

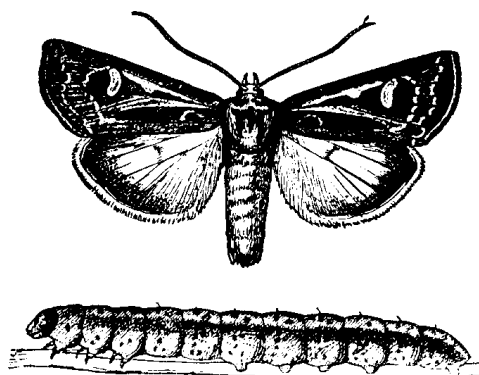
PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JULY 5, 2000

Pest Notes

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



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✓ **General:** Various **cutworms** are being caught in high numbers in blacklight traps throughout New Jersey. The **Large yellow underwing** (*Noctua protura*) is the most common at this time, based on the numbers of **moths** in the traps. It is a **cutworm** that is relatively new to this area, only appearing since the 1970's along the eastern coast. A native to Europe, it is a general feeder, and feeds primarily on grasses. However, it is reported to feed on various vegetables, including tomato, potato, carrot, cabbage, lettuce, and others. It feeds at night, and cuts the plants off at ground level, similar to other **cutworms**, but it also attacks the aerial parts of the plants, damaging leaves, flowers and buds. Growers should frequently walk their fields and look for signs of cut plants, or large portions of leaves missing without finding the insects. Then look 2-3 inches deep into the soil around the plant base and try to find the **cutworm** larvae. If **cutworms** are found, effective control measures include carbaryl 5% bait, and foliar applications of pyrethroids (such as Ammo, Fury, Asana, Ambush, Pounce, Warrior, Capture, and others), Lorsban, Monitor, and Lannate directed at the base of the plant. Consult the label of each product to determine the crops that the product can be used on, as not all of the above materials are labeled for on all crops.

Also, the **adult beetles** of the insect pest group called "**grubs**" are very active at this time, and adults of nearly all of the **grub** species are being caught in blacklight and pheromone traps throughout the state. **Japanese beetles, June and May beetles, Asiatic garden beetles, Oriental beetles, rose chafer**, and other species of **grubs** that attack the tubers and roots of various vegetable crops are actively mating and depositing eggs at the base of plants. **Grub** damage is usually associated with grassy or weedy fields, or fields that were previously sod, although this does not always hold true. In sweet corn, Counter 15G, Fortress 2.5G, Force 3G and Lorsban 15G are labeled for **grub** control. In other crops, no insecticides are currently labeled specifically for **grubs**, although soil insecticides labeled for **wireworm** control are effective in reducing **grub** populations. Direct the application at the base of the plants and in a band wide enough to cover the root zone width. Consult the *2000 New Jersey Commercial Vegetable Production Recommendations* for materials labeled on various vegetables for soil insect

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pests (**cutworms** and **wireworms**).

✓ **Cabbage:** The primary pest on cabbage and related crops is still the **imported cabbageworm**, although some **diamondback moth** larvae and **cross-striped cabbageworms** are present in cabbage fields. The **imported cabbageworms** are easily managed using a properly timed application of any of the biological insecticides, such as DiPel, XenTari, and others. Target the smaller larvae, and make application in late evening, avoiding mid-day applications. Also, plan to apply these materials when there are no rainfalls predicted for the next several days. The biological materials must be ingested to be effective, so thorough coverage of the plant foliage is important.

✓ **Tomatoes:** The NJ Special Local Needs label (SLN 24-C) for the use of Monitor 4E on tomatoes for the control of **aphids, armyworms, loopers, fruitworms, hornworms, stink bugs, cutworms** and **thrips** is still in effect for all of New Jersey. This material has been very effective against both **stink bugs** and **thrips**. It is labeled on fresh market tomatoes only at the rate of 1.5 - 2 pints 4E per acre. A total of 5 applications can be made, but do not apply within 7 days of any harvest. Because this is a special state label, a copy of this label must be in the user's possession at time of application. □

Vegetable Crops Diseases

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

✓ **Bean (snap):** **Rhizoctonia pod tip rot** is present at this time. Pods that make contact with the soil will rot in infested fields. The fungicide Nova is registered for control of this disease. Apply 4-5 oz/A when pods begin to develop. Continue applications every 7-10 days. Applications can be made up to and including the day of harvest.

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

✓ **Cole crops:** Maintain applications of maneb every 7-10 days for control of **Alternaria leaf spot & downy mildew**. **Black rot** is present in some fields at this time. Infected plants have leaves with areas of marginal chlorosis and necrosis in a V-shape pattern. Avoid working in fields while the foliage is wet to reduce spread. In future years be sure seed is hot water-treated to reduce the population of seed-borne bacteria. **Tip burn** is present on cabbage nearing harvest stage of growth. Margins of leaves throughout the plant turn black. This is not a disease, and is due to environmental stress. Maintain soil moisture at a uniform level during the season.

✓ **Carrot:** Maintain applications of Bravo every 7-10 days for control of **leaf blights**.

✓ **Corn (sweet):** Observe fields for the presence of **rust**. Older leaves need to be examined for small, reddish pustules. Once observed on corn in the whorl stage or earlier, apply a fungicide for control. Older corn will not benefit from fungicide applications.

✓ **Cucumber:** Maintain applications of Bravo + a copper fungicide alternated with Benlate, Topsin M or Quadris for control of **foliar and fruit diseases**.

✓ **Eggplant:** Maintain applications of a copper fungicide + a spreader sticker for control of **Phytophthora fruit rot**.

✓ **Muskmelon:** Maintain applications of Bravo or mancozeb alternated with Quadris every 7 days for control of **Alternaria leaf blight**.

✓ **Pepper:** **Bacterial leaf spot** is present in some fields at this time. Infected leaves contain numerous irregular shaped, tan lesions with dark brown borders. Infected leaves eventually drop from the plant. Avoid working in fields while the foliage is wet, and apply a copper fungicide + maneb every 7 days for control. **Phytophthora blight** is present in fields at this time. Infected plants completely wilt and die. Remove infected plants from the field. Maintain applications of mefenoxam (Ridomil Gold or Ultra Flourish) every 21 days for a total of 3 applications. Beginning 2 weeks after the third application apply a copper fungicide + maneb + a spreader sticker every 7-10 until the end of the season for control.

✓ **Potato (white):** **Early blight** is present in some fields at this time. Infected leaves contain numerous small, circular, brown, target spot lesions. The disease starts on older leaves and progresses up the plant. Apply Quadris (6.2 fl oz/A) as a foliar spray when the disease is first observed and repeat in 14 days. Apply mancozeb or Bravo in between Quadris applications.

✓ **Pumpkin & winter squash:** Maintain applications of Bravo or mancozeb and alternate with Quadris every 7-10 days for control of **foliar diseases**.

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Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged near normal. Extremes were 92 at several locations on the 27th and 48 degrees at Charlotteburg on the 1st. Weekly rainfall averaged 0.49 inches north, 0.19 inches central, and 1.69 inches south. The heaviest 24 hour total was 2.00 inches at Pomona on the 28th to the 29th. Estimated soil moisture, in percent of field capacity, this past week averaged 75 percent north, 50 percent central and 75 percent south. Four inch soil temperatures averaged 71 degrees north, 74 degrees central and 75 degrees south.

Weather Summary for the Week Ending 8 am Monday 7/03/00

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.66	20.20	4.53	86	54	71.	0	1019	98	73
CANOE BROOK	.26	13.74	-3.04	91	55	73.	2	1134	232	64
CHARLOTTEBURG	.44	17.67	.68	89	48	68.	0	805	94	67
FLEMINGTON	.13	15.87	-.20	91	54	72.	0	1163	229	64
LONG VALLEY	.94	17.42	.23	84	55	69.	0	892	116	77
FREEHOLD	.11	11.38	-4.36	92	60	75.	3	1242	213	52
LONG BRANCH	.22	14.54	-1.22	88	55	71.	-1	1050	92	34
NEW BRUNSWICK	.07	14.85	-.54	91	56	74.	0	1199	103	62
PEMBERTON	.30	13.79	-1.51	92	55	74.	1	1637	573	33
TOMS RIVER	.42	14.68	-1.02	91	56	73.	0	1182	225	42
TRENTON	.02	13.10	-1.30	89	57	73.	-1	1257	112	41
CAPE MAY COURT HOUSE	.98	14.97	1.07	90	59	73.	0	1222	184	45
DOWNSTOWN	2.05	15.34	1.12	92	58	74.	0	1309	147	75
GLASSBORO	1.05	15.75	.38	91	58	75.	1	1404	263	71
HAMMONTON	2.03	14.54	-.47	90	57	74.	0	1257	123	77
POMONA	2.16	14.00	.41	92	57	73.	1	1204	163	78
SEABROOK	2.44	17.22	3.52	92	60	74.	0	1390	221	80
ATLANTIC CITY MARINA	1.09	14.21	1.21	89	64	73.	1	1213	242	52
SOUTH HARRISON	1.23	19.62	4.22	89	60	74.	NA	1401	NA	NA

As of June 26th, South Harrison replaced Woodstown, but the values will be compared to the normals for Woodstown because no normals exist for South Harrison.

WES KLINE — GDD BASE 40 PINEY HOLLOW

Last Week 236 (Ending 6/26/00)

This Week 240 (Ending 7/03/00)

DISEASES FROM PAGE 2

✓ **Squash, summer: Phytophthora crown rot & fruit rot** is prevalent at this time. Apply Ridomil Gold Copper, Ridomil Gold Bravo or Flouronil every 14 days for control.

✓ **Tomato: Early blight** is prevalent at this time. Infected leaves contain numerous, circular, brown, target spot lesions with a yellow halo present. Maintain fungicide applications every 7 days for control. It is important to provide excellent coverage to get maximum benefit from fungicide application. Rearrange nozzles or sprayer position to improve coverage. **Bacterial canker, bacterial spot & speck** are

present in fields at this time also. Avoid working in fields when the foliage is wet to reduce spread. Maintain applications of a copper fungicide + mancozeb every 7 days for control. A good broad-spectrum fungicide program for both fungal and bacterial disease control would be to apply a copper fungicide, mancozeb and Bravo alternated with a copper fungicide, mancozeb and Quadris every 7 days. □

Vegetable IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Snap Beans

European corn borer (ECB) adult counts are beginning to increase in Salem and Cumberland counties (see **ECB** map). As adult counts increase to 2 to 5 moths per night, snap beans will need a treatment for **ECB** at the bloom and pin stages. Following the pin stage application, snap beans should be treated on a 7-day schedule until harvest if blacklight trap counts average 5 or more **ECB** moths per night in your area.

Peppers

ECB adult counts are beginning to increase in blacklight traps in parts of Salem and Cumberland counties (see **ECB** map). It is difficult to monitor this pest in the field, especially with the dense foliage of most peppers now, so we rely on the traps to indicate when the adult population is a potential threat to pepper fruit. As the population increases to 1 to 2 per night in local blacklight traps, and fruit are present in the field, fruit should be protected on a 7-10 schedule.

Tomato hornworm larvae and eggs are being found feeding in some fields now. The adults deposit round, light green eggs singly on the undersides of the leaves. The larvae are light green and have a distinctive curved spine ('horn') on one end. The larvae will eat entire leaves and stems and will leave large brown/green droppings on the leaves and around the base of the plant. The larvae can be hard to find on the plant, but the feeding signs are usually easy to see.

Sweet Corn

Corn earworm (CEW) adult numbers are now low throughout the state as we are in between adult generations of this pest (see **CEW** map). With a few exceptions, traps are capturing only scattered individuals at this time. This low population requires protective silk sprays, but in most cases the schedule is more relaxed than what was necessary two weeks ago.

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

Hammonton	2	New Egypt	2	Elm	1
Pedricktown	2	Belvidere	1	Manville	1
Pemberton	2	Centerton	1	Morristown	1
Phillipsburg	2	Cohansey	1	Springdale	1

Throughout most of the state, **ECB** adult activity is low at this time. Exceptions are in areas of Cumberland and Salem counties (see **ECB** map) where we are beginning to see signs of the next adult flight. Within the next 1-2 weeks, activity in the southern portion of the state should intensify. Fields now in pretassel should be monitored weekly to

determine if residual **ECB** infestations are present. Check 5 plants each in 10 random locations in the field, and consider treating if greater than 12% of plants are infested with **ECB** and/or **CEW** larvae. **ECB** larvae are easily identified by the presence of their brown droppings in the tassel. The full tassel stage is a critical time for treating this pest, as after this, many larvae will have entered the plants down near the ears.

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

Cohansey	7	Centerton	3	Pedricktown	2
Laurel Hills	7	Califon	2	Upper Pittsgrove	2
Woodstown	7	Chapel Hgts	2	Downer	1
Seeley Lake	4	Mullica Hill	2	Seabrook	1

Corn leaf aphid has been found in some southern plantings. Repeated use of older synthetic pyrethroid materials can result in large populations of this pest. When **corn leaf aphids** heavily infest a planting, they can get on and between husk layers of the ears, resulting in a less marketable product. When applying silk sprays, consult the *2000 Commercial Vegetable Production Recommendations* for products that will control **corn leaf aphid**.

General Sweet Corn Spray Schedule

Silking corn: North 6 day

Central 4-5 days

South 4-5 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.

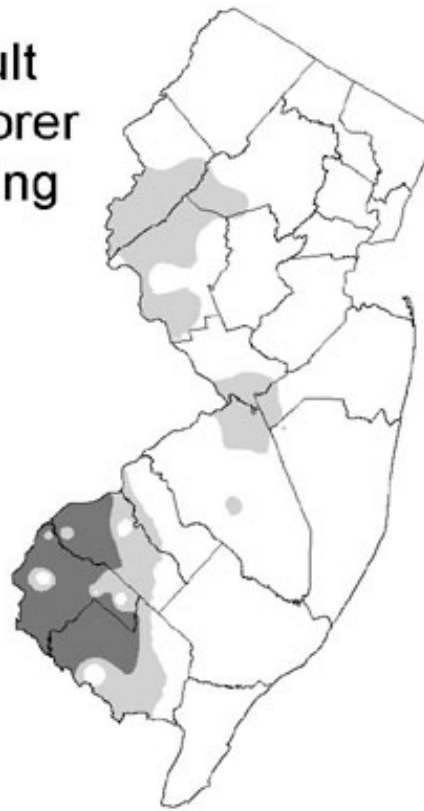
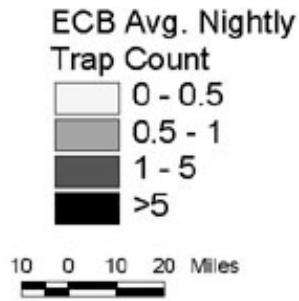
Tomatoes

A low number of the brown *Euschistus* species of **stinkbugs** are being found in some southern New Jersey blacklight traps, but as yet, we have not experienced the large population we have seen the previous two years. Further information on these pests will appear in this publication as the situation changes.

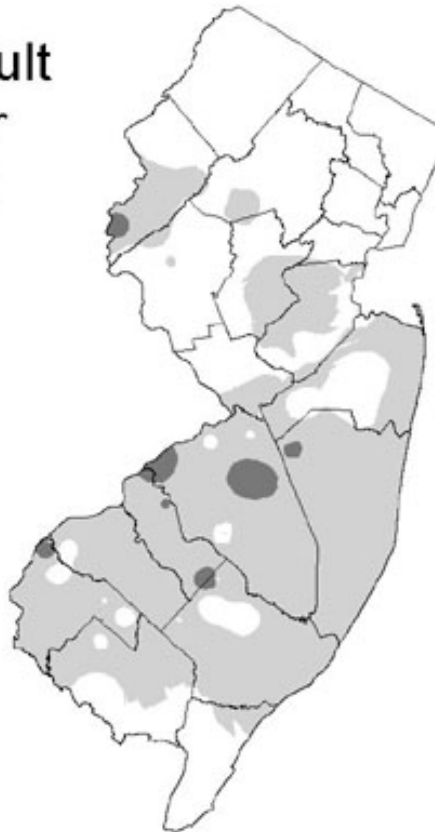
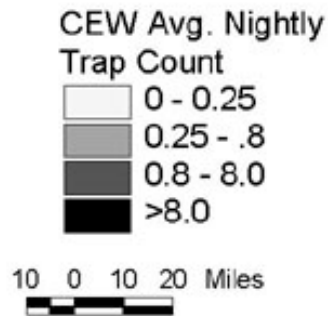
Tomato fruitworm (corn earworm – CEW) has been found in some central and southern New Jersey tomato fields. These larvae are the result of heavier flights in mid-June. Preventive control for this pest is usually called for as adult **CEW** numbers approach 20 per night in light traps. It is possible that a relative absence of silking corn during this period of higher adult activity made **CEW** females lay eggs on young tomato fruit in higher than usual numbers. New damage to tomatoes should be low until the next adult **CEW** flight occurs. Consult the *2000 Commercial Vegetable Production Recommendations* for products that will control this pest in tomatoes as the adult population increases later in the month of July.

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

Distribution of Adult European Corn Borer for the Week Ending July 5, 2000



Distribution of Adult Corn Earworm for the Week Ending July 5, 2000



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