

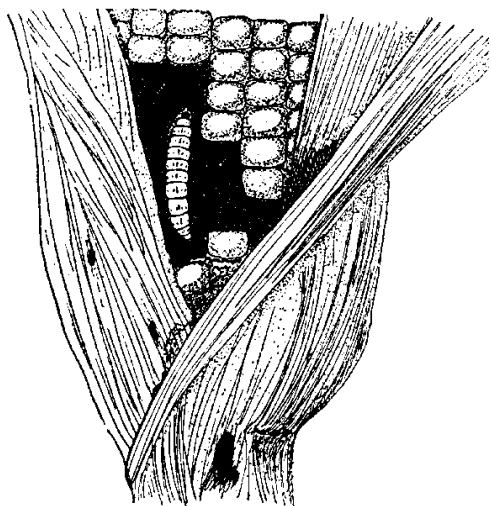
PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JULY 14, 1999

Pest Notes

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



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✓**General:** **European corn borer moths** are still being caught in the black light traps, and numbers of moths vary from location to location. A few were caught in the trap at the Rutgers Research Center last week, but none this week, suggesting that it may have been the univoltine strain (1 generation/year) population. IPM reports higher **moth** catches this week on potato farms, which may represent **moths** coming from the first generation **borers** that were in potato plants (the week-long hot, humid weather may have influenced the developmental rate of these **moths**). We will need further trapping information and results over the next few weeks to accurately determine what the **moth** catches represent.

✓**Asparagus:** **Thrips** are reported on asparagus plants, causing considerable damage. Lannate is labeled for **thrips**, but is an expensive treatment. Dimethoate is labeled on asparagus for **aphids** and other pests, but will likely control **thrips** (dimethoate has **thrips** on the label for use in cotton and other crops), and is less expensive. Because asparagus is on the dimethoate label, it can be used for **thrips** in New Jersey.

✓**Cabbage:** The imported **cabbageworm** population is high at this time. These are the white butterflies seen flying around cabbage or related crops during the daytime. Control is easily obtained if treatment is not delayed too long. The biological insecticides (Bt's) are effective, especially if applied when worms are just hatching or still small. All of the various brands of Bt are effective against this pest.

✓**Corn:** **Fall armyworm moths** are beginning to appear in the black light traps. Corn in the whorl stage and ear stage is susceptible to **fall armyworm** damage. Pyrethroids such as Asana, permethrin, Baythroid, and Warrior have generally provided excellent control of early instar fall **armyworms**. If control is warranted, apply treatment when worms are still small (1st – 2nd instars if possible). Larger **worms** are much more difficult to control than the smaller **armyworms**. Monitor corn whorls by observing damage, then pulling whorls out and unrolling to find the worm.

✓**Tomato:** Danitol 2.4EC is labeled on tomatoes for **two-spotted spider mites** and **stinkbug**. Use 10.67 fl oz/acre of Danitol when **mite** populations are just beginning to build (less than 5 motiles/leaf), and repeat application in seven days if needed. Do not harvest within 3 days of last Danitol application. □

IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Peppers

European corn borer (ECB) adults are increasing in both blacklight and pheromone traps located in peppers in the southern counties. Our experience is that steady low blacklight or pheromone trap levels of 1-2 per night are enough to result in pepper fruit infestation. In areas where these levels exist (see **ECB** distribution map), maintain a 7-10 day spray schedule for **ECB** control.

Beet armyworm (BAW) larvae were found feeding in the foliage of mature pepper plants in Salem County at the end of last week. This is an early and likely sporadic occurrence of **BAW**, since the pheromone trap counts are low in the southern counties. The larvae feed extensively in the foliage of individual plants, so if **BAW** are present in your pepper fields you should easily be able to find evidence. When scouting, look for signs of leaf feeding (small holes or window pane-type feeding) in the upper canopy. The worms will be found on the undersides of the leaves or curled up in leaves in the growing tips. The larvae are green to greenish-gray, with the identifying characteristic of a dark spot on either side behind the head. Other pests that may be present that feed in the canopy (and may be confused with early **BAW** damage) are **cabbage loopers (CL)** and **yellow-striped armyworms**.

Sweet Corn

Fall armyworm (FAW) infestations in whorl stage corn have been very low throughout southern New Jersey with numbers approaching threshold levels in the northern Burlington – Ocean County area. Infestations of this pest are likely to increase in the near future, and seedling and whorl stage sweet corn plantings should be monitored weekly for signs of damage.

The second flight of **ECB** is in progress now in southern counties. Particularly high activity is now being recorded in parts of Salem and Cumberland Counties. As this flight develops, infestations in sweet corn will increase. Although some northern plantings in the pre-tassel stage remain infested with first generation **ECB** larvae, most whorl stage plantings around the state contain few **ECB** at this time. Consider treating when 12% or more plants are infested with **FAW**, **ECB**, or a combination of the two pests.

While scouting for **FAW** and **ECB** in whorl stage corn, make sure to check the lower leaves for **corn leaf rust** pustules. Fungicide applications may be necessary on susceptible varieties in the whorl stage (3-9 leaf) or younger, especially if **rust** is found in older plantings on the farm. The conditions that may result in an epidemic include a large quantity of spores with favorable environmental conditions (cool and wet) on susceptible

varieties, particularly when successive plantings occur in the same field. The highest nightly **ECB** blacklight trap catches are:

Cohansey	60	Sergeantsville	5	Pedricktown	3
Shirley	17	Sewell	4	Allentown	2
Centerton	7	Fishing Creek	3	Beckett	2
Crosswicks	5	Mannington	3	Elmer	2

Corn earworm (CEW) blacklight trap catches are slowly increasing throughout the state. Consistently higher catches are occurring in the southernmost counties, but sporadic catches continue to be recorded northward through Morris, Warren and Sussex Counties. The shaded area on the CEW distribution map representing a population of .25 to .8 moths per night roughly corresponds to a 4 – 5 day silk spray schedule. The highest nightly **CEW** blacklight trap catches are:

Centerton	6	East Vineland	2	Green Creek	2
Folsom	3	Elmer	2	Hammonton	2
Shirley	3	Farmingdale	2	Mullica Hill	2
Crosswicks	2	Fishing Creek	2	Sergeantsville	2

General Sweet Corn Spray Schedule

Silking corn:	North	6 days
	Central	3 - 5 days
	South	3 - 4 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.

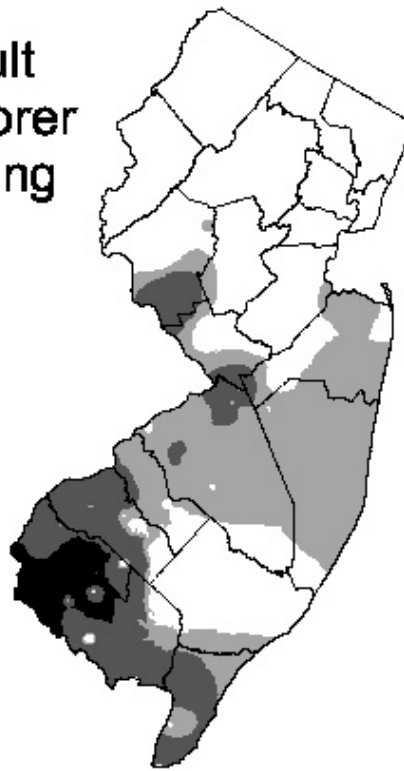
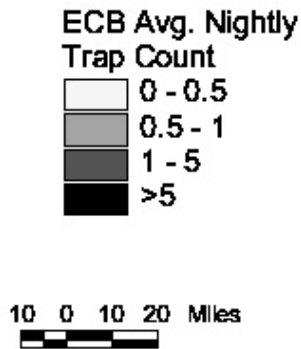
Tomatoes

Low levels of **cabbage looper (CL)** larvae were found feeding in the canopy in Cumberland County. The larvae are light green and move with a characteristic looping motion, like an inchworm. The larvae feed on the leaves but do not usually cause economic damage. **BAW** have been found in peppers in Salem County, at low levels (see pepper section). This is an early and likely sporadic occurrence of **BAW**, since the pheromone trap counts are low in the southern counties. When scouting fields, check the foliage for leaf feeding and look on the undersides of the leaves to determine what pest is present.

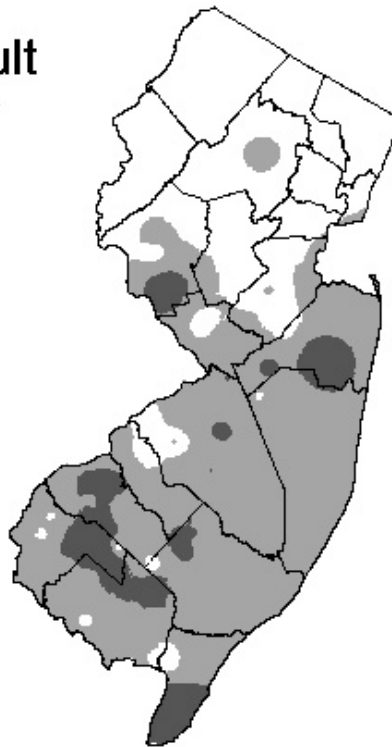
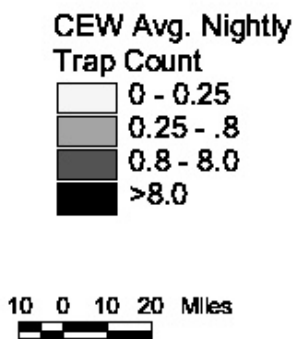
Stinkbug activity remains high throughout the state. Plantings with fruit present should be treated to minimize injury to ripening fruit. This is of particular importance where tomato plantings are in close proximity to grain fields. It is difficult to spot **stinkbugs** in tomato plantings, but they are easily caught by using a sweep net in vegetation surrounding the field. This monitoring technique can give some indication of the relative activity of these insects in and around the tomatoes.

SEE MAPS ON PAGE 5

Distribution of Adult European Corn Borer for the Week Ending July 14, 1999



Distribution of Adult Corn Earworm for the Week Ending July 14, 1999



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

Vegetable Crops Diseases

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

✓**Carrot:** Now is the time to initiate foliar applications of Bravo for control of **leaf blights**. Repeat applications every 7-10 days until frost.

✓**Cole crops:** Fields used for fall plantings should be well drained, the crop should be produced on raised beds, and the pH should be as close to 7.0 as possible for prevention of **clubroot**.

✓**Corn (sweet): Smut** is present in some varieties at this time. The disease does not spread from field to field. The fungus survives in the soil, and spores are produced that infect young, developing tissues of corn plants. During hot (79°-94° F), dry weather, and when corn plants are injured from hail, blowing sand, cultivation, etc., plants are infected. Use resistant varieties whenever possible, and avoid stress on the crop to reduce disease incidence.

✓**Cucumber: Belly rot** is present on pickles at this time. Infected fruit have brown, circular lesions present where the fruit touch the ground. The recent hot weather contributed to the incidence of this disease. For future plantings, apply Bravo or Quadris just before the vines fall over to the ground, and do not make another cultivation after the fungicide application. This will allow for a fungicide barrier to exist between the fungus in the soil and the base of the fruit.

✓**Eggplant: Verticillium wilt** incidence continues to increase during periods of hot, dry weather. No control measure is available at this time. For future plantings, use pre-plant soil fumigation for control. Continue applications of mefenoxam (Ridomil Gold or Ultra Flourish) every 21 days for a total of 3 applications for control of **Phytophthora blight**.

✓**Muskmelon: Pythium root rot** is causing some plants to completely wilt and die. Avoid over watering during hot periods, and do not water late in the afternoon or evening when night temperatures will be 70°F or above to reduce

incidence of this disease. **Root-knot nematode** damage is present in some fields. Infected plants are stunted, and galls are present on the root system. Apply Vydate L as a foliar spray or via injection through drip irrigation for control.

✓**Pepper: Pythium root rot** continues to be the major disease present at this time. Infected plants suddenly wilt, and there are numerous brown lesions on the roots with many roots having the outer tissue removed leaving only the central core left. Avoid irrigation late in the afternoon or evening when night temperatures will be above 70°F; avoid excessive irrigation, use more frequent irrigation with lesser amount of water used; and apply mefenoxam (Ridomil Gold or Ultra Flourish) every 21 days for a total of 3 applications for control. **Bacterial leaf spot** is present in some fields. Infected leaves have numerous brown lesions present, and infected leaves fall from the plant. Avoid working in the field while the foliar is wet, apply a copper fungicide + maneb as a foliar spray and repeat every 7 days for control.

✓**Potato: Bacterial stem rot** is prevalent in several fields at this time. Infected stems have numerous, black lesions that girdle the stem present. The disease resulted from splashing water from rainfall or irrigation during the recent hot period. **Early dying disease** is prevalent in 'Superiors' at this time. Soil fumigation in the fall has reduced the incidence of this disease this year.

✓**Pumpkins & winter squash:** Once the vines begin to run, apply Bravo as a foliar spray. In 7-10 days apply Quadris as a foliar spray. Repeat this program for the rest of the season for **foliar and fruit disease** control. In some fields, older leaves of plants have a marginal necrosis present. This is the result of drought stress, and is not a disease.

✓**Squash (summer):** All fields seeded at this time should be seeded through reflective mulch for prevention of aphid transmission of **plant viruses**. Aphids become disoriented by reflective mulch and do not land on squash plants; therefore, they do not probe plants and viruses are not transmitted. For newly seeded fields, select well-drained fields and use raised beds to reduce the incidence of **Phytophthora blight**.

✓**Tomato: Bacterial spot** is present in some fields at this time. Avoid working in fields while the foliage is wet, and apply a copper fungicide + mancozeb as a foliar spray every 7 days for control. For all other fields maintain applications of Bravo and Quadris on alternate 7-10 days for control of **foliar and fruit diseases**.

✓**Watermelon:** Maintain applications of Bravo + Benlate or Topsin M every 7-10 days for control of **anthracnose & gummy stem blight**. □

Vegetable Twilight Meeting

August 16, 1999

5:30 p.m. until dark.

Rutgers Agricultural Research and Extension Center in Upper Deerfield.

- Trials on cultural practice, varieties, IPM, and insect and disease control in peppers.

- Varieties and disease control in processing tomatoes, asparagus variety trials, no-till squash and other vegetable trials.

Look for more details in upcoming issues of the Plant and Pest Advisory.

For more information, please call:

Stephen Garrison, (856) 455-3100
Specialist in Vegetable Crops
Rutgers Cooperative Extension

Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 104 degrees at Pemberton on the 6th and 44 degrees at Charlotteburg on the 12th. Weekly rainfall averaged 0.05 inches north, 0.00 inches Central, and 0.00 inches south. The heaviest 24 hour total was 0.08 inches at Charlotteburg on the 9th to the 10th. Estimated soil moisture this past week, in percent of field capacity, averaged 56 percent north, 43 percent central and 32 percent south. Four inch soil temperatures averaged 77 degrees north, 80 degrees central and 81 degrees south.

Weather Summary for the Week Ending 8 am Monday 7/12/99

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.07	10.66	-6.26	101	51	76.	4	1293	190	41
CANOE BROOK	.02	11.08	-6.95	103	53	79.	6	1489	388	54
CHARLOTTEBURG	.08	12.84	-5.88	95	44	72.	2	1063	182	52
FLEMINGTON	.05	8.96	-8.38	102	51	77.	4	1357	220	54
LONG VALLEY	.04	10.46	-8.09	95	53	75.	5	1131	179	53
FREEHOLD	.00	11.48	-5.43	102	56	80.	6	1526	289	56
LONG BRANCH	.00	12.13	-4.75	101	56	78.	5	1343	181	35
NEW BRUNSWICK	.00	11.95	-4.72	103	55	79.	5	1431	119	58
PEMBERTON	.00	12.71	-3.92	104	51	79.	5	1510	236	18
TOMS RIVER	.00	6.35	-10.70	102	58	80.	6	1325	153	19
TRENTON	.00	12.84	-2.90	99	55	77.	2	1294	-73	27
CAPE MAY COURT HOUSE	.00	8.89	-6.05	99	63	82.	7	1451	199	11
DOWNTOWN	.00	14.03	-1.44	97	59	80.	5	1471	89	36
HAMMONTON	.00	12.68	-3.66	100	58	81.	6	1467	112	29
POMONA	.00	11.99	-2.77	99	54	80.	6	1425	173	16
SEABROOK	.00	15.26	.33	98	59	80.	5	1589	199	42
ATLANTIC CITY MARINA	.00	9.53	-4.60	101	64	82.	9	1473	299	13
WOODSTOWN	.00	14.63	-2.03	100	55	80	NA	1585	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week 281 (Ending 7/5/99)										
This Week 281 (Ending 7/12/99)										
(Not a mistake; numbers same for both weeks)										

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