RUTGERS COOPERATIVE EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

CRANBERRY EDITION $1.50 JULY 5, 2007

INSIDE

Insect Update

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

Root-feeding insects and use of Admire Pro

If your beds have damage caused by root-feeding insects, you should consider treatment with **Admire Pro** immediately after bees are removed. Occurrence of root-feeding insects will manifest by the presence of dead patches (see picture from previous newsletter). Pull dead vines and search through the root zone and soil for grubs and worms. Admire Pro (imidacloprid) is labeled for the control of rootworm, white grubs (*Phyllophaga* spp.), and other scarabs in cranberries.

A description of the life cycle of white grubs was presented in our last newsletter.

Cranberry rootworm (*Chrysomelidae*). Pupation starts in late May and beetles emerge in early June. Adults are nocturnal and hide in leaf litter. Adults can be easily picked up in a sweep net. Females feed on foliage before laying eggs. Young larvae will feed on roots; feeding continues until October. The mature larvae move down the soil in the fall to overwinter. Holding of the water will delay onset of pupation. Rootworm has a 1-year life cycle. Entomopathogenic nematodes (*Heterorhabditis bacteriophora*) can be used to control cranberry rootworm (see picture).

Cranberry rootworm grubs & pupa killed by an infestation of entomopathogenic nematodes (nematodes give the grubs a reddish hue)

Most scarab grubs, i.e., those in the genus *Phyllophaga*, in cranberries have multi-year life cycles (both Japanese beetle and Oriental beetle have a 1-year life cycle). Last week, I found grubs at different stages in their development including second and third instars, pupae, and newly emerged adults. Adults will soon mate and start laying eggs, which will turn into 1st instars. Admire is most effective against early instars. Consequently, you may not be able to suppress population of 2- and 3-

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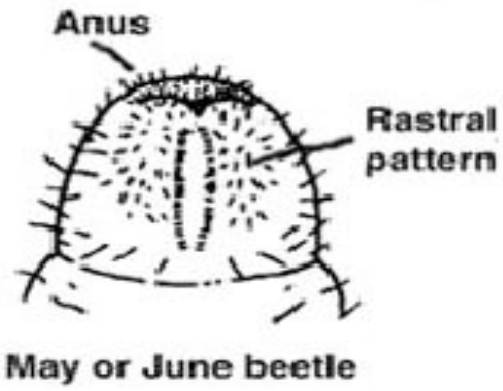
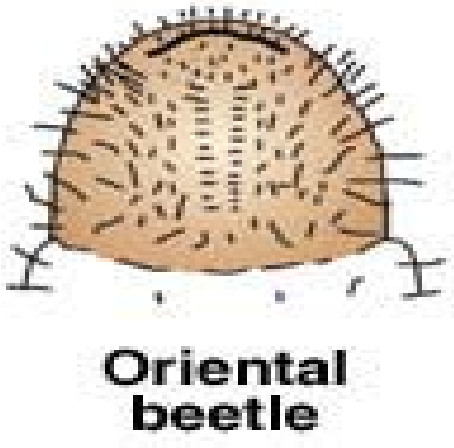
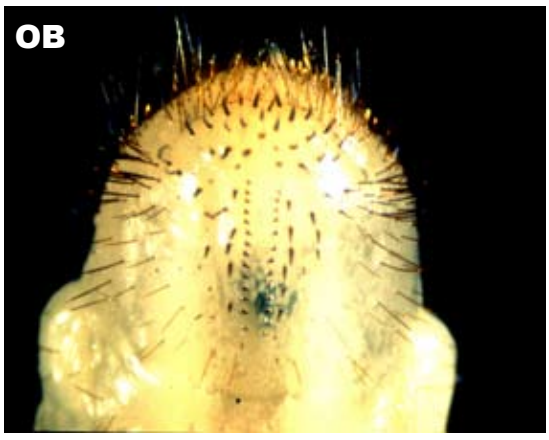
year life cycle grubs with a single application. You may have to use Admire Pro two to three years in a row for most effective suppression. For this reason, it is useful to know what species you have before using Admire. Root grubs can be recognized by a distinct C-shape (see picture from previous newsletter). The different species of grubs can be separated by the rastral pattern, an arrangement of stout bristles on the ventral side of the last abdominal segment, and anal slit (see Figure and table).

Admire Pro, a Bayer CropScience product, is the new formulation of Admire 2F. It is a neonicotinoid insecticide registered for use in cranberries against cranberry rootworm and scarab grubs. This insecticide is a contact and stomach poison that affects the insect nervous system. It is highly systemic and toxic to honey bees; therefore, can be used only as a post-pollination insecticide. Admire Pro can be applied by ground or by chemigation. *Aerial application of this product is prohibited*. Admire has a long residual activity (> 100 days) as long as the insecticide is not directly exposed to the sun. This product can be used at 7-14 fl oz/acre. A maximum of 14 fl oz of Admire Pro can be used per acre per season. The PHI is 30 days.

Grub species	Rastral pattern	Anal slit
Phyllophaga	2 parallel rows	V- or Y-shaped
Oriental beetle	2 parallel rows	Transverse
Japanese beetle	V-shaped	Transverse







Compliance Advisory

Making You Aware of Emerging Patterns of Non-Compliance

According to the NJ Department of Agriculture's 2006 Annual Report, there are approximately 9,800 farms covering 790,000 acres of land and generating $858 million in revenues within the Garden State. New Jersey has farms for fruits, berries, vegetables, livestock and livestock products, field crops and horticulture. In order to provide New Jersey's myriad of farm owners and operators with information on environmental practices aimed at reducing impacts on the environment, the New Jersey Department of Environmental Protection (DEP) has identified 23 of the most frequently encountered environmental issues found when inspecting farms.

1. Open burning of material and/or operation of outdoor wood boilers
2. Dust and/or odor impacts off-site
3. Failure to obtain air permits for fuel (gasoline/diesel) tanks and commercial compost operations
4. Failure to register underground storage tanks used for storing motor fuel for noncommercial purposes which have a capacity of >1100 gallons
5. Failure to provide spill, overfill, corrosion protection and/or leak detection for underground storage tanks which have a capacity of >1100 gallons
6. Disposing of solid waste onsite
7. Failure to obtain an Agricultural Certification for wells that can pump >100,000 gallons per day
8. Failure to obtain a Water Use Registration for wells that have the ability to pump >100,000 gallons per day but pump <100,000 gallons per day
9. Failure to renew water allocation permit/registrations every five years
10. Failure to obtain a well drilling permit prior to drilling a new well
11. Failure to properly manage manure
12. Allowing animals to come into contact with water bodies and introducing waste or creating erosion problems
13. Failure to prevent runoff into water bodies from confinement areas that contain animal waste
14. Failure to prevent runoff into water bodies from applied sludge or manure outside of the targeted land application area
15. Over applying sludge or manure products to land
16. Failure to provide pesticide safety training to workers and/or handlers (those who mix or apply pesticides, or handle application equipment)
17. Failure to obtain a pesticide applicator license (since November 2003, the pesticide applicator license requirement was expanded to include the use of "general-use" or "over-the-counter" pesticides, in addition to the longstanding requirement for licensing for the use of "restricted" pesticides).
18. Failure to record the correct start time for a "Restricted Entry Interval" (REI). The REI is the time that must elapse between the end of a pesticide application and when it is permissible for a worker to enter the treated area or field, according to the pesticide

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English as a Second Language for New Jersey Farm Employees

The New Jersey Farm Productivity Enhancement Training Program announces another course offering for New Jersey's agricultural community. Most New Jersey farm owners employ workers who have a critical need to improve their English speaking skills.

This grant-funded class will present the basics of spoken "American" English to Spanish-speaking farm employees. The course is comprised of six (6) four-hour sessions (8:30 am - 12:30 pm) and will be held at the Cumberland County office of Rutgers Cooperative Extension in Millville, N.J. Course dates are September 11, 18, 25 and October 2, 9, and 16, 2007.

Program topics are tailored for workers in agricultural and farm-related industries. The vocabulary and phrases introduced are agricultural and will include interpersonal, day-to-day job-related communication in English. The course assumes that attendees have little or no knowledge of English and will introduce basic expressions, sounds, pronunciation and sentence structure.

Registration fee is $35 for the entire six days of training (24 hours total), course materials and breakfast at each session. To receive a Rutgers University certificate of completion participants must attend all six sessions.

For further information please contact Keith Wilson at (732) 932-9271 (ext. 617) or via e-mail at kwilson@cook.rutgers.edu.

If you'd prefer to register by mail or fax, simply download the registration form at: http://www.cookce.rutgers.edu/brochures/intros/farm.html. ❑

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label directions. Thus, it is the time that a pesticide application is finished that is the basis for the starting time of the REI. Farmers who record only the start of a pesticide application as the time of application in their required records may send their workers back into sprayed fields too soon, in violation of the REI.

19. Failure to post one or more of the required items in the "central posting" of pesticide safety information for farm workers and handlers.
20. Failure to inform the local fire department in writing of the pesticides stored and the location of the storage area, including the required cover letter for this information.
21. Failure to maintain appropriate pesticide application information
22. Converting wetlands and formerly fallow transition areas to pasture or farm fields
23. Failure to obtain permits under the Freshwater Wetlands Protection Act (FWPA) for farm activities. Some farm exemptions exist for lands that are already in cultivation. However, like anyone else, farmers may not fill, drain, bring new land under cultivation, or perform construction or development activity in areas of land use jurisdiction that have not been continuously farmed since 1987. No wetlands may be filled.

Activities that may be exempt from regulation include:

A. Construction of farm access roads if:
The roads are placed in an area with as little impact to freshwater wetland or freshwater wetland transition areas as possible
The roads are only wide enough for single lane use by farm machinery (approx. 12 feet)
The roads do not alter the surface water flow to/from freshwater wetlands,
Best Management Practices (BMPs) pursuant to N.J.A.C. 7:7A-2.8 are followed.

B. Harvesting of timber consistent with a NJ State DEP approved Forestry Management Plan and BMPs

C. Construction of irrigation ponds for farming purposes if the spoils are disposed of out of freshwater wetlands.

None of the potentially exempt activities apply if the farm is being taken out of active crop production or the land is changing use. All other potentially regulated activity requires a Land Use permit from DEP.

Who should I contact with questions?

Land Use Regulation Technical Support Center
-Wetlands or Highlands Questions (609) 777-0454
-Waterfront Development, CAFRA, Stream Encroachment or Flood Hazard Area Questions (609) 984-0162
Land Use Compliance and Enforcement (609) 292-1240
Pesticide Control Program (609) 984-6568
Solid Waste Compliance and Enforcement (609) 584-4180
Northern Field Office (Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex and Warren Counties)
Air Compliance and Enforcement (973) 656-4444
Water Compliance and Enforcement (973) 656-4099
Central Field Office (Mercer, Middlesex, Monmouth, Ocean, and Union Counties) Air Compliance and Enforcement (609) 584-4100
Water Compliance and Enforcement (609) 584-4200
Southern Field Office (Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester and Salem counties)
Air Compliance and Enforcement (856) 614-3601
Water Compliance and Enforcement (856) 614-3655

Where can I get more information?

The following web sites can be accessed for additional information regarding this advisory:
Compliance & Enforcement http://www.nj.gov/dep/enforcement/
Land Use Regulation www.nj.gov/dep/landuse/
Water Supply http://www.nj.gov/dep/watersupply/alocatin.htm
Underground Storage Tanks http://www.nj.gov/dep/srp/bust/
Pesticide Control http://www.nj.gov/dep/enforcement/pcp/
Air Quality Permitting http://www.state.nj.us/dep/aqpp/
Solid and Hazardous Waste http://www.nj.gov/dep/dshw/
Natural Resources Conservation Service - Manure Management Standards
ftp://ftp-fc.sc.egov.usda.gov/NHQ/practice-standards/standards/633.pdf

Visit the following Web site for general information:

Contact NJDEP: http://www.nj.gov/cgi-bin/dep/contactdep.pl
To comment on this advisory:
http://www.nj.gov/dep/enforcement/survey.html

Please note this advisory is intended to be a summary explanation of a department initiative. It does not include all potentially applicable requirements. If you have any questions related to compliance with this initiative, please contact the Enforcement numbers listed above. ❑

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged above normal, averaging 72 degrees north, 73 degrees central and 75 degrees south. Extremes were 95 degrees at Canoe Brook and Freehold on the 28th, and 48 degrees at Charlotteburg on the 2nd. Weekly rainfall averaged 1.24 inches north, 1.28 inches central, and 0.70 inches south. The heaviest 24 hour total reported was 1.78 inches at Long Branch on the 27th to 28th. Estimated soil moisture, in percent of field capacity, this past week averaged 91 percent north, 82 percent central and 66 percent south. Four inch soil temperatures averaged 71 degrees north, 72 degrees central and 73 degrees south.

Weather Summary for the Week Ending 8 am Monday 7/ 2/ 7

	RAINFALL			TEMPERATURE				GDD BASE50		MON
WEATHER STATIONS	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
CANOE BROOK	.66	25.02	8.37	95	52	74.	3	1217	336	82
CHARLOTTEBURG	1.90	19.60	2.75	92	48	71.	3	1048	355	90
FLEMINGTON	.85	22.87	6.94	94	50	72.	1	1135	223	87
NEWTON	1.56	15.36	.24	90	53	70.	1	1019	244	91
FREEHOLD	1.15	19.22	3.61	95	53	73.	1	1301	294	89
LONG BRANCH	1.83	19.73	4.10	89	55	72.	0	1093	157	75
NEW BRUNSWICK	1.14	25.10	9.85	94	51	73.	-1	1219	147	91
TOMS RIVER	.29	15.49	-.06	92	56	72.	-1	1150	216	51
TRENTON	2.00	21.08	6.83	94	58	75.	1	1284	163	80
CAPE MAY COURT HOUSE	1.11	11.46	-2.32	91	59	74.	1	1165	150	67
DOWNSTOWN	.33	15.51	1.43	94	56	75.	1	1281	143	47
GLASSBORO	2.08	19.36	4.12	94	60	76.	2	1442	325	81
HAMMONTON	.26	15.27	.40	94	57	75.	1	1318	207	45
POMONA	.38	15.61	2.15	93	57	75.	3	1261	242	47
SEABROOK	.07	16.43	2.87	92	55	75.	1	1440	295	58
SOUTH HARRISON	.90	17.55	1.49	93	61	76	NA	1392	NA	NA

WES KLINE -- GDD BASE 40 PINEY HOLLOW
LAST WEEK 209 (Ending 6/25/07)
THIS WEEK 245 (Ending 7/2/07)

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