

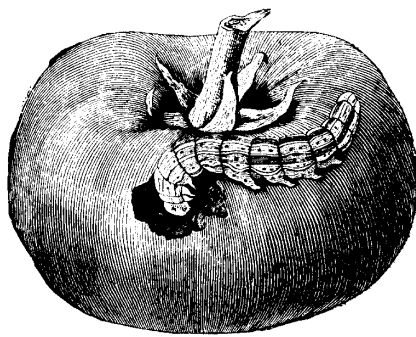
# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JULY 29, 1998

## Pest Notes

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



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✓ **Corn (Sweet): European corn borer** and **corn earworm moth** activity is high, and corn in the late tassel/early to late silk stage is susceptible to these pests. Some of the most effective materials against these pests include Ambush, Pounce, Capture, Baythroid and Warrior. Follow the IPM guidelines for frequency of applications. Thorough spray coverage at the ear zone is necessary to maintain clean ears.

✓ **Eggplant:** Eggplant fields throughout southern NJ have varying levels of **two-spotted spider mite** infestations. In Gloucester and Cumberland Counties populations are high enough to cause yield losses. The most effective miticides for use on eggplant include Vydate L and Vendex 50WP. Growers report that Dibrom 8E and MSR 2SC have been ineffective. Thorough coverage is important for control. After the first application, make 1-2 more applications about 5-7 days apart if the **mite** population remains high.

✓ **Pepper: European corn borer moths** are being caught in the black light trap in high numbers, and peppers must be protected with insecticide sprays to prevent **borer** entry into the fruit. Most effective sprays include Orthene, Asana, Baythroid, Pounce and Ambush. Coverage is critical; and high volume, high pressure is recommended to ensure adequate spray coverage.

Several years ago **cyclamen mites** became a problem on peppers (and occasionally tomatoes). These **mites** are generally a cool-weather pest, and also infest strawberries (same pest is called the strawberry crown mite) and many ornamental plants. They are extremely damaging, and quickly cause yield reductions. AgriMek is labeled in peppers and tomatoes for **spider mite** and **broad mite** control, and works well for **cyclamen** control. Apply 8-16 oz AgriMek 0.15EC at 7-day intervals, but do not exceed a total of 48 oz material per acre per season.

✓ **Tomato: Corn earworm (tomato fruitworm)** populations are increasing throughout the state. Asana, Baythroid, Guthion, and Warrior are labeled for control of **corn earworm** in tomatoes. Monitor is also labeled, but is permitted as a 24-C SLN label only (a copy of label *must* be in possession of applicator at time of application). Cryolite is labeled for **corn earworms**, and works well against the **potato beetle** also; however, cryolite may leave a whitish residue on fruit after several applications (residue washes off easily), so use of cryolite is best when fruit are starting to form or when small fruit are present.

**Thrips** are still a problem in many crops, including tomato. **Thrips**

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control can be achieved using 2-3 applications, 5-7 days apart, with high volume/high pressure sprays to force the insecticide into the flowers, foliage, etc., where **thrips** hide. Guthion, Monitor, Provado and SpinTor are labeled for **thrips** control (note: Monitor has a 7 day pre-harvest interval). SpinTor is a newly labeled insecticide from Dow AgroSciences, and has been reported to be a highly effective material for **thrips**.

Also in tomatoes, monitor fields closely for **spider mite** buildup, especially with the on-going hot weather throughout the area. **Spider mites** increase rapidly, so frequent scouting is important (3 times per week). Especially scout around field edges and borders, wind-breaks, and grassy areas. Control **mites** before the population increases too high. Thorough spray coverage is important. AgriMek 0.15EC and Kelthane MF are both labeled and effective in **spider mite** control.

**Stink bug** populations are increasing in tomatoes, and control is maintained only through frequent applications of insecticides. Monitor and Warrior have been effective against the green **stink bugs**. Scouting for these pests is difficult because they hide as much as possible and fly to other areas of the field at any disturbance. If **stink bugs** are present and damage is increasing, a spray application may be needed to reduce damage. □

## Strawberry Plasticulture

Pete Probasco, Salem County Agricultural Agent

**S**trawberry tips need to be ordered this month if you want to plant after Labor Day in September. Growers in the South Jersey area should have their strawberries planted on plastic the week of September 7th. North Jersey should plant earlier. A two week delay in planting can result in 5,000 less pounds/acre the following spring.

We finished our research study on bed height and saw a marked increase in yields when beds were increased to 8 inches. It didn't seem to matter if you used clear or black plastic on strawberries. The highest yields of 23,256 lbs./A occurred on eight inch high beds of black plastic. All our plots were planted on 5 1/2 foot centers of 5 foot plastic with the plants spaced 12 inches down the row and the rows 18 inches apart. This extra spacing between the rows not only improves fruit size but also decreases the gray mold since the plants dry out faster after a rain. Growers should make plans now for the coming year so the plant orders can be ready for August shipment. We will need more early berries like Sweet Charlie and Seneca in the future to meet the demand. Chandler and Camarosa are later and may yield more per acre. □

## Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

**T**emperatures averaged above normal. Extremes were 98 degrees at Long Branch and Pomona on the 23rd, and 51 degrees at Charlotteburg on the 25th. Weekly rainfall averaged 0.26 inches north, 0.04 inches central, and 0.45 inches south. The heaviest 24 hour total was 0.70 inches at Canoe Brook on the 21st to the 22nd. Estimated soil moisture, in percent of field capacity, this past week averaged 63 percent north, 41 percent central and 32 percent south. Four inch soil temperatures averaged 70 degrees north, 78 degrees central and 79 degrees south.

Weather Summary for the Week Ending 8 a.m. Monday 7/27/98

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	.16	25.40	6.39	91	55	74.	0	1674	216	48
CANOE BROOK	1.20	26.06	5.96	96	57	77.	2	1938	491	71
CHARLOTTEBURG	.08	28.10	7.84	90	51	72.	-1	1480	282	58
FLEMINGTON	.00	23.97	4.52	93	56	75.	1	1609	113	66
LONG VALLEY	.09	25.12	4.30	89	56	72.	-1	1492	216	47
NEWTON	.03	20.88	2.32	92	53	73.	-1	1510	203	49
FREEHOLD	.00	26.13	7.26	96	64	79.	4	1784	177	49
LONG BRANCH	.01	29.28	10.52	98	65	79.	4	1698	168	32
NEW BRUNSWICK	.08	25.95	7.16	96	62	78.	2	1854	159	59
PEMBERTON	.12	19.22	.39	96	61	80.	4	2001	355	22
TOMS RIVER	.00	32.51	13.21	97	62	80.	5	1925	388	18
TRENTON	.02	24.17	6.21	93	60	77.	0	1786	24	24
CAPE MAY COURT HOUSE	.30	19.45	2.78	94	66	80.	4	1915	278	19
DOWNSTOWN	.74	19.36	1.81	93	63	79.	2	2009	235	47
HAMMONTON	.19	18.25	-.31	96	62	80.	3	1972	224	20
POMONA	.16	22.96	6.25	98	61	79.	3	1945	317	23
SEABROOK	.92	22.73	5.76	94	64	80.	3	2122	341	48
ATLANTIC CITY MARINA	.40	23.86	7.85	96	70	81.	6	1916	374	29
WOODSTOWN	.21	18.94	.18	95	63	80.	NA	2149	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW	Last Week			261 (Ending 7/20/98)		This Week		275 (Ending 7/27/98)		

# Vegetable Crops Diseases

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

✓ **General:** Avoid irrigation during the night when temperatures are 70°F and above to minimize diseases caused by **Pythium** and **Phytophthora** on vegetable crops.

✓ **Bean (Snap):** Use a **rust** resistant variety for all seedings from now until the end of the planting season. Apply Ridomil Gold 4E in a 7-inch band over the row after seeding for control of **damping-off** caused by **Pythium**.

✓ **Carrot:** Maintain fungicide applications every 10 days for control of **leaf blights**.

✓ **Cole crops:** Apply Ridomil Gold 4E in a 7-inch band over the row after seeding for control of **damping-off** and early season control of **downy mildew**. On established plantings, maintain applications of maneb or Bravo as a foliar spray every 7-10 days for control of **Alternaria leaf spot**.

✓ **Cucumber:** Apply Ridomil Gold 4E in a 7-inch band over the row after seeding for control of **damping-off**. On established fields with vines running, maintain foliar applications of Bravo + Benlate or Topsin M every 7-10 days for control of **anthracnose**.

✓ **Eggplant:** Apply a copper fungicide + maneb + a spreader sticker every 7-10 days for control of **Phomopsis leaf spot & fruit rot** and the fruit rot phase of **Phytophthora blight**.

✓ **Leeks:** Preplant fumigate fields that will be used for overwinter production in order to reduce the incidence of **white rot** on the crop next spring. Allow 2 weeks for the fumigant to dissipate from the soil prior to transplanting leeks to avoid **phytotoxicity**. On established fields apply a foliar spray of Bravo and repeat twice at 10-day intervals for control of **purple blotch**.

✓ **Lettuce:** Preplant fumigate fields that will be used for fall production in order to reduce the incidence of **drop**. Allow 2 weeks for the fumigant to dissipate prior to seeding lettuce to avoid **phytotoxicity**.

✓ **Muskmelon:** Several fields have numerous wilted plants present. This is primarily due to **bacterial wilt**. At the base of wilted plants there are generally numerous feeding scars from early season **cucumber beetle** feeding. Control of the **cucumber beetle** early in the season is the only means of control for **bacterial wilt**. Other plants are wilting from infection with **Fusarium wilt**. Infected plants are wilted and there are numerous, brown lesions with a gummy exudate present on the lower stem. Use of the variety Athena, which possesses resistance to the disease, is the recommended control measure in addition to crop rotation away from melons for 5 years.

✓ **Onion:** Preplant fumigate fields prior to seeding overwintered bunching onions to reduce the incidence of **white rot** on next spring's crop. Allow 2 weeks for the

fumigant to dissipate prior to seeding to avoid **phytotoxicity**.

✓ **Parsley:** Some areas of fields are chlorotic. This is **nitrogen deficiency** and is not a disease. The excessive amount of irrigation required to produce the crop this summer has resulted in the leaching of nitrogen from the soil. Apply Ridomil Gold 4E as a preemergence spray after seeding for control of **damping-off**.

✓ **Pepper:** **Bacterial leaf spot** is present in some fields. Avoid working in fields while the foliage is wet to reduce spread. Apply supplemental nitrogen to encourage new leaf formation to replace those lost from the disease. Apply a copper fungicide + maneb + a spreader sticker as a foliar spray every 7 days for control. This treatment will also provide control of the aerial phase of **Phytophthora blight**.

✓ **Pumpkin & winter squash:** Apply Bravo + a copper fungicide for control of **foliar diseases**. Fungicide coverage is essential for good disease control. Observe fields for the presence of **powdery mildew**. Once observed, add Bayleton to the above fungicide application and repeat once in 2 weeks for control.

✓ **Squash (Summer):** Maintain applications of Ridomil Gold/Bravo as a foliar spray every 14 days for control of **Phytophthora blight**.

✓ **Tomato:** Maintain applications of Bravo one week and Quadris the next week for control of **leaf spots & fruit rots**. In areas where apples are present do not use Quadris. Quadris is phytotoxic to apples, particularly MacIntosh types.

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

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## Meeting Calendar

**August 4, 1998** - Deer Fencing Installation Seminar, Rutgers Snyder Research Farm, Pittstown, NJ. Call Snyder Farm at (908) 730-9419, ext. 11 to register.

**August 5, 1998** - Deer Fencing Installation Seminar, Rutgers Agricultural Research & Development Center, Bridgeton, NJ. To register, call Rutgers Snyder Research Farm at (908) 730-9419, ext. 11.

**August 17, 1998** - Vegetable & Medicinal Herb Twilight Meeting, Rutgers Agricultural Research & Extension Center, Upper Deerfield, NJ. Contact Dr. Steve Garrison at 609-455-3100.

**August 18, 1998**, 6:30 p.m. - Direct Marketing Twilight Meeting, Monmouth County, Atlantic Farms, 1506 Atlantic Avenue, Wall Township (Rt. 524), NJ 08736. Contact Ramu Govindasamy at (732) 932-9171 ext. 25.

**September 24 - 26, 1998** - The International Lettuce and Leafy Vegetables Workshop, Holiday Inn Boardwalk in Atlantic City, NJ Contact Dr. Wes Kline at (609) 451-2800, or write to International Lettuce Workshop, 291 Morton Ave., Millville, NJ 08332.

# Vegetable IPM Update

Kristian E. Holmstrom and Sally Walker, Program Associates in Vegetable IPM

## Peppers

Pheromone trap counts of adult beet armyworms (**BAW**) have increased sharply in traps located in Atlantic and Cumberland counties. Feeding damage with larvae should be evident in the foliage by the end of the week if an infestation is occurring in your fields. Very small larvae, which appeared to be **BAW**, were found by a grower in a field of Cuban peppers in East Vineland. Look for armyworms on the undersides of leaves and curled in leaves in the growing tips. Early detection and control should help improve management of this pest.

Fall armyworm (**FAW**) adults have also increased in traps in Atlantic and Cumberland counties. Unlike **BAW**, which can be found feeding on the plants before infesting the fruit, **FAW** will directly injure pepper fruit. In addition, European corn borers (**ECB**) continue to be a threat to pepper fruit in all counties. Maintain weekly spray schedules on fields with fruit to prevent an infestation by **FAW** and **ECB**. Consult the [1998 Commercial Vegetable Production Recommendations](#) to determine the appropriate chemicals for this pest complex.

At this time, infestations of two-spotted spider mites are being found in a variety of crops including tomatoes, peppers, and sweet corn. Recent weather (hot and dry) has been conducive to spider mite outbreaks. Vegetable plantings should be checked often for the presence of spider mites. Particular attention should be paid to areas at field edges where mites may be coming from adjacent vegetation.

## Snap Beans

The second generation **ECB** flight is well underway. For processing beans, the critical time for **ECB** treatment is at the bloom and pin stages. The first application should be applied during the bud/early bloom stage, and the second application during the late bloom/early pin stage. From the pin stage through harvest, the spray interval for **ECB** can be determined by area blacklight trap counts. According to the decision chart in the [1998 Vegetable Production Recommendations](#), trap catch levels in Salem and Cumberland counties are indicating a 5-7 day spray schedule for **ECB**. For fresh market beans, maintain weekly spray schedule from pin stage until harvest.

## Sweet Corn

Blacklight trap catches of **ECB** are now increasing to moderately high levels throughout the state. Feeding on whorl stage sweet corn is now evident in southern and central regions. This feeding is occurring along with **FAW** damage. The action threshold for damage from these pests is 12% plants infested either alone or in combination.

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

Shirley	25	Folsom	7
Centerton	13	Little York	6
Ellisdale	10	Woodstown	6
Allentown	9	Indian Mills	5
Georgetown	8	Crosswicks	4
Tabernacle	8	Medford	4

Adult **corn earworm (CEW)** catches remain steady at moderate levels throughout most of the southern and central counties. In the northern counties only sporadic light catches are occurring.

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

Indian Mills	4	Elm	2
Shiloh	4	Shirley	2
Centerton	3	Woodstown	2
East Vineland	3	Denville	1
Elmer	3	Laurel Hills	1
Burlington	2	Pemberton	1

At this time, **corn rootworm beetles** are active in sweet corn plantings. These yellow and black beetles feed on leaves by scraping away at the leaf surface. Their feeding looks similar to feeding caused by young **FAW** larvae. It may be helpful when scouting to peel apart a few plants to see if **FAW** larvae are present. This will help the scout become more familiar with the subtle differences between corn rootworm beetle feeding and **FAW** feeding. Rootworm beetle feeding is not generally an economic threat, but **FAW** feeding requires treatment when 12% or more plants are infested.

## General Sweet Corn Spray Schedule

Silking stage:	North	6 day *
	Central	3 to 4 days*
	South	3 to 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.

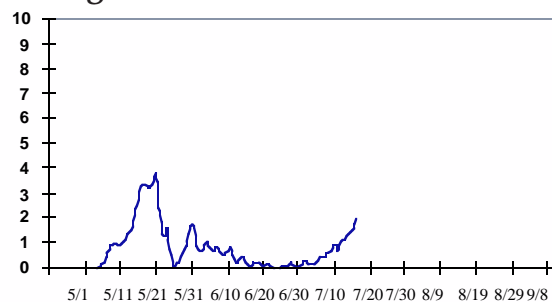
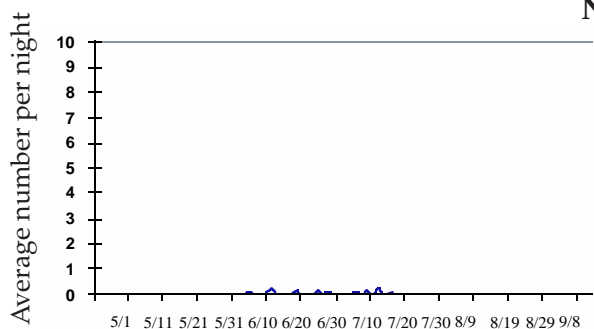
*SEE BLACKLIGHT TRAP CAPTURES ON NEXT PAGE*

## Blacklight Trap Catches

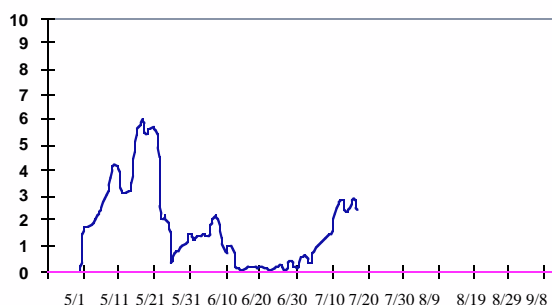
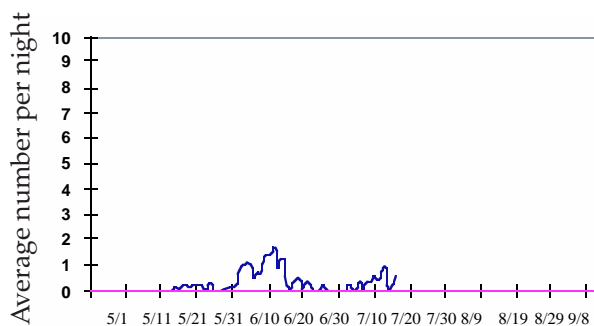
### Corn Earworm

### European Corn Borer

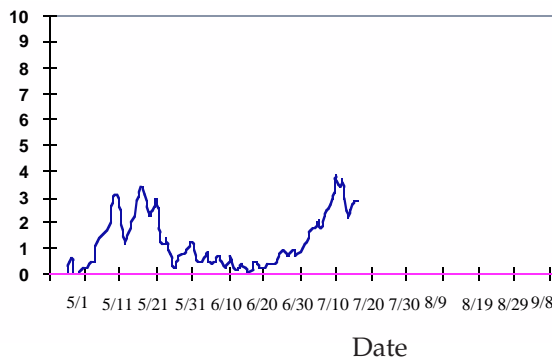
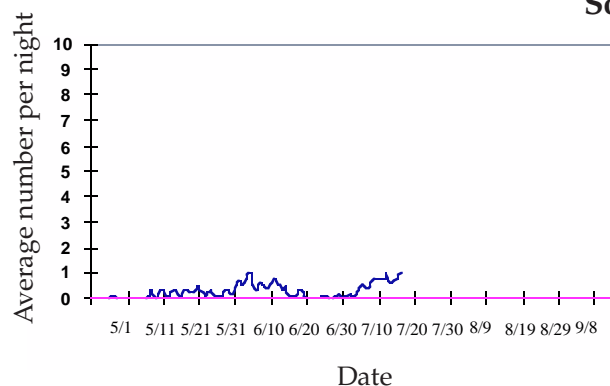
#### Northern Region



#### Central Region



#### Southern Region



## Vegetable & Medicinal Herb Twilight Meeting

A twilight meeting will be held on **August 17, 1998**, at the **Rutgers Agricultural Research and Extension Center in Upper Deerfield**. Growers, processors and agricultural industry representatives are invited to attend. The following field trials are open to visitors.

- ◆ **Variety Trials:** Staked tomatoes, plum tomatoes, processing tomatoes, peppers with resistance to bacterial leaf spot and phytophthora, and potato varieties.
- ◆ **Disease Control Trials:** Fumigation for and cultural controls for phytophthora in peppers, tomato fungicide trials, and disease control with genetically engineered eggplants.

- ◆ **Cultural Trials:** Direct seeding studies of medicinal herbs, no-till and plastic culture of peppers, plant growth regulators on peppers, and IPM studies on peppers.

- ◆ **Insect Control:** Insecticide trials for control of pests in tomatoes, peppers, eggplant and cabbage.

- ◆ Also discuss production and pest problems with Rutgers Cooperative Extension Agents and Specialists.

Plots will be open from 4:00 p.m. until dark. The informal program will begin at 5:30 p.m. at the plots, followed by a wagon tour to more distant plots at 6:00 p.m. For further information, contact Dr. Steve Garrison, Specialist in Vegetable Crops at (609) 455-3100.

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