

# PLANT & PEST ADVISORY

CRANBERRY EDITION \$1.50

JUNE 18, 1999



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### Insect Update

*Sridhar Polavarapu, Ph.D., Entomology and IPM*

✓ **Blackheaded fireworm:** Pheromone trap catches in commercial bogs are at peak or slightly past peak at this time. In our research bog trap catches peaked around June 12. As of June 17, 70% of the **Blackheaded fireworm** eggs in our research bog have hatched.

Eggs are flat and light yellow, and laid singly on the underside of the leaves. Confirm 2F (Tebufenozide) is labeled for managing **Blackheaded fireworm**. This insecticide is safe for pollinators and works best when applied before the early instars begin to web up the foliage. If insecticide applications are required, the first application should be made in the following few days.

Remember that high trap counts may not necessarily mean high larval numbers. For this reason, before deciding to apply insecticides, you should closely monitor the bogs with a history of **Blackheaded fireworm** populations (and with high trap counts) for eggs and possibly larvae.

✓ **Spotted fireworm:** Egg masses are being seen on many weed species. This moth lays the egg masses on several weed species, most notably leather leaf, red maple, red root, loosestrife, briars, and grasses. Removal of these weeds may discourage egg laying by **spotted fireworm** in the bog and thereby reduce the larval populations.

Traditionally **spotted fireworm** and **sparganothis fruitworm** larvae have been managed with an organophosphate applied soon after the removal of honeybees (post bloom). While this strategy has been generally effective, at times we have seen growers applying this spray very late in the season (late third week of July) because of operational difficulties. Some fruit damage may have already occurred by this time.

An alternative strategy is to apply Confirm 2F during bloom targeting early instar **spotted fireworm** and **sparganothis fruitworm** larvae. Eggs of both these species begin hatching from the third week of June onwards. Eggs continue to hatch over a 2-3 week period, most hatching by the end of the first week of July. Two applications of Confirm 2F are suggested. The first application should be made around June 24-27, followed by a second application 7-10 days later. You may not need an organophosphate application specifically for managing **spotted fireworm** and **sparganothis fruitworm**, if you use Confirm 2F during bloom.

*See Insect on page 2*

The advantages of this strategy include 1) better survival of natural enemies and beneficials, and 2) extended pollination by keeping honeybees as long as needed. This alternative strategy also has several disadvantages. First, Confirm 2F, being a target-specific insecticide, has activity only against caterpillar pests. Minor pests such as **bluntnosed leafhoppers, flea beetles** etc., which are controlled by organophosphate sprays will not be controlled by Confirm 2F. Secondly, Confirm 2F applications will be more expensive than organophosphate applications.

✓ **Sparganothis fruitworm:** Pheromone traps are capturing adult moths for the past week. Trap captures are not expected to peak for at least another week.

✓ **Spanworms:** Dan Schiffhauer's IPM program has been finding early instar **spanworms**. However, we have not seen these worms feeding on cranberries. We suspect that these are caterpillars of **pine loopers** that we saw in May. The caterpillars most likely are blown into cranberry bogs from adjoining woodlands. □

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## Deer Survey Results On-Line

Rutgers' New Jersey Agricultural Experiment Station (NJAES) Center for Wildlife Damage Control conducted a 65 question survey of New Jersey's farmers in 1998 to improve understanding of how deer, and current deer management practices, impact agriculture. This comprehensive opinion survey determined farmers' perceptions of deer and identified and quantified how current deer management practices impact their farming. Survey results should lead to improved deer management programs that are more responsive to the needs of farmers seeking solutions to crop damage.

The Rutgers Deer Survey Results with color maps are now available on the Web: <http://www.rce.rutgers.edu/programs/wdc/deer.htm>. □

## Deer Ticks Peak in June

*Deborah Smith-Fiola, Ocean County Agricultural Agent*

The relatively cool spring has extended the activity period for the northern deer tick (now known as the black legged tick), the vector of Lyme Disease. Because of the 2 year life cycle of this tick, last year's overwintering larvae have recently molted into the immature nymph stage. Nymphs are primarily active in late May and June. The majority of all Lyme disease cases (>70%) are the result of the bite of a nymph, usually this time of year.

The deer tick nymph is the size of a poppy seed. It is the only tick found in New Jersey with a black head and a black dorsal shield behind its head. Before feeding, the abdomen is creamy white and translucent. After a blood meal, however, the abdomen darkens and swells. It takes 3 to 4 days for a nymph to finish feeding on an animal and completely engorge with blood - whereupon it swells to the size of a mustard seed, and drops off the host. This is how deer tick populations spread: they hitch a ride on an animal host, such as a bird, feed for a few days, then drop off wherever that bird, for example, may have flown.

Not every tick carries Lyme disease. Nymphs needed to pick up the disease from an infected animal when they were a larva, in order to transmit it as they currently feed. The infection rate thus varies annually, typically from 10% to perhaps 25%-30%. (Note that adult ticks have a higher infection rate). Even if infected, research shows that the deer tick still must feed at least 24 hours to transmit the disease bacteria from its body to yours. Translated: this means that approximately one out of four ticks may be infected, and able to transmit Lyme disease - if it feeds more than a day. So the trick is to remove ticks as soon as possible!

Remove ticks only with tweezers. Bent, 'needle-nose' tweezers are preferred. Other methods, including using your fingers, petroleum jelly, a hot match, etc. may traumatize a tick - and a traumatized tick is likely to regurgitate its' gut contents, which may include the Lyme disease bacteria.

Deer ticks are now known to transmit other, less common diseases. HGE, or Ehrlichiosis, identified since 1984, was diagnosed in 8 people in New Jersey last year, with 2 deaths. Suspect Ehrlichiosis if you have Lyme-like symptoms (fever, fatigue, chills, headache, muscle pain) early in the day, but by evening symptoms are severe, to the point of entering the hospital. The diagnostic 'bull's eye' rash (2 inches or more), is only a symptom of Lyme disease (and also 'Lyme-like' disease, vectored by the Lone Star tick). Deer ticks may also be co-infected with both HGE and Lyme Disease. Babesiosis is another relatively rare disease vectored by ticks. See a doctor or medical professional if you exhibit symptoms of Lyme Disease or any other tick borne disease. Also be aware that a Lyme disease vaccine is now available, but 3 doses are required for protection.

*See Tick on page 3*

Research shows that 85% or more of nymphs are found in the woods, typically from ground level to 4 - 6 inch high vegetation. This location affords them the best likelihood of finding a small animal to feed upon. Ticks don't fly, they don't jump, and they don't fall from trees. They find a host by crawling up low vegetation and *waiting* for an animal to walk by - then they grasp onto the skin/clothing, and crawl up. Knowing this, beware of walking in tall grass or the shrubby undergrowth in the woods. Widen trails to 6 feet or more, to avoid brushing against vegetation. Some homesites will clear-cut or mow the shrubby understory layer of the adjacent forest to somewhat reduce the tick potential, but this has to be repeated annually.

Only 4% or so of deer tick nymphs are found in the lawn. Turfgrass that is maintained at the recommended 3 -4 inch mowing height is too hot and dry an environment for the immature tick. Turfgrass areas in full sun are thus a low priority for tick treatment. Instead, focus treatments to a barrier 10-ft. or so into the woods, and a barrier treatment along the edge of

the woods (where the forest meets the lawn or landscaped beds). Pesticide treatments targeting nymphs need only be applied once, in late May or early June. Granular insecticides have shown superior control (> 90%) in research trials. Apply granular materials with a chest mounted cyclone spreader. Labeled insecticides include carbaryl (Sevin), Permethrin, chlorpyrifos (Dursban), Diazinon, and Tempo 2. Note that successful treatment of nymphs will not prevent the larval or adult stages of the tick, because of the 2-year life cycle. Damminix, a product that provides insecticide-laced nesting material to mice, is also available for use in conjunction with other control tactics. (Note that liquid insecticide treatments are most appropriate for adult tick control in November and/or April, after leaves drop from trees/before foliage appears on trees. Control levels >95% have been documented).

For more information, call your county Cooperative Extension office, and ask for a copy of the free recently updated fact sheet, 'Prevent Tick Bites: Prevent Lyme Disease' (FS 443). □

## Weekly Weather Summary

*Keith Arnesen, Ph.D., Agricultural Meteorologist*

Temperatures averaged much above normal. Extremes were 98 degrees at several locations on the 8th and 42 degrees at Charlotteburg on the 11th. Weekly rainfall averaged 0.12 inches north, 0.17 inches central, and 0.14 inches south. The heaviest 24 hour total was 0.60 inches at Trenton on the 13th to the 14th. Estimated soil moisture, in percent of field capacity, this past week averaged 58 percent north, 43 percent central and 26 percent south. Four inch soil temperatures averaged 69 degrees north, 71 degrees central and 72 degrees south.

**Weather Summary for the Week Ending 8 am Monday 6/14/99**

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.08	9.89	-3.30	96	48	71.	3	635	69	50
CANOE BROOK	.09	9.59	-4.76	98	48	73.	5	779	249	55
CHARLOTTEBURG	.21	11.61	-2.74	94	42	68.	3	503	108	53
FLEMINGTON	.05	9.02	-4.63	96	47	72.	4	681	129	58
LONG VALLEY	.15	9.07	-5.58	90	48	69.	3	534	90	55
FREEHOLD	.10	9.39	-4.11	98	53	73.	4	783	152	52
LONG BRANCH	.03	9.91	-3.81	97	58	71.	3	684	112	28
NEW BRUNSWICK	.19	10.76	-2.47	96	51	72.	2	729	56	64
PEMBERTON	.10	10.81	-2.15	98	50	72.	2	807	145	26
TOMS RIVER	.00	5.12	-8.31	96	54	70.	3	659	88	24
TRENTON	.60	11.95	-.29	93	50	71.	0	644	-72	55
CAPE MAY COURT HOUSE	.08	6.93	-4.95	95	56	72.	3	771	132	16
DOWNSTOWN	.21	10.29	-1.85	94	52	72.	2	780	42	33
HAMMONTON	.17	8.94	-3.76	97	53	72.	1	780	71	25
POMONA	.16	9.30	-2.39	98	53	73.	4	746	102	27
SEABROOK	.20	10.04	-1.39	96	56	73.	2	883	139	33
ATLANTIC CITY MARINA	.03	7.46	-3.62	95	62	72.	4	782	191	20
WES KLINE — GDD BASE 40 PINEY HOLLOW Last Week MM (Ending 6/7/99) This Week 226 (Ending 6/14/99)										

Rutgers Cooperative Extension - NJAES  
U.S. DEPARTMENT OF AGRICULTURE  
Rutgers - The State University of New Jersey  
Plant & Pest Advisory  
18 College Farm Road  
Cook College  
New Brunswick, N.J. 08901-8551

## PLANT & PEST ADVISORY

### CRANBERRY EDITION CONTRIBUTORS

NJAES Blueberry Cranberry Research & Extension Center  
(609-726-1590)

Bradley A. Majek, Ph.D., Weed Science  
Peter Oudemans, Ph.D., Plant Pathology  
Sridhar Polavarapu, Ph.D., Entomology and IPM  
Nicholi Vorsa, Ph.D., Breeding, Genetics and Culture

Rutgers Cooperative Extension Agricultural Agent  
Raymond J. Samulis, Burlington County (609-265-5050)

Ocean Spray Cranberries  
Dan Schiffhauer, Agricultural Specialist

Newsletter Production  
Jack Rabin, Assistant Director, NJAES  
Cindy Rovins, Editor and Designer  
Mary Ann Hughes, Assistant Editor

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