RUTGERS COOPERATIVE EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION $1.50 MAY 19, 2004

INSIDE

Pest Notes

Gerald M. Ghidiu, Ph.D., Specialist in Vegetable Entomology

For all pesticide applications, read and follow all label instructions and restrictions before use.

✔ **Cabbage: Imported cabbageworms** are found in most cole crops at this time. The imported cabbageworm is the larvae of the white butterfly seen fluttering around cabbage fields on a sunny day. These pests can cause much damage through their feeding, but they are easily controlled using any of a variety of insecticides such as Asana, Avaunt, a B.t. material, Baythroid, Confirm, Danitol, Fury, Mustang Max, Lannate, Lorsban, Ambush, Pounce, Proclaim, SpinTor, or Warrior. Cost-effectiveness is an important consideration with imported cabbageworms because all materials will control this pest with equal effectiveness.

✔ **Eggplant:** If preplant or at- plant applications of an insecticide were not used, monitor plants closely for **Colorado potato beetle** adults, eggs and larvae. Many options are available, including a biological insecticide such as Novodor and Raven, which are effective against small larvae. Eggs are beginning to hatch, and first application of either Novodor or Raven should be applied at this time for maximum effectiveness. Many other effective insecticide options are available. A fermentation product such as SpinTor is also highly effective against potato beetle larvae.

Eggplant **flea beetles** can be a serious pest of young eggplant transplants if at-plant insecticides are not applied. Monitor closely for pin-size holes appearing in the leaves, similar to a "shot-gun" pattern of damage. Control flea beetles before damage is heavy. Use Actara, cryolite, Fury, Mustang Max, Guthion, Provado, Thionex (ex-Thiodan), Vydate L or Warrior for effective control.

✔ **Lettuce: Aphids** and **leafhoppers** are beginning to appear on spring leaf lettuce at the Rutgers Research and Extension Center in Bridgeton. The cool evenings and warm days will help the insect population to expand. Plants treated at plant with either Admire or Platinum will likely not have either of these pests, but it is best to monitor the plants regardless to ensure effectiveness of the treatment. If plants were not treated, and the population increases, several effective materials are available that will control both of these pests, including dimethoate, Lannate and Provado. If only aphids are present, other effective treatments include acephate, Assail, Fulfill, MSR and Provado.

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✔ **Onions**: **Onion maggot flies** have been active for several weeks, and oviposition has likely started. Treated seed (Trigard) or at-plant applications of Lorsban (dry bulb only) or diazinon are the only labeled materials for onions and onion maggot larvae. Foliar sprays of Ambush, diazinon, Fury, Mustang Max, or Warrior are labeled, and have shown to reduce the fly population.

✔ **Potato: Colorado potato beetle** eggs are beginning to hatch in untreated potatoes. Potatoes pretreated or treated at planting with either Admire or Platinum do not have potato beetle adults at this time, and the weather has been cooperating to ensure the maximum amount of time of effectiveness of the planting time applications.

European corn borer moths start to appear in blacklight traps when the degree day total reaches 400, and the flight is half over when the degree day total is 600. Currently, we have a total of over 500 degree days in south New Jersey, so it can be expected that moths are active at this time. Either monitor adult moth activity in local blacklight or pheromone traps, or look for corn borer egg masses on potato leaves (eggs hatch in about 4-5 days after oviposition). Use of Admire or Platinum at planting will not control corn borer larvae or reduce borer tunneling. Foliar sprays of Avaunt, Baythroid, Furadan, Guthion, Monitor, Penncap or SpinTor are effective against corn borer larvae.

✔ **Tomato:** Treatments for tomato for **Colorado potato beetle** control are the same as those for eggplant listed above. For other treatments, consult the *2004 Commercial Vegetable Production Recommendations*. ❑

IPM Update

Kristian Holmstrom, Program Associate in Vegetable IPM

Sweet Corn

As of this week, blacklight trap catches of adult **European corn borer (ECB)** have been very light (see ECB map). Data are incomplete from Burlington, Ocean, Monmouth, and Middlesex Counties as we finish deploying the trap network. There is enough information to indicate that the bulk of the ECB adult activity is in the Mercer County area. Typically, early generation activity is highest in the Salem and Cumberland County areas. Over the next two weeks, the situation should change with a shift in dominant ECB catches to the southern counties. As the flight progresses into mid-June, activity will increase in the northern counties.

Many early sweet corn plantings are still in the seedling stage, and are not affected by ECB activity. Some of the earliest plantings, including those under plastic, will be at the vulnerable whorl stage. It is important to begin scouting these plantings within the next week or so, as ECB egg laying and injury should take place soon. Check 5 consecutive plants each in 10 random locations throughout the planting. Look for the characteristic group of small holes ("shot-hole") in the leaves. Typically these holes will be found on the outer whorl leaves and also on consecutively younger leaves as the tiny ECB bore into the plant. Consider treating if 12% or more plants are infested with ECB.

While plants are in the whorl stage, it is possible to allow the feeding to increase prior to treating, although it is advisable to use an insecticide prior to tassel emergence. After treating, continue scouting regularly to assess infestation levels at the pretassel and tassel stages. ECB larvae will be evident by the discoloration they cause in the tassels. Consider treating as long as the infestation remains over 12%. Be sure to make one insecticide application at the full tassel stage (when the tassel spreads just prior to silking) to clean up ECB larvae moving down the stalks. This is critical to minimize damage to ears.

Current ECB activity is low, but should increase dramatically over the next 10-14 days. The highest average nightly ECB blacklight trap catches are:

Chapel Heights	1	Lawrenceville	1	Princeton	1
Croton	1	Little York	1	Sergeantsville	1
Fishing Creek	1	Mullica Hill	1		
Green Creek	1	Phillipsburg	1		

Cole Crops

Garden State Pest Management reports significant infestations of **imported cabbageworm (ICW)** and **diamondback moth larvae (DBM)** in Ocean County cabbage, broccoli, cauliflower and leafy greens plantings. This situation is likely to be common throughout the southern half of New Jersey at this time. Be sure to check all plantings weekly for the presence of these larval pests. Consider treating when greater than 20% are infested prior to heading or 5% are infested when heads are present. It is important to check the youngest leaves, as this is often where ICW are found. For collards, kale and mustard, consider treating if greater than 10% of the plants are infested at any time. **Flea beetle**

SEE IPM ON PAGE 3

Reduce Your Insecticide Bill!

Joseph Ingerson-Mahar, Vegetable IPM Coordinator

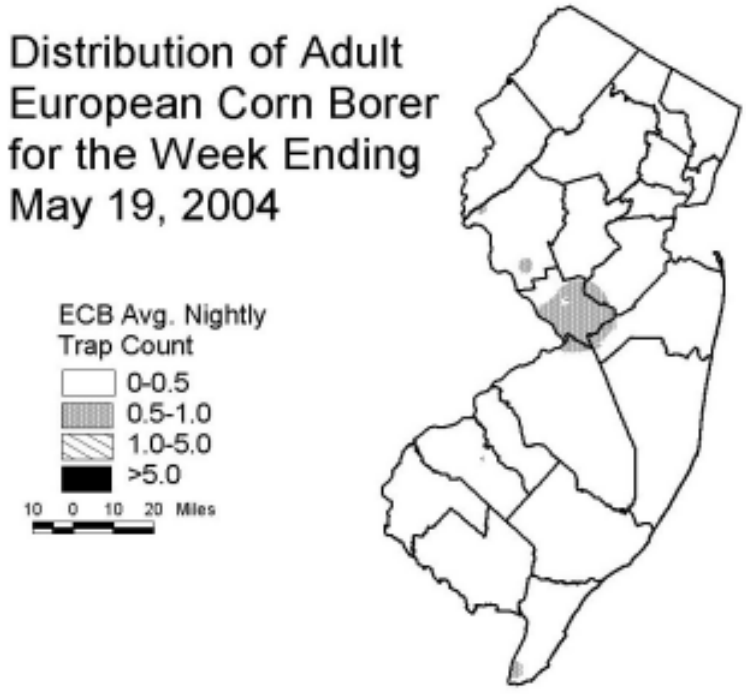
If you are tired of guessing when to spray insecticides to protect your crops from European corn borer and corn earworm, you should think about having a blacklight trap on your farm. Having your own blacklight provides you with the best estimate of the local population of these two pests. Many farmers look to see what their neighbor is doing but when it comes to pest management, what your neighbor is doing may not be the right thing for you to do. Even within short distances there can be considerable differences in the size of pest populations, especially migratory pests such as corn earworm.

Where can you obtain blacklights? You can purchase blacklight traps from Gemplers for approximately $700 apiece. You can also contact me or Kris Holmstrom at 732-932-9802 and have the Vegetable IPM Program provide you with a trap for $300 per season. If we provide the trap we will also have trained personnel check the trap twice a week through the growing season and provide you with the trap counts and for sweet corn provide recommendations for a spray schedule.

Most of us involved with vegetable production have noticed that after strong weather fronts move through we often have a surge in pest numbers, especially migratory pests such as corn earworm. Two summers ago, we had very few storm fronts but because of our blacklight system we detected a large increase in moth flights despite the lack of storms. Those farmers who had the blacklight traps were forewarned.

We also can set out pheromone traps for corn earworm, European corn borer, fall armyworm and beet armyworm for no additional cost.

We have a limited number of blacklight traps available. If you are interested contact us soon so we can help you protect your crops this season. ❑



Data collected and processed by: Kris Holmstrom, Marilyn Hughes
Rutgers Cooperative Extension & Center for Remote Sensing

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infestations should be treated when the pest is present on more than half the plants in the sample and damage is occurring.

Peppers

Peppers will be at some risk from **ECB** infestation as the flight increases in southern counties. Although the first ECB flight is not commonly associated with fruit damage, they will lay eggs on young plants. The resulting larvae will tunnel into the main stem of the plant, causing death above the point of entry and delaying development. It is advisable to scout the fields weekly, looking at 2 leaves per plant on 5 consecutive plants in 10 random locations. Consider treating if 2 or more plants are found to have ECB egg masses on them. The ECB egg mass is a flat, pale colored group of 15-30 eggs, and resembles fish scales. They will commonly be found on the underside of leaves.

Tomatoes

Field plantings of tomatoes in the RCE scouting program in the northern counties have been largely pest free over the past 1-2 weeks. It is likely that some **aphid** colonies will begin to appear soon, however. When deciding whether or not to treat for aphids, consider the age of the plant and the presence of predators and parasites. Aphids are often controlled naturally by syrphid fly (flower fly) maggots and *Aphidiid* wasps. The former is a colorful maggot that may be found feeding among the aphid colonies, and the latter causes the aphids to become bloated and golden in color as parasitism occurs. If these antagonists are found among aphids, control may be delayed as long as fruit are not affected directly by aphid droppings. Later in the season, as fruit begin to size, large aphid colonies will affect fruit quality as their droppings fall on the fruit surface. If this condition is occurring, treatment should not be delayed.

High Tunnel Vegetable ProductionTwilight Meeting

Wednesday, May 26, 2004, 6:30 PM
Rutgers Agricultural Research and Extension Center (RAREC)
121 Northville Rd., Bridgeton, NJ

The last twilight meeting in the spring series will concentrate on high tunnel vegetable production. Growers will have a chance to see the high tunnels constructed at RAREC; view equipment for planting in the tunnels; discuss insect control and observe the tomato research now underway. These high tunnels are part of a grant from the New Jersey Agricultural Experiment Station to enhance tomato production in the state.

Andy Wyenandt, Post Doc., working in vegetable plant pathology will be at the meeting to introduce himself to growers. Andy started May 3rd so come out and meet the new person on the block.

TOPICS

6:30 Construction of high tunnels for season extension
Wes Kline, Cumberland County Agricultural Agent

7:00 Tomato variety selection for early season production
Steve Garrison, Vegetable Specialist Emeritus

7:30 Use of predatory mites for two spotted mite control in high tunnels
Kris Holmstrom, Vegetable IPM Program Associate

8:00 Scouting high tunnels for insects and diseases
Joe Mahar, Vegetable IPM Coordinator

8:30 Summer insect control
Gerald Ghidiu, Specialist in Vegetable Entomology

9:00 The use of herbicides under plastic for early sweet corn production
Brad Majek, Specialist in Weed Science

Pesticide Recertification Credits have been requested. Please bring plant, insect, disease or weed samples to the meeting for identification.

For further information contact Richard VanVranken at RCE-Atlantic County at 609-625-0056, Wesley Kline, PhD, at RCE-Cumberland County at 856-451-2800 or Michelle Infante-Casella at RCE-Gloucester County at 856-307-6450. ❑

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much, much above normal, averaging 70 degrees north 70 degrees central and 74 degrees south. Extremes were 91 degrees at several locations on the 13th, and 50 degrees at Belvidere on the 17th. Weekly rainfall averaged 1.63 inches north, 0.56 inches central, and 0.33 inches south. The heaviest 24 hour total reported was 1.63 inches at Charlotteburg on the 10th to 11th. Estimated soil moisture, in percent of field capacity, this past week averaged 92 percent north, 77 percent central and 58 percent south. Four inch soil temperatures averaged 67 degrees north, 66 degrees central and 69 degrees south.

Weather Summary for the Week Ending 8 am Monday 5/17/ 4

	RAINFALL			TEMPERATURE				GDD BASE50		MON
WEATHER STATIONS	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	.91	9.51	-.25	87	50	71.	11	369	204	89
CANOE BROOK	2.23	12.33	1.56	91	55	72.	13	388	245	97
CHARLOTTEBURG	2.24	11.54	.93	86	51	69.	12	341	258	92
FLEMINGTON	1.33	12.05	1.81	89	54	71.	11	371	216	92
LONG VALLEY	1.01	9.78	-1.21	86	54	69.	11	311	204	93
NEWTON	2.06	10.31	.87	87	52	70.	12	319	210	97
FREEHOLD	.77	11.84	1.65	91	53	71.	10	429	230	85
LONG BRANCH	.12	11.15	.63	89	54	67.	7	299	132	56
NEW BRUNSWICK	1.17	10.74	.79	89	54	70.	8	381	156	98
TOMS RIVER	.51	11.80	1.59	91	57	72.	11	440	256	63
TRENTON	.22	10.61	1.39	88	55	72.	9	413	159	61
CAPE MAY COURT HOUSE	.30	9.27	.33	86	55	71.	10	386	163	33
DOWNSTOWN	.41	9.64	.45	88	59	75.	12	487	222	52
GLASSBORO	.62	13.06	3.31	88	59	74.	12	497	244	65
HAMMONTON	.34	10.14	.66	90	57	75.	13	503	258	41
POMONA	.10	8.10	-.82	88	56	73.	12	442	240	36
SEABROOK	.22	10.43	2.08	89	65	76.	13	546	276	55
SOUTH HARRISON	.62	12.47	3.00	88	60	75	NA	520	NA	NA

WES KLINE — GDD BASE 40 PINEY HOLLOW Last Week 129 (Ending 5/10/04) This Week 243 (Ending 5/17/04)

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