTEBURG	1.06	18.83	-.07	90	63	75.	5	1339	358	83
FLEMINGTON	.91	24.07	6.03	92	64	77.	3	1541	285	83
NEWTON	missing									
FREEHOLD	.50	17.25	-.32	94	63	78.	4	1564	207	70
LONG BRANCH	.43	17.73	.22	94	64	76.	2	1464	182	54
NEW BRUNSWICK	1.05	18.04	.66	93	65	79.	4	1649	212	83
TOMS RIVER	missing									
TRENTON	.44	17.38	.90	93	63	78.	2	1683	186	53
CAPE MAY COURT HOUSE	missing									
DOWNSTOWN	missing									
GLASSBORO	.18	16.22	-1.00	94	68	79.	3	1811	322	45
HAMMONTON	missing									
POMONA	.02	14.89	-.52	91	62	78.	3	1621	246	40
SEABROOK	.06	17.41	1.80	94	69	80.	4	1876	357	41
SOUTH HARRSION	missing									
WES KLINE — GDD BASE 40 PINEY HOLLOW										
LAST WEEK	241 (Ending 7/10/06)									
THIS WEEK	MISSING (Ending 7/17/06)									

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[www.rce.rutgers.edu/pubs/plantandpestadvisory](http://www.rce.rutgers.edu/pubs/plantandpestadvisory)

**Pesticide User Responsibility:** Use pesticides safely and follow instructions on labels. The pesticide user is responsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCRE in your County.

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