

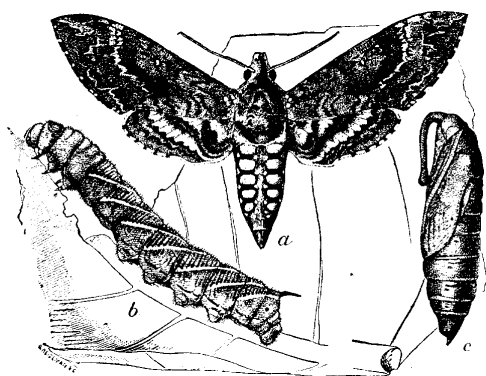
PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JULY 12, 2000

IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM



Sweet Corn

European corn borer (ECB) adult populations continue to be low throughout most of the state with locally higher numbers caught in parts of Salem, Cumberland and Burlington counties (see **ECB** map). For now, sweet corn plantings that are not infested with **ECB** should remain so for the next 1-2 weeks. After the second flight commences, feeding will again appear on all stages of sweet corn.

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

Cohansey	3	Shirley	2	Eldora	1
Folsom	3	Allamuchy	1	Laurel Hills	1
Seeley Lake	3	Chapel Heights	1	Princeton	1
Ellisdale	2	Crosswicks	1	Sergeantsville	1

Corn earworm (CEW) adult numbers are low in most of the state. Locally moderate populations are occurring in scattered areas of southern counties (see **CEW** map). Silking sweet corn is generally at lower risk of infestation from this pest at this time. Moderate silk spray schedules are necessary, though, to keep **CEW** from infesting ears.

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

Folsom	8	Indian Mills	2	Hackettstown	1
Pedricktown	3	Tansboro	2	Laurel Hills	1
Pemberton	3	Chester	1	New Egypt	1
Hammonton	2	Fishing Creek	1	Phillipsburg	1

Low level **fall armyworm (FAW)** infestations have been found this week in lower Burlington County, southern Morris County and eastern Monmouth County as reported by Garden State Pest Management. In all cases, infestations were low in whorl stage plants. Early **FAW** infestations are generally found on small groups of plants in the field. As the season progresses, this pest will infest greater portions of fields. The appearance of **FAW** larvae in sweet corn is an indication that seedling and young whorl stage corn must be scouted for the remainder of the season. **FAW** will infest very young plants, resulting in significant loss if not controlled. Look for plants with more severe feeding than that caused by **ECB**. **FAW** larvae are larger than **ECB**, and are generally tan and brown with a dark head capsule, having an upside down Y shaped pattern in the front.

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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.

Eggplant

CEW larvae were found at low levels in fruit harvested this week in Cumberland County. The larvae found now are likely the progeny of the higher than normal adult flight that occurred in June. The first flight of **CEW** is over now, and new infestations should be minimal. **CEW** can infest crops like eggplant when silking corn plantings are scarce and blacklight trap counts are very high.

Peppers

The second flight of **ECB** adults has begun in some areas, but for most areas the counts still remain low. In areas where steady blacklight or pheromone trap levels of 1-2 **ECB** per night levels exist (see map) maintain a 7-10 day spray schedule for **ECB** control on fields with fruit.

Cabbage looper (CL) larvae were found in a field this week. Generally this pest is a foliage feeder and does not cause economic damage. However, the feeding signs may be mistaken for **beet armyworm (BAW)** feeding (no **BAW** activity has occurred yet in southern pheromone traps). When scouting, look for signs of leaf feeding in the upper part of the canopy. **CL** feeding damage appears as small to medium size holes in the leaf and larvae are usually present on the undersides of the leaf. The larvae are green and have a characteristic looping appearance. **BAW** feeding is more ragged with numerous small holes and window-pane type feeding, and numerous 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 near the head capsule on both sides of the body. **Tomato hornworm (THW)** larvae may also be found in fields now. **THW** larvae consume the entire leaf and produce large peppercorn size droppings relative to the finer consistency of **CL** droppings.

Leafminers were found in a late planting of Cuban peppers in Cumberland County. Usually this pest is found in low numbers later in the season, however, this infestation may have started in the greenhouse. Look for the presence of cream colored serpentine patterns on the leaves. If leaf mines are present on more than one leaf on greater than 10% of the plants, a treatment is likely necessary, especially if the plants are small.

Snap Beans

ECB adult counts remain low in most areas of the state, however, threshold levels (2 to 5 moths per night) for snap beans are occurring in parts of Salem and Cumberland Counties (see **ECB** map). In those areas snap beans will need a treatment for **ECB** at the bloom and pin stages. **Potato leafhopper (PLH)** adults were found in low numbers in a field in Salem County. Monitor fields for the presence of **PLH** adults and nymphs and consider treating fields if levels exceed 5 adults or nymphs per sweep.

Tomatoes

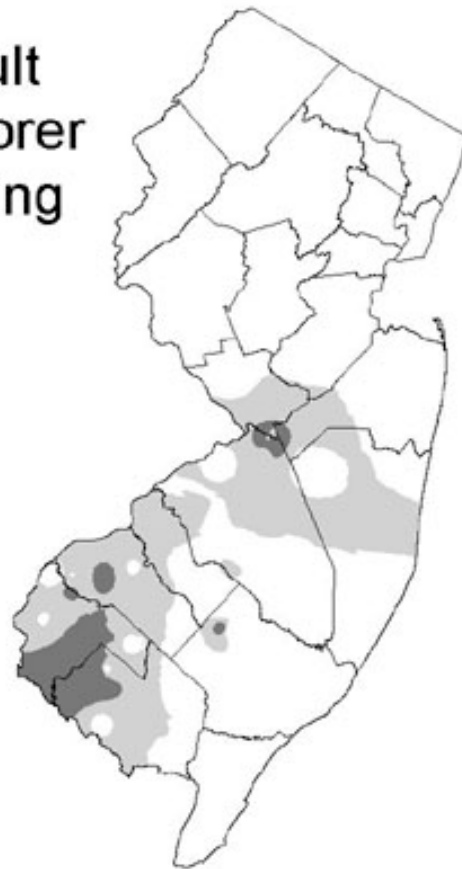
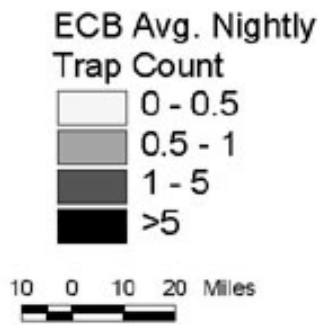
Cabbage looper (CL) and **tomato hornworm (THW)** larvae and feeding damage may be present in the foliage now (see Pepper section for more details). **CEW (tomato fruitworm)** levels are low in most areas now, and new infestations should be minimal until the next flight increases to greater than 10 per night in blacklight traps.

Two spotted spider mite (TSSM) levels have remained low due to the cooler temperatures. Check the undersides of leaves in the lower canopy for stippling and white speckling of the leaf surface, and webbing between the leaf veins. **Mites** are about the size of a pinhead and are visible to the naked eye, although a hand lens is helpful in confirming mite presence. **Mites** usually move in from field edges, especially after edges are mowed, and hot dry weather can result in a population explosion. Where tomatoes are planted in close proximity to eggplant, infestations originating in the eggplant will often move into tomatoes. Early detection with spot treatments where **mites** are moving into the field can help prevent a population explosion and reduce the possibility of multiple treatments for this pest.

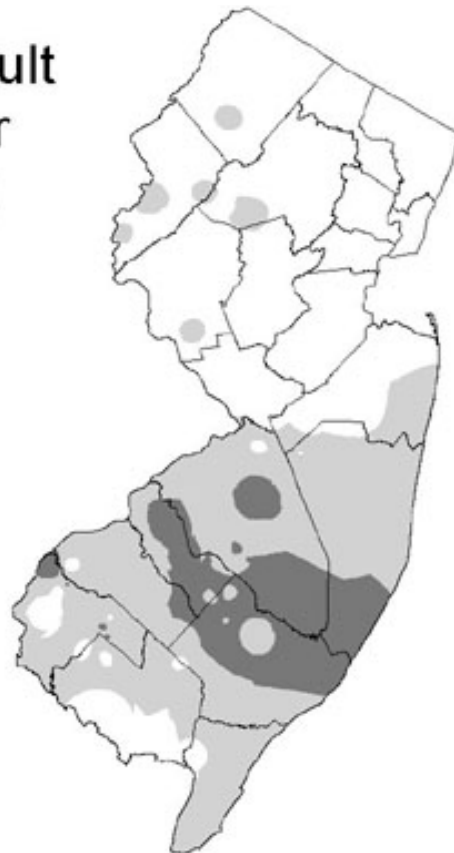
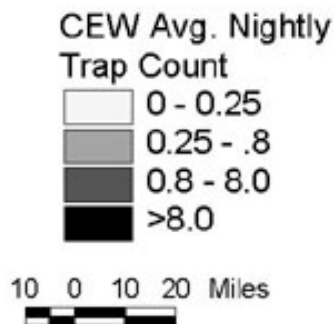
To date, only a few **brown stinkbugs** have been captured in light traps. Sweep net samples from around the state have yielded only scattered individuals. Consider treating tomato plantings with green fruit that are nearing maturity. This pest will move into tomatoes from other hosts such as grain or corn as those crops dry up or are harvested. Prolonged dry weather may also cause **stinkbugs** to move into irrigated crops such as tomatoes.

SEE ECB AND CEW DISTRIBUTION MAPS ON PAGE 3

Distribution of Adult European Corn Borer for the Week Ending July 12, 2000



Distribution of Adult Corn Earworm for the Week Ending July 12, 2000



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

Plant Diagnostic Laboratory & Nematode Detection Service

The Plant Diagnostic Laboratory is a diagnostic service available to the residents of the State of New Jersey. The mission of the Plant Diagnostic Laboratory is to cooperate with Rutgers Cooperative Extension (RCE) personnel to provide the residents of New Jersey with accurate and timely diagnoses of plant problems. There is a fee for this service (see box at end of article).

The laboratory was established in 1991 on the Cook College campus of Rutgers, The State University of New Jersey. The lab began accepting samples in July of 1991 and is now fully operational.

The Plant Diagnostic Laboratory is staffed with two full-time diagnosticians who are trained in all aspects of plant health. Seasonal employees and students assist in the lab. The Plant Diagnostic Laboratory staff works in close cooperation with Rutgers Cooperative Extension specialists, county faculty, and other university personnel, to provide accurate diagnosis and up-to-date recommendations.

How to Submit Samples

1. Sample submission forms can be obtained from your local county Rutgers Cooperative Extension office. They can also be

SEE DIAGNOSTIC LAB ON PAGE 5

Pest Notes

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

✓ **General:** Adult **beetles** of the various **grubs** that attack vegetable roots are still found in the pheromone and light traps throughout New Jersey. **Beetles** such as the **Oriental beetle, Japanese beetle, carrot beetle, May (June) beetle** and **Asiatic beetle** larvae, or **grubs**, feed on the roots of nearly all vegetables, but cause considerable damage to white potatoes, carrots, sweet potatoes, radish, and other root crops. Materials such as Lorsban, Mocap, and diazinon are labeled for various crops (*read label before using for rates, restrictions, application methods, and crops labeled*). Materials applied for **grubs** at this time of the year may or may not be effective, as it is often difficult to protect established crops such as potatoes and sweet potatoes now that the foliage is well developed and application techniques are limited. Consult the *2000 Commercial Vegetable Recommendations for New Jersey* for more information concerning **grubs** and various vegetables.

✓ **Bean (snap, lima):** **Potato leafhoppers** have caused serious damage to beans in the Delaware Valley area this month. Leaves curl upward, and the typical "hopper burn" of yellow tips followed by browning of the leaves is easily observed. Prebloom and bloom are important stages of the plant for yield production, and **leafhoppers** must be closely monitored to prevent economic losses. Two to three applications may be needed if the population is well established. Labeled materials include Asana, Capture, dimethoate, Orthene and carbaryl. Orthene and Asana also control the **European corn borer**, and Capture and dimethoate also control **spider mites**.

Spider mites populations have also been increasing rapidly, partially because of the recent hot, humid weather during the past few weeks. Leaves curl downward, and the typical "webbing" of the leaves is observed when the populations reach a high level. Materials effective for **spider mite** control on beans include Capture, dimethoate, and Kelthane.

For both **spider mites** and **potato leafhoppers**, treat before the population reaches a high level. Severely damaged plants do not have enough time to compensate for the insect damage, and yield loss occurs. Consult pages 76-77 of the *2000 Commercial Vegetable Production Recommendations* for more information on thresholds and recommended materials for management of **leafhoppers, mites** and **whiteflies**.

✓ **Cabbage:** **Harlequin bugs** (black and yellowish/orange **stink bugs**) are attacking cabbage. These pests cause plants to wilt, and leave whitish "sting

marks" on the leaves and head. There are no thresholds for determining treatment necessity, but when these pests are observed it is best to consider a spray application. Ammo, Asana, Capture, Sevin, Warrior and Thiodan are labeled for control of **Harlequin bugs** on cabbage and related crops. Consult label directions for labeled crops, application rates and label restrictions before using any pesticide.

✓ **Cucurbit:** **Spider mite** populations are rapidly increasing on cucurbit crops throughout the Delaware Valley region, attacking crops such as melons, cucumbers, and squash. Some areas further south report that AgriMek has not been very effective, and repeated applications have been of little benefit in controlling **spider mite** populations. Capture, Danitol and Kelthane have been effective. Metasystox-R is also labeled, but there has been little use of this material and thus effectiveness is unknown at this time. Remember that **mite** populations may explode in hot, humid weather, and nearly all miticides are more effective if applied before this happens.

✓ **Horseradish:** **Harlequin bugs** have reached high levels on horseradish in some areas of southern New Jersey. These pests can rapidly reach high population levels, and will leave sting marks as well as cause plant wilting. Although only carbaryl (Sevin) is labeled for **Harlequin bugs**, Ambush is labeled for control of the crucifer **weevil** and will also effectively control **Harlequin bugs**. □

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged slightly below normal. Extremes were 92 at Freehold on the 5th and 45 degrees at Charlotteburg on the 6th. Weekly rainfall averaged 0.41 inches north, 0.54 inches central, and 0.85 inches south. The heaviest 24 hour total was 1.53 inches at Pomona on the 3rd to the 4th. Estimated soil moisture, in percent of field capacity, this past week averaged 67 percent north, 57 percent central and 72 percent south. Four inch soil temperatures averaged 69 degrees north, 72 degrees central and 73 degrees south.

Weather Summary for the Week Ending 8 am Monday 7/10/00

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.61	20.81	4.17	84	53	68.	-4	1149	90	66
CANOE BROOK	.64	14.38	-3.37	90	53	70.	-2	1278	223	66
CHARLOTTEBURG	.23	17.90	-.04	85	45	65.	-4	912	70	58
FLEMINGTON	.14	16.01	-1.05	87	52	71.	-2	1310	219	59
LONG VALLEY	MISSING									
FREEHOLD	.28	11.66	-4.99	92	52	74.	1	1409	220	54
LONG BRANCH	.45	14.99	-1.64	85	54	71.	-2	1197	81	43
NEW BRUNSWICK	.48	15.33	-1.06	87	53	72.	-2	1358	94	65
PEMBERTON	.34	14.13	-2.20	91	50	74.	0	1806	580	39
TOMS RIVER	1.41	16.09	-.66	88	51	72.	-2	1334	210	61
TRENTON	.25	13.35	-2.09	88	54	74.	-1	1424	107	36
CAPE MAY COURT HOUSE	.24	15.21	.51	85	54	72.	-2	1378	175	39
DOWNSTOWN	.75	16.09	.90	88	53	73.	-2	1469	137	63
GLASSBORO	.90	16.65	.35	88	61	76.	1	1584	273	62
HAMMONTON	1.27	15.81	-.34	87	55	73.	-2	1419	114	65
POMONA	1.62	15.62	1.12	87	53	72.	-2	1358	154	62
SEABROOK	.69	17.91	3.26	87	54	75.	0	1566	226	61
ATLANTIC CITY MARINA	.46	14.67	.80	84	59	72.	-1	1368	240	47
SOUTH HARRISON	0.26	19.88	3.50	86	55	73.	NA	1565	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 240 (Ending 7/03/00) This Week 230 (Ending 7/10/00)

DIAGNOSTIC LAB FROM PAGE 3

downloaded from the Rutgers Cooperative Extension website at:

<http://www.rce.rutgers.edu/plantdiagnosticlab/index.html>. Forms are also available on RCE's 24-hour fax back service, FaxInfoLine at 732-932-6767 (documents 3605, 3602, 3603, 3604 and 3606 respectively, as listed below). There are five distinct forms:

- ◆ Plant Identification Submission Form (22 KB PDF).
- ◆ Golf and Landscape Turf Submission Form (23 KB PDF).
- ◆ Landscape, Home Grounds, and Garden Submission Form (21 KB PDF).
- ◆ Commercial Growers Submission Form (22 KB PDF).
- ◆ Insect and Tick Identification Submission Form (27 KB PDF).

2. Completely fill out the sample submission form.
3. Collect the appropriate samples, then carefully follow all of the directions.
4. Properly package the sample, submission form, and payment.
5. Mail the sample to the address on the form.
6. The laboratory will respond with the diagnosis by mail in a timely manner. ☐

Diagnostic Lab Fee Schedule

All In-State Samples
 (except fine turf) \$20
 In-State Fine Turf \$50
 All Out-of-State Samples \$75
 Other Services Negotiable

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