

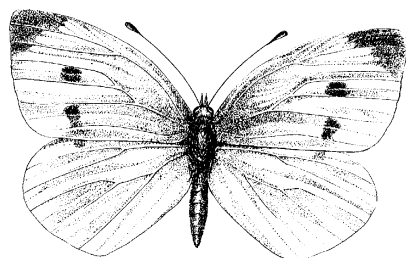
# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

MAY 24, 2000

## Vegetable IPM Update

*Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM*



### Cole Crops

Although cool weather has suppressed **imported cabbage worm (ICW)** and **diamondback moth (DBM)** activity recently, these pests are present in cole crop plantings. As weather warms over the weekend, feeding should increase on these crops. Weekly scouting of cole crop plantings is necessary to detect feeding from **ICW** and **DBM**. **DBM** is resistant to some insecticides, so when scouting, make certain which species are present. **DBM** is green, generally one half inch or less in size, tapered at both ends, and wriggles violently when touched. Consult the *2000 Commercial Vegetable Recommendations Guide* for current insecticide recommendations.

### Peppers

**European corn borer (ECB)** egg masses (9 per 50 plants) were easily found in a newly transplanted field of peppers in Salem County. In addition, egg hatch had occurred as larvae were found infesting a few of the stems (2 per 50 plants). While first generation **ECB** is not usually a problem, the level of egg laying and the resulting plant breakage from the infestations that were occurring may cause yield loss. This year the first generation of **ECB** has been earlier and higher than usual in the southern counties, particularly parts of Salem, Cumberland, and Gloucester counties. Since other host crops like corn may not be attractive to **ECB** yet, pepper transplants will be susceptible to early **ECB** infestations. Scout all fields for the presence of **ECB** egg masses on the undersides of the leaves and also look for small brown discolorations as evidence of stem infestations. While we don't have a tested threshold for **ECB** prior to fruiting, consider treating fields if you can easily find **ECB** egg masses and stem damage.

### Sweet Corn

Recent cool, wet weather has decreased adult **ECB** activity throughout the state (see **ECB** map). Prior to this cooler weather, however, a sizeable adult population was active. All whorl stage plantings in the southern and central counties should be checked for the presence of **ECB** larvae or feeding damage. In Burlington County egg laying was observed in a whorl stage planting, but larval infesta-

*SEE IPM ON PAGE 2*

## INSIDE

IPM Update .....	1
Veg Crops Diseases .....	3
Controlling Phosphorous Build-up on Your Farm .....	3
Pest Notes .....	4
Wet Soils .....	5
Weekly Weather Summary .....	5

tions were not yet found. Check for signs of feeding on 5 consecutive plants in 10 random locations in a planting. The threshold is 12% infestation, and for **ECB** a critical time for control is at the pretassel stage. In the northern counties, the few plantings that are advanced enough to support **ECB** feeding remain uninfested.

Light catches of **corn earworm (CEW)** adults have occurred over the last week through most of the state, although fewer were caught in the northern counties. Although sweet corn plantings are not currently at risk from **CEW**, these catches are an indication that we may have a damaging population present when early plantings go to silk.

**Flea beetle** numbers have been low in seedling sweet corn plantings during the past week as a result of cool weather and frequent rains.

The highest average nightly **ECB** blacklight trap catches are:

Mannington	4	Elmer	3	Folsom	2
Sergeantsville	4	Mullica Hill	3	Medford	2
Burlington	3	Crosswicks	2	Millstone	2
Cedarville	3	Downer	2	Tabernacle	2

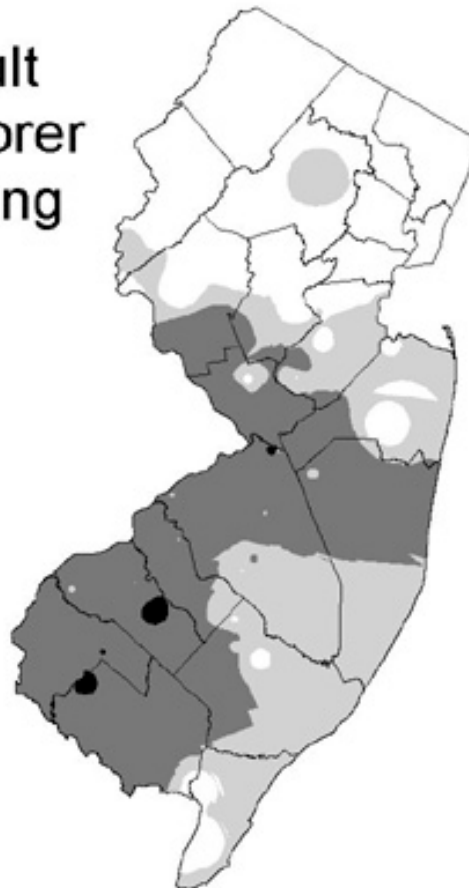
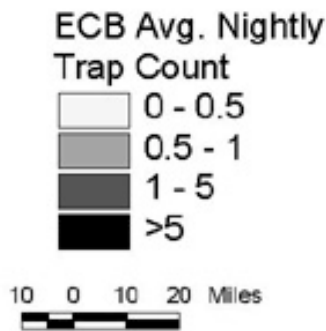
The highest average nightly **CEW** blacklight trap catches are:

Beckett	1	Cohansey	1	Medford	1
Burlington	1	E. Vineland	1	Millford	1
Cedarville	1	Hammonton	1	Oldwick	1
Centerton	1	Indian Mills	1	Pemberton	1

### White Potatoes

The first infestations of **ECB** larvae were found in a field in Salem County at the end of last week. The initial infestations of **ECB** larvae can be difficult to see in the field. Look for the presence of small brown discolorations on the stems. If you break them open, you should find a small **ECB** larvae inside (a light brown or cream colored worm with a black head). Most of the infested leaves and stems seen were in the lower half of the plant. Also look for **ECB** infestations where the leaves meet the stem. Although the moth counts have dropped with the cooler weather, we do expect activity to increase when the weather improves again.

## Distribution of Adult European Corn Borer for the Week Ending May 24, 2000



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

# Vegetable Crops Diseases

Stephen A. Johnston, Ph.D., Plant Pathology

✓ **Asparagus:** Do not overcut production beds to minimize stress, which will result in an increase in **Fusarium root & crown rot**. Eight weeks is the recommended harvest period for production fields. Do not harvest fields longer than an eight-week period.

✓ **Bean (snap & lima):** Apply Ridomil Gold 4E in a 7-inch band over the row after seeding for control of damping-off caused by **Pythium**. In fields with a history of damping-off caused by **Rhizoctonia**, apply Ridomil Gold PC 11G in-furrow at seeding for control.

✓ **Cole crops:** Observe fields for the presence of **Alternaria leaf spot & downy mildew**. Once observed apply maneb as a foliar spray every 7-10 days for control.

✓ **Cucumber:** Maintain an insecticide program from emergence or transplanting until flowering for control of the **cucumber beetle** that transmits **bacterial wilt**. Apply a foliar spray of a copper fungicide + mancozeb shortly after transplanting or when plants are in the 4-5 leaf stage, and repeat every 7 days for 2-3 applications for control of **angular leaf spot**.

✓ **Eggplant:** Apply mefenoxam (Ridomil Gold or Ultra Flourish) in a 12 to 16-inch band over the row or through drip irrigation following transplanting, 21 and 42 days later for control of **Phytophthora blight**.

✓ **Lettuce:** Apply maneb as a foliar spray every 10 days for control of **downy mildew**.

✓ **Muskmelon:** Maintain an insecticide program from emergence or transplanting until flowering for control of the **cucumber beetle** that transmits **bacterial wilt**. Once vines begin to run, alternate Bravo or mancozeb with Quadris every 7 days for control of **Alternaria leaf blight**.

✓ **Parsley:** Maintain applications of a copper fungicide every 7 days for control of leaf spots.

✓ **Pepper: Phytophthora blight** is present in some fields at this time. Infected plants are completely wilted, and a black, girdling lesion is present at the base of the stem. Remove infected plants from the field to prevent spread of the aerial phase of the disease. Maintain applications of mefenoxam (Ridomil Gold 4E or Ultra Flourish) every 21 days. Shortly after transplanting, apply a copper fungicide + maneb as a foliar spray and repeat 2-3 times every 7 days for control of **bacterial spot**.

✓ **Potato (white):** The weather is ideal for **late blight**. Maintain an application of mancozeb every 7 days for prevention. When tubers are nickel size, apply Ridomil Gold MZ as a foliar spray and repeat in 14 days for control of **pink rot**.

✓ **Spinach:** Observe fields for the presence of **white rust**. Once observed, apply Quadris and repeat every 7-10 days.

✓ **Squash (summer): Phytophthora blight** is present in some fields at this time. Infected plants are completely wilted with a dark, girdling lesion at the base of the stem and petioles. Remove infected plants from the field, and apply Ridomil Gold Bravo or Flouronil as a foliar spray every 14 days for control.

✓ **Tomato:** Weather conditions are ideal for **late blight**. Apply a copper fungicide + the full rate of mancozeb (3 lb/A of 75DF) for control of **late blight** and **bacterial diseases**. □

# Controlling Phosphorous Build-up on Your Farm

Brian Aldrich, Agricultural Outreach Specialist, North Jersey Resource Conservation & Development Council

There has been increasing public concern over the potential for agricultural sources of phosphorous to cause pollution of surface waters. Pennsylvania, Delaware and Maryland have all passed nutrient management laws. New Jersey does not have a nutrient management law at this time. The approach in New Jersey has been to provide incentives to encourage voluntary change, instead of regulating. We have a grace period. If the agricultural community in New Jersey shows that it can handle phosphorous management on its own, then regulation may not be needed.

Some folks point out that there are also significant non-agricultural sources of phosphorous, such as septic systems. While this is true, no one really knows exactly how much of the phosphorous in streams, rivers and lakes is coming from which sources. Since farmers are outnumbered politically, our best defense is to take a proactive stance. The fact is that in most cases, improving phosphorous management will also improve your profitability. So it really won't be any skin off our bones to address this issue. In cases where investments for sediment control are needed, there are some cost-share funds available, such as through USDA's Environmental Quality Incentives Program.

Not all farms have a phosphorous problem, nor does every field on a given farm have a phosphorous problem. The only way to know which farms and fields have high phosphorous is to take a soil test for each field. If your test results show that your fields vary greatly in their level of phosphorous, then you have to be prepared to

SEE PHOSPHOROUS ON PAGE 4

fertilize them differently, instead of applying a uniform, blanket application across the farm. While this will require more management effort on your part, it should reap positive returns for your bottom line.

Some farmers and specialists have pointed out that there are other factors besides the soil test level which affect whether or not a field truly poses a threat to water quality. What about a field which is far away from streams as opposed to a field which borders a stream? What about a flat field as opposed to a steep one? A field in row crops versus a field in hay? To address these concerns and provide a more site-specific approach to managing phosphorous, some states are developing a phosphorous "index". (An "index" is a unitless number that combines several measurements into one value.) In addition to the level of soil test phosphorous, these indices also consider factors like slope, slope length, erodibility (soil type), closeness to surface waters, tillage practice, and the use of strip-cropping and buffer strips.

When completed, the phosphorous index will be a useful tool to evaluate each farm individually, helping to make recommendations which are realistic, flexible, and manageable. Your cooperative extension agent, crop consultant, or soil conservationist can help you determine if phosphorous is a problem on your farm, and help make a plan to control further buildup. If we in the agricultural community can show that we can successfully "self-regulate", then laws may not be needed. If we can show that we can both improve profitability and protect the environment at the same time, it will be a win-win situation. □

## Pest Notes

Gerald M. Ghidui, Ph.D., Entomology

✓ **Cabbage:** Imported cabbageworms are the primary pest of cole crops, including cabbage. Many materials are currently labeled, including many biological pesticides (*B.t.'s*). For a listing of some of these, consult pages 82-83 of the *2000 New Jersey Commercial Vegetable Production Recommendations*.

✓ **Eggplant:** The numbers of **adult flea beetles** on eggplant have been slowly increasing in some areas throughout southern New Jersey. These pests often go unseen, although their damage is very characteristic and easily identifiable. Look for numerous small, shotgun type holes in the leaves. These holes get larger as the leaf expands, and frequently rip or shred from the wind. If holes are numerous, the leaf may dry out and drop from the plant. The **adult flea beetles** are very active, and often jump before being seen. Look for **flea beetles** on the upper leaf surfaces well in front of you on a sunny day. Effective materials include cryolite, Guthion, Provado, SpinTor, Thiordan and Vydate. The pyrethroids, such as Capture EC and Asana XL, will also control **flea beetles** effectively. Consult label for all rates and restrictions.

✓ **Pepper:** The number of **European corn borer moths** recently trapped in blacklight traps has been high because of the warm, humid nights. If left unsprayed, it is likely that some stem/stalk damage can occur. IPM Program Associate Sarah Walker reports that up to 14% of the plants in southern New Jersey had **corn borer** egg masses, even though many of the plants were small. There are no thresholds for **European corn borer moths** or egg masses for the first generation **moths** (spring generation). The amount of damage that can be done is uncertain. If no sprays are used, at least a few of the plants can have damaged stems. However, it is generally agreed that the cost of the pesticide and its application exceed the benefits one might obtain from **borer** control at this time.

Eggs will likely hatch this week. If the **borer** activity continues, at least 2 and maybe 3 pesticide applications may be needed to obtain effective control.

✓ **Potato:** The **European corn borer moth** activity has almost stopped temporarily because of the cold, wet weather during the evening hours. However, it should be dry and warm during the rest of this week, and it is likely that **borer moth** activity will rapidly increase, including egg laying on potatoes. Sarah Walker found damaged stems on some of the more mature potato plants, with small **borers** inside. However, no control methods are available once **borers** have entered the stems, so present damage cannot be corrected. However, if **moth** numbers increase in local **corn borer** traps during the next few days as expected, growers should monitor for egg masses on potatoes and consider a pesticide application before the eggs hatch and **borers** enter the plant. Effective materials include Furadan, Guthion, Monitor, Penncap-M, SpinTor, and the pyrethroids Ambush, Pounce, Baythroid, or Asana XL. See page 167 of the *2000 Commercial Vegetable Growers Recommendations for New Jersey* for more information concerning rates, timing, etc. □

## Wet Soils

*J. C. F. Tedrow, Ph.D., Professor Emeritus,  
Environmental and Natural Resources, Cook  
College*

One of the most important factors limiting crop production in New Jersey is lack of proper water-air balance in the soil. While many soils drain too rapidly and have poor moisture retention, many other cases exist where the soils have some degree of impeded drainage.

Oxygen is needed in the soil in large quantities, this source being primarily from the atmosphere. One of the important functions of oxygen is to permit the development of a larger root system that can pick up more plant nutrients from the soil. If the soil is water-logged, little or no oxygen will get into the soil, and plants will not make normal growth.

The soil profile reveals the air-water relationships in the soil. When soils are water-logged or semi-

water-logged, they show signs of **mottling**. Mottling means there is too much water in the soil and gaseous exchange is not rapid enough.

Following are some facts to remember:

- ✓ The best soils for general crops show no signs of mottling.
- ✓ If the mottling is deep, it will not cause as much trouble for plants as if it is shallow.
- ✓ Strong mottling and gray colors are signs of wet soil conditions.
- ✓ Crops that should be grown only where no mottling is found are: alfalfa, corn, potatoes, orchards, and most vegetables. Crops that will tolerate an intermediate amount of mottling are: small grains (except wheat), and alsike clover. Crops that will tolerate a high degree of mottling are: red top, Reed canary grass, and timothy. Some special crops, particularly cranberries and blueberries, however, not only tolerate wet soils, but thrive on them.

*Submitted by Joseph Heckman, Ph.D., Soil Fertility.* □

## Weekly Weather Summary

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

Temperatures averaged much below normal. Extremes were 84 at Pemberton on the 19th and 31 degrees at Charlotteburg on the 16th. Weekly rainfall averaged 2.10 inches north, 1.67 inches central, and 0.60 inches south. The heaviest 24 hour total was 1.45 inches at Canoe Brook on the 18th to the 19th. Estimated soil moisture, in percent of field capacity, this past week averaged 96 percent north, 91 percent central and 57 percent south. Four inch soil temperatures averaged 58 degrees north, 61 degrees central and 61 degrees south.

**Weather Summary for the Week Ending 8 am Monday 5/22/00**

WEATHER STATIONS	RAINFALL					TEMPERATURE					GDD BASE50		MON	%FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	TOT				
BELVIDERE BRIDGE	2.15	12.37	2.03	79	38	55.	-6	331	112	99				
CANOE BROOK	2.50	8.81	-2.61	83	39	57.	-4	391	196	99				
CHARLOTTEBURG	1.52	11.22	-.02	78	31	52.	-6	237	115	99				
FLEMINGTON	1.97	10.63	-.20	82	38	58.	-3	417	209	99				
LONG VALLEY	2.37	10.70	-.95	76	38	54.	-5	287	136	99				
FREEHOLD	1.25	8.13	-2.66	82	43	60.	-3	443	183	99				
LONG BRANCH	1.72	9.92	-1.22	77	44	56.	-6	302	80	97				
NEW BRUNSWICK	1.67	10.27	-.31	82	40	58.	-5	415	128	99				
PEMBERTON	1.86	10.11	-.18	84	44	62.	-1	664	380	97				
TOMS RIVER	1.38	8.67	-2.12	78	41	57.	-5	407	163	100				
TRENTON	2.12	9.40	-.37	81	42	59.	-5	473	152	98				
CAPE MAY COURT HOUSE	.61	10.36	.89	74	44	59.	-4	421	137	49				
DOWNSTOWN	.49	10.57	.84	83	41	59.	-5	482	149	73				
GLASSBORO	1.12	11.42	1.09	84	48	60.	-4	533	214	97				
HAMMONTON	.68	8.35	-1.70	82	41	58.	-6	449	138	71				
POMONA	.34	7.90	-1.51	76	41	58.	-4	409	148	48				
SEABROOK	.56	11.99	3.12	83	46	61.	-3	530	192	71				
ATLANTIC CITY MARINA	.42	9.06	.16	69	50	59.	-2	421	172	50				
WOODSTOWN	.63	13.22	3.14	84	39	60	NA	541	NA	NA				
WES KLINE — GDD BASE 40 PINEY HOLLOW	Last Week 225 (Ending 5/15/00) This Week 133 (Ending 5/22/00)													

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