

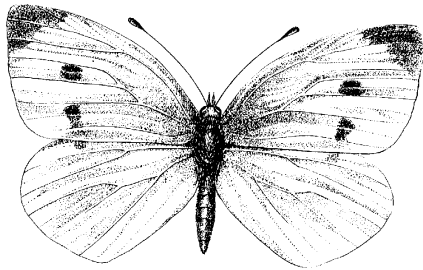
PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

SEPTEMBER 8, 1999

Pest Notes

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



INSIDE

Pest Notes	1
Veg Crops Diseases	2
Public Meeting on Snow Goose Management	2
IPM Updtae	3
Weekly Weather Summary	4

✓ **Cabbage:** **Cabbage looper moth** levels based on blacklight trap captures are still low at this time (less than 1 moth per 2-3 nights). Recent storm activity may change this rapidly, thus it is important to frequently monitor the cole crops for insect pest activity (insect presence or damage). **Imported cabbageworm** eggs are cream to yellow in color, oval, and are usually found on the undersides of leaves. **Cabbage looper** eggs are tan in color, round, and may be found on both sides of the leaves. Treat cabbage when 20% or more of the plants are infested with any worm species before heading and when 5% of the plants are infested once heads form. See page 81 of the *1999 Commercial Vegetable Production Recommendations for New Jersey* for complete information on recommended materials and application methods.

Diamondback moth activity is still low at this time, but it is best to actively search the fields for this pest. Management of **diamondback moth** is more effective if control methods are applied before the population reaches a high level.

✓ **Lettuce:** **Corn earworm (lettuce headworm)** activity is still extremely high, and moths are found in high numbers in lettuce and corn fields. Lettuce plants in the 7- to 18- leaf stage are vulnerable to **earworm** attack at this time. Control *must* be achieved before center leaves start to form a head. **Corn earworms** easily become a problem in lettuce after the moth count reaches 20 moths per night in local blacklight traps, and our traps have exceeded 50-100 moths per night. If Lannate is used, apply every 2-5 days; and if a pyrethroid is used, apply every 5-7 days. More frequent applications may be necessary because of the constant high activity of the **earworm moths**. The pyrethroids include Ammo, Fury, Mustang, Pounce, Ambush, and Warrior. Consult label of each for rates and restrictions on lettuce.

✓ **Pepper:** the number of **European corn borer moths** caught in the blacklight traps is still high, and treatments are recommended for control of this pest. Because **corn earworm moth** activity is also very high, select a management tool that is effective against both **corn borer** and **corn earworm**. Asana and Baythroid are pyrethroids that are labeled and effective against both of these pests in peppers. For more information, consult page 119 of the *1999 Commercial Vegetable Production Recommendations for New Jersey*. □

Vegetable Crops Diseases

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

✓ **Asparagus:** Maintain fungicide applications every 7-10 days for the control of **purple spot & rust**. Recent rains are favorable for disease development, and diseases can destroy the brush. Fields where the brush is lost (turn brown) become susceptible to **Fusarium root & crown rot**.

✓ **Bean (Snap & Lima):** Recent rains have resulted in saturated soils in many fields. If the soil has been wet 6-10 days before bloom, a fungicide should be applied when 70-80% of the plants have one or more open blossoms for control of **white mold (Sclerotinia)**. A second fungicide application should be made 5-6 days later. **Pythium pod rot** is present in fields where the pods touch the soil surface. This disease is characterized by the presence of a white, fluffy mycelium on the pods, and infected pods quickly deteriorate. Fungicides used for **white mold** control will not control **Pythium pod rot**. For **Pythium pod rot** control, Ridomil Gold 4E should have been applied at seeding.

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

✓ **Carrot:** Recent rains have resulted in considerable regrowth of leaf tissue; however, continue to maintain a 10-day fungicide schedule for the control of **leaf blights**.

✓ **Cole Crops:** Maintain applications of Bravo or maneb every 7-10 days for the control of **Alternaria leaf spot & downy mildew**.

✓ **Corn (Sweet):** Observe fields for the presence of **rust**. Once observed in fields at the whorl stage or younger, apply a fungicide and repeat every 7-10 days.

✓ **Cucumber:** **Anthracnose** is present in fields at this time. Infected leaves contain numerous, circular, brown lesions scattered over the surface. Apply Bravo + Benlate or Topsin alternated on a 7-day schedule with Quadris for control.

✓ **Eggplant:** Maintain applications of a copper fungicide + maneb with a spreader sticker every 7-10 days for control of **Phytophthora & Phomopsis fruit rots**.

✓ **Leek:** Maintain applications of Bravo every 10 days for the control of **purple blotch**.

✓ **Lettuce:** Apply Ronilan or Rovral 10 and 20 days later after thinning, as a directed spray to the base of the plants and surrounding soil for the control of **drop**. Rovral will also provide control of **bottom rot**.

✓ **Muskmelon:** Maintain applications of Bravo alternated with Quadris every 7-10 days for control of **foliar diseases**.

Upcoming Public Meeting on Snow Goose Management

Janet L. Bucknall, State Director, USDA APHIS Wildlife Services

The U.S. Fish and Wildlife Service (FWS) will hold nine public meetings around the country during September and October. The meetings are to solicit public comments on the scope of an Environmental Impact Statement (EIS) regarding management of snow geese in the US. New Jersey farmers may wish to attend the meeting scheduled for Wednesday, September 29 at the Richard Stockton College of New Jersey (7:00 - 9:30 PM, "A" Wing Lecture Hall, Jimmie Leeds Rd., Pomona, NJ) to comment on the severity and distribution of snow goose damage to agriculture in New Jersey.

Issues presented to the FWS will be addressed in the EIS, and will contribute towards overall snow goose management in the U.S. Similar meetings will be conducted in DE, TX, NM, DC, CA, LA, ND, and MO; this is a unique opportunity for New Jersey residents to directly participate in an important wildlife management process. □

✓ **Pepper:** Maintain applications of a copper fungicide + maneb with a spreader sticker every 7-10 days for the control of **anthracnose & Phytophthora blight**.

✓ **Pumpkin & Squash (Winter):** Recent rains have resulted in considerable new foliage in fields at this time. Maintain applications of Bravo alternated with Quadris every 7-10 days to protect the foliage from **downy & powdery mildews**. It is essential to protect foliage from diseases to prevent defoliation. Premature defoliation results in "handles" or poor fruit stems.

✓ **Spinach:** Observe fields for the presence of **white rust**. Once observed, apply a copper fungicide for control. Be sure to use the lowest labeled rate to reduce phytotoxicity.

✓ **Squash (Summer):** Maintain applications of Ridomil Gold/Bravo or Ridomil Gold MZ every 14 days for the control of **foliar diseases**.

✓ **Tomato:** **Pythium fruit rot** is present on fruit at this time in fields with bare ground culture. Infected fruit have white, fluffy mycelium present, and they soon collapse. Apply Ridomil Gold/Bravo or Ridomil Gold MZ alternated with Quadris every 7 days for control. □

IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Corn Earworm Alert

The adult **corn earworm (CEW)** population continues to be at very high levels in many locations. With the recent passing of tropical storm Dennis, these high numbers should remain steady or increase. This population of **CEW** puts at risk such crops as sweet corn, snap and lima beans, lettuce, peppers, and tomatoes. See individual crop summaries in this section. Consult the *1999 Commercial Vegetable Production Recommendations* for appropriate control measures. **Note:** No **CEW** and **European corn borer (ECB)** distribution maps have been produced for this week. Maps will resume next week.

Lettuce

Very high populations of **CEW** are present statewide, and larvae have been reported infesting lettuce crops in Cumberland County. Sample 5 plants in 6 locations at least once a week for the presence of larvae. Consider a treatment if 1 larva is found on 30 plants. For head lettuce, the critical stage for controlling **CEW** is in the 7-18 leaf stage. Control must be achieved prior to when the center leaves form a head.

Lima and Snap Beans

CEW and **ECB** adult populations are moderate to very high in the southern counties and larval **CEW** are now appearing in processing limas. Consult the *1999 Commercial Vegetable Production Recommendations* for the appropriate control strategies for both of these pests in processing and fresh-market snap beans. Check lima bean fields twice a week for the presence of **CEW** larvae, and consider treatment if 1-2 larvae are found in 6 feet of row.

Peppers

The **ECB** adult population is moderate to high in the southern counties; the **CEW** adult population is moderate to very high statewide. Large and small **CEW** larvae have been found infesting both bell and Cuban peppers. A 5 to 7 day spray schedule is recommended to prevent fruit infestation from **CEW**. In areas where both **CEW** and **ECB** are high make sure to select materials that will control both pests.

The **beet armyworm (BAW)** pheromone trap catches were high in southern Cumberland County this week, and low to moderate in other southern counties. Some **BAW** larvae have been found feeding in the canopy of peppers, but overall the population is much lower than last year at this time.

Tomatoes

Both fresh-market and processing tomatoes are at risk from **CEW** infestation due to the continued high adult populations. Fields will need preventative control measures in areas where adult counts are high, greater than 20 per night in local blacklight traps. Monitor fields for evidence of fruit damage and larvae in order to evaluate control effectiveness. A low level infestation of **BAW** was found in Warren county late last week. This pest is usually confined to the southern counties, but southerly storm systems apparently moved it northward. **BAW**, like **CEW**, will injure fruit, but usually will skeletonize leaves first. Look for foliar feeding near fruit clusters and shallow feeding marks on fruit. **BAW** larvae are usually dusty green in color with one prominent dark spot on each side, two segments behind the head. Some insecticides recommended for **CEW** control may not be effective on **BAW**. Consult *1999 Commercial Vegetable Production Recommendations* for effective insecticides.

Pumpkins

The trajectory of recent storms (up from the southern and mid-Atlantic states) is cause for concern, as it increases the possibility of **downy mildew** infections on cucurbits. Adherence to the recommended fungicide schedule for control of **powdery mildew** should also provide control of **downy mildew**. For those with internet access, information on East Coast outbreaks of this disease as well as weekly forecasts for **downy mildew**, may be found at www.ces.ncsu.edu/depts/pp/cucurbit/.

Cole Crops

Cabbage looper (CL) infestations have increased recently around the state. These pests are capable of considerable damage to all stages of heading and leafy cole crops. Scout fields weekly, checking 5 plants each in 10 locations, and consider an insecticide treatment if 20% or more heading type cole crops are infested with any larvae prior to head formation, or if 5% or more plants are infested with heads present. For leafy types, consider treating if at least 12% of plants are infested with any larvae.

Spinach

CL, **BAW**, and **webworms** were found in a young spinach planting this week in Burlington County. The predominant pest was **webworm**. As soon as plants emerge, begin monitoring fields at least weekly for the presence of larvae, particularly in the crown of the plant. Although all three of these pests were found on the undersides of the leaves, the **webworms** were found primarily close to the soil surface down in the center of the plant. The larvae spin silken threads that cause webbing on the plants. Early detection and control is necessary before significant webbing occurs. Check 10 plants in 10 locations and consider a treatment if 5% of the plants are infested with small larvae.

SEE IPM ON PAGE 4

Sweet Corn

ECB adult trap catches are again increasing in all areas, although to a lesser extent in the northern counties. Scout fields prior to silk, and consider treating if 12% or more plants are infested with **ECB** alone or in combination with **fall armyworm (FAW)**. This pest will infest ears directly from egg masses deposited on or near ears. Silk spray schedules should control **ECB** at this growth stage.

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

Woodstown	42	Indian Mills	18	Cohansey	13
Laurel Hills	30	Mullica Hill	15	Medford	11
Centerton	19	Shirley	14	Springdale	7
Elm	18	Elmer	13	Tabernacle	7

CEW continues to be moderate to high throughout the entire state. With the passing of the remnants of tropical storm Dennis, we can expect **CEW** adult populations to at least remain steady, if not increase. Silking

spray schedules should be strictly adhered to at this time. Silking spray schedules should begin at full-tassel to first silk, and continue as long as fresh silks are present.

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

Elm	59	Shirley	29	Cedarville	19
Centerton	49	Porchtown	28	Woodstown	19
Cohansey	44	Indian Mills	26	Millstone	17
Folsom	31	Mullica Hill	21	Hopewell	15

*General Sweet Corn Silking Spray Schedule

South	2-3 days
Central	2-3 days
North	3 days

*These are general spray recommendations for large areas of the state. Growers can increase or decrease the intervals based on their own local situations. □

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged above normal. Extremes were 92 degrees at Flemington on the 4th and 46 degrees at Charlotteburg on the 3rd. Weekly rainfall averaged 0.50 inches north, 0.18 inches central, and 0.37 inches south. The heaviest 24 hour total was 1.27 inches at Charlotteburg on the 5th to the 6th. Estimated soil moisture, in percent of field capacity, this past week averaged 78 percent north, 67 percent central and 59 percent south. Four inch soil temperatures averaged 68 degrees north, 70 degrees central and 71 degrees south.

Weather Summary for the Week Ending 8 am Monday 9/ 6/99										
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.13	15.66	-9.55	90	52	70.	4	2664	376	68
CANOE BROOK	.46	18.46	-7.97	89	53	70.	3	2977	668	82
CHARLOTTEBURG	1.27	18.89	-7.81	85	46	66.	3	2260	425	100
FLEMINGTON	.31	14.27	-11.13	92	50	70.	3	2765	396	81
LONGVALLEY	.32	14.26	-13.22	84	52	68.	4	2406	366	67
LONG BRANCH	.05	17.02	-8.08	78	61	70.	2	2717	272	52
NEW BRUNSWICK	.28	18.32	-6.73	85	54	70.	0	2914	275	80
PEMBERTON	.09	20.42	-5.01	85	55	71.	2	3005	433	51
TOMS RIVER	.02	11.56	-14.08	81	61	71.	1	2721	285	51
TRENTON	.47	20.78	-2.96	85	54	69.	0	2690	-45	71
CAPE MAY COURT HOUSE	.78	12.89	-9.29	80	60	72.	1	2917	484	63
DOWNSTOWN	.21	20.31	-3.10	83	59	71.	1	2924	182	61
HAMMONTON	.15	20.10	-4.34	82	57	70.	0	2908	185	57
POMONA	.00	17.15	-5.32	79	60	71.	3	2885	346	42
SEABROOK	1.08	21.09	-1.32	83	59	72.	2	3084	327	93
ATLANTIC CITY MARINA	.00	16.06	-5.54	77	67	72.	2	2938	453	46
WOODSTOWN	1.26	24.19	0.13	83	58	72	NA	3097	NA	
WES KLINE — GDD BASE 40 PINEY HOLLOW Last Week 243 (Ending 8/30/99) This Week 220 (Ending 9/06/99)										

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

VEGETABLE CROPS EDITION CONTRIBUTORS

Rutgers Cooperative Extension Specialists

Joseph A. Fiola, Ph.D., Small Fruit & Viticulture
Stephen A. Garrison, Ph.D. Vegetable Crops
Gerald M. Ghidui, Ph.D. Vegetable Entomology
George Hamilton, Ph.D., Pest Management
Joseph R. Heckman, Ph.D., Soil Fertility
Stephen A. Johnston, Ph.D. Plant Pathology
Bradley A. Majek, Ph.D. Weed Science

Rutgers Cooperative Extension County Agricultural Agents

Atlantic, Richard W. VanVranken (609-625-0056)
Burlington, Raymond J. Samulis (609-265-5050)
Cumberland, Wesley Kline, Ph.D. (609-451-2800)
Gloucester, Michelle Infante (609-863-0110)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Mercer, Daniel Kluchinski (609-989-6830)
Middlesex, William T. Hlubik (732-745-3443)
Monmouth, Bill Sciarappa, Ph.D. (732-431-7260)
Morris, Peter J. Nitzsche (973-285-8300)
Salem, Peter R. Probasco (609-769-0090)
Warren, William H. Tietjen (908-475-6505)
Vegetable IPM Program (732-932-9802)

Joseph Ingerson-Mahar, Vegetable IPM Coordinator
Kristian E. Holmstrom, IPM Program Associate
Sarah Walker, IPM Program Associate

Newsletter Production

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

Rutgers Cooperative Extension provides information and educational services to all people without regard to sex, race, color, national origin, disability or handicap or age. Rutgers Cooperative Extension is an Equal Opportunity Employer.

Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The user is responsible for the proper use of pesticides, residues on crops, storage and disposal, as well as damages caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact Rutgers Cooperative Extension of your County.

Use of Trade Names: Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances the compound may be sold under different trade names, which may vary as to label clearances.