

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

MAY 31, 2000

Vegetable Crops Diseases

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



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✓ **Asparagus:** The normal harvest period should stop on June 15th; however, most fields were harvested earlier this year due to the warm weather. An 8-week harvest period is recommended to reduce stress from overcutting fields in order to reduce the incidence of **Fusarium root & crown rot**. Therefore, harvest should stop shortly.

✓ **Bean (Snap):** The abundance of rain this season has resulted in saturated soils in many areas of the state. Fungicide application is recommended on fields in which the soil has been wet for 6-10 days before bloom. The application is recommended when 70-80% of the plants in the field have one or more open blossoms. A second spray should be made 5-6 days later for control of **white mold (Sclerotinia)**. Add a surfactant to the spray mixture to prolong control.

✓ **Beet:** Maintain applications of a copper fungicide every 7-10 days for control of **leaf spot**.

✓ **Cole crops:** Maintain applications of maneb every 7-10 days for control of **Alternaria leaf spot** and **downy mildew**.

✓ **Cucumber:** Maintain applications of a copper fungicide + mancozeb every 7 days for control of **angular leaf spot** and to assist in control of the fruit rot phase of **Phytophthora blight**.

✓ **Eggplant:** Apply mefenoxam (Ridomil Gold or Ultra Flourish) every 21 days for a total of 3 applications for the control of **Phytophthora blight**.

✓ **Lettuce:** **Corky root** is present in fields of Romaine at this time. Infected plants are stunted, and the taproot of infected plants is dark brown with deep cracks. The variety, 'Athena' possesses resistance to the disease and should be grown in future years whenever possible. Maintain applications of maneb as a foliar spray every 10 days for the control of **downy mildew**.

✓ **Muskmelon:** Alternate Bravo or mancozeb with Quadris every 7 days for control of **Alternaria blight**.

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

✓ **Peppers:** **Gray mold** is present on plants in greenhouses at this time. Infected plants have a tan, girdling lesion near the base of the stem. Maintain adequate airflow in greenhouses to decrease the relative humidity in order to reduce conditions favorable for disease development. Maintain applications of mefenoxam (Ridomil Gold

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or Ultra Flourish) every 21 days for control of **Phytophthora blight**.

✓ **Potato (Sweet):** Use sprouts that are cut above the soil line whenever possible to reduce the incidence of **scurf**.

✓ **Potato (White):** Maintain applications of mancozeb every 7 days for prevention of **late blight**. Conditions remain favorable for disease development. When tubers are nickel size, apply Ridomil Gold MZ as a foliar spray and repeat in 14 days for control of **pink rot**.

✓ **Pumpkin:** Be sure to select well-drained fields with no low areas for production to minimize the incidence of **Phytophthora blight**.

✓ **Squash (Summer):** **Phytophthora blight** continues to appear in fields at this time. The aerial phase is present in several fields. Infected plants have a black lesion encompassing the upper portion of the plant and extending up the petioles. Maintain applications of Ridomil Gold/Bravo or Flouironil as a foliar spray every 14 days for control. In some fields on plastic mulch, plants approaching harvest stage are wilting in the afternoon; yet, are turgid in the morning. This is not due to a disease, but rather is the result of a poorly developed root system.

✓ **Tomato:** Maintain applications of a copper fungicide + the full rate of mancozeb for control of **late blight** and **bacterial diseases**.

✓ **Watermelon:** **Pythium root rot** and **Phytophthora crown rot** are present in several fields at this time. Infected seedlings completely wilt and die. The base of the stem is water-soaked and hollow. Apply mefenoxam (Ridomil Gold or Ultra Flourish) for control. Also, remove infected plants in order to reduce the production of spores that can infect other plants in the field. **Bacterial leaf spot** is present in some fields. Infected leaves contain small black lesions, which are water-soaked on the underside of the leaf. Apply a copper fungicide + mancozeb as a foliar spray every 7 days for control. □

Pest Notes

Gerald M. Ghidui, Ph.D., Vegetable Entomology

✓ **General:** The flight activity of the adult **European corn borer moths** has been reduced as a result of the cool, wet, windy weather conditions during the past week or more. However, as temperatures rise this week and the fields dry out, it is likely that **moth** activity will resume. Follow the **moth** activity through the newsletters, light traps, or IPM scouts to determine when activity increases in your specific area. After activity increases, monitor the potato and pepper fields for egg masses or stem damage, and treat accordingly (follow recommendations for each crop in the *New Jersey 2000 Commercial Vegetable Production Recommendations*).

✓ **Beans (Snap, Limas):** Several growers report the buildup of **bean aphid** colonies. These pests appear as groups or colonies of small, soft-bodied black "plant lice." They usually are not damaging until they become well distributed through the field and 50% or more of the plants have small colonies of 5 or more **aphids**. **Aphid** populations can rapidly increase as the temperatures warm. Effective materials include dimethoate, Lannate and Orthene. Some growers report that diazinon, which is also labeled, is effective as well. After each pesticide application, monitor the plants to determine the level of control that was obtained.

✓ **Eggplant:** **Flea beetles** were fairly common 1-2 weeks ago, but the cool wet weather has minimized their activity. As the temperatures slowly increase this week, watch closely for these pests, as it is likely that they will appear in high numbers fairly rapidly. Closely monitor the fields during the next two weeks, and treat when holes start appearing in the leaves and the plants are still small. **Flea beetles** are easily managed, and resistance to pesticides is not yet documented. Cryolite, Guthion, Provado, SpinTor, Thiodan, and Vydate are labeled and effective. Thorough coverage is important with most of these materials.

✓ **Pepper:** It is important to remember that, according to the new federal labels for the use of acephate on peppers (Orthene 75S, Address 75S, 90S), only two applications can be made per season. Orthene is excellent for control of the **European corn borer**, and it would be advantageous to use this product for the first two applications at the beginning of the second-generation corn borer season (late July, early August) instead of now for **aphids** and **flea beetles**. There are many alternatives for early season **flea beetle** and **aphid** control that can be used at this time, including Lannate, Provado, Vydate, Thiodan, and Metasystox-R. Consult the *New Jersey 2000 Commercial Vegetable Production Recommendations* for more information on **flea beetles**, **aphids**, **corn borers** and their control in peppers.

✓ **Potato:** In a few areas of South Jersey, the eggs, adults, and second and third instars of **Colorado potato beetles** can be found on potato plants in low numbers, indicating that the at-plant applications (or seed treatments) of Admire 2F are no longer effective. Closely monitor these pests, especially this week as the temperatures warm up and the warm, humid weather returns. Numerous effective insecticides for **potato beetle** control are currently labeled, including Agri-Mek, cryolite, Ecozin (larvae only), the bio-

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Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much below normal. Extremes were 86 at Pemberton on the 24th and 39 degrees at Charlotteburg on the 28th. Weekly rainfall averaged 1.10 inches north, 1.16 inches central, and 1.25 inches south. The heaviest 24 hour total was 1.18 inches at Cape May Courthouse on the 22nd to the 23rd. Estimated soil moisture, in percent of field capacity, this past week averaged 96 percent north, 94 percent central and 86 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 5/29/ 0

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	1.27	13.64	2.49	78	45	60.	-3	402	96	89
CANOE BROOK	.82	9.63	-2.69	81	48	62.	-1	474	194	91
CHARLOTTEBURG	.72	11.94	-.20	79	39	57.	-3	287	98	88
FLEMINGTON	1.37	12.00	.34	81	47	60.	-3	490	194	93
LONG VALLEY	1.31	12.01	-.56	75	45	58.	-3	342	117	90
FREEHOLD	1.00	9.13	-2.51	79	46	61.	-4	524	167	89
LONG BRANCH	1.05	10.97	-1.04	82	49	61.	-3	381	69	81
NEW BRUNSWICK	1.31	11.58	.12	82	48	61.	-4	495	108	92
PEMBERTON	.85	10.96	-.11	86	50	66.	1	780	397	80
TOMS RIVER	1.17	9.84	-1.77	83	47	61.	-2	485	151	86
TRENTON	1.55	10.95	.42	80	48	61.	-5	549	121	81
CAPE MAY COURT HOUSE	2.08	12.44	2.24	81	52	62.	-3	505	125	100
DOWNSTOWN	.80	11.37	.90	81	50	62.	-4	566	125	72
GLASSBORO	.81	12.23	1.09	82	48	62.	-4	621	197	90
HAMMONTON	1.53	9.88	-.96	80	49	61.	-5	530	114	88
POMONA	1.55	9.45	-.66	81	50	61.	-3	488	133	88
SEABROOK	.85	12.84	3.24	81	52	62.	-4	616	170	76
ATLANTIC CITY MARINA	1.15	10.21	.66	80	53	63.	0	510	173	73
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week 133 (Ending 5/22/00)										
This Week 154 (Ending 5/29/00)										

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logical insecticides Novador or Raven (larvae only), Provado, SpinTor, Thiodan, and Vydate. Also, Guthion and Imidan are older materials that may still be effective in some areas, especially if these materials have not been used against potato beetles for many years. Consult the label for all rates and restrictions for each product. □

Vegetable IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Peppers

We are currently monitoring pepper plantings for **aphids** and **European corn borer (ECB)** activity (egg masses and evidence of stem infestations). **Aphid** levels continue to be low in the plantings we have checked. The first generation **ECB** adult activity has been fluctuating according to the changes in temperatures, and while counts have decreased this past week (see **ECB** map), we expect an increase again when the temperatures increase at the end of this week. Despite lower adult counts, new **ECB** egg masses are still being found in one pepper planting in the Salem County, and some hatch and stem infestation has already occurred. While checking leaves for **aphids** (2 leaves on 5 plants in 10 locations), look for the presence of silvery or creamy white **ECB** egg masses on the older leaves in the lower third of the plant. Usually we wait until 0.5-inch size fruit are present to begin **ECB** treatments in peppers, but if egg masses are easily found on small transplants it may be necessary to treat early for this pest.

Sweet Corn

ECB feeding has been found in southern and central whorl stage plantings. Monitor all whorl to pretassel stage plantings for evidence of **ECB** feeding damage. Check 5 consecutive plants in 10 random locations in a planting and consider treating plantings if the threshold of 12% infestation is exceeded. Timing of sprays is important for good **ECB** control to prevent borers from entering the stalks. Critical times to control **ECB** are when the tassels begin to push out of the whorl, and again at full tassel.

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

Shirley	6	Mullica Hill	3	Hopewell	2
Mannington	4	Centerton	2	Manville	2
Sergeantsville	4	Denville	2	Millstone	2
Downer	3	Ellisdale	2	Woodstown	2

Corn earworm (CEW) activity has become more uniform around the central and southern portions of the state, and although the counts have been less than 1 at most farms (see **CEW** map), larvae may start to show up as early as next week in whorl and pretassel corn. The threshold of 12% applies to this pest in plantings prior to silk. Any silk stage corn in the southern counties should be on a 4-6 day spray schedule at this time.

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

Folsom	2	Elmer	1	Pedricktown	1
Medford	2	Farmingdale	1	Pemberton	1
Cohansey	1	Fishing Creek	1	Sewell	1
E. Vineland	1	Milltown	1	Wall	1

White Potatoes

ECB stem infestations continue to be found in some early planted potatoes. We haven't seen leaf or terminal flagging (wilting from the point of **ECB** entry), but instead have been finding small brown entry holes and the presence of small larvae in the lower stems and leaves. The adult moth counts in the blacklight traps have been fluctuating with the changes in temperatures, and while counts are down this week (see the **ECB** map), moths are still active in some of the fields we have been scouting. We expect trap counts to increase again with warmer weather. The second **ECB** peak in the potato area (Salem and Cumberland counties) occurred last week, so based on a trap threshold of 8-10 per night, susceptible fields should be treated by the weekend or early next week.

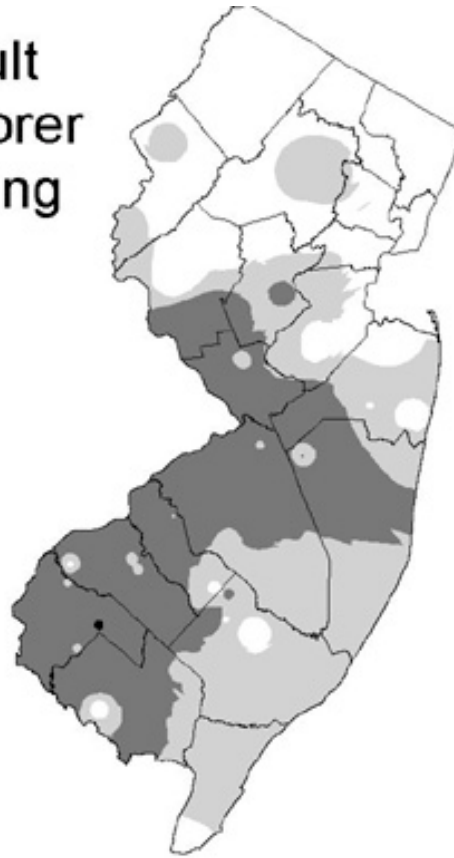
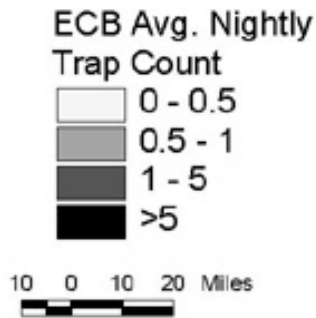
Potato leafhopper adults have been found as far north as Morris County, and are now probably in all counties. The cooler weather has been keeping the populations low. Using a sweep net, take 10 sweeps in 5 random sites in the field. The threshold level is 25 adults per 50 sweeps. Check also for leafhopper nymphs on 5 leaves in 10 random locations and treat if levels exceed 5 nymphs per 50 leaves. Populations can be very localized, so make sure to check all fields.

Cole Crops

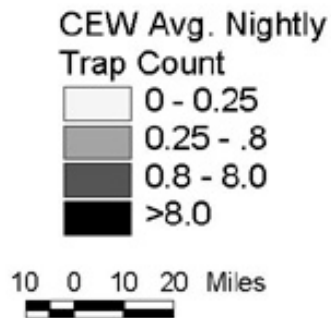
Continue to monitor plantings for the presence of **diamondback moth larvae (DBM)** and **imported cabbageworm (ICW)**. These pests are present in many fields throughout the state, although feeding and egg laying has been suppressed somewhat by cool temperatures. As warmer weather occurs at the end of the week, expect feeding to increase.

SEE **ECB** AND **CEW** MAPS ON PAGE 5

Distribution of Adult European Corn Borer for the Week Ending May 31, 2000



Distribution of Adult Corn Earworm for the Week Ending May 31, 2000



Data collected and processed by: Kris Holmstrom, Saily Walker, Marilyn Hughes
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