

# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JUNE 24, 1998



## INSIDE

Scouting Tips: Sweet Corn .....	1
Calendar of Events .....	2
Pest Notes .....	2
Vegetable Crops Diseases .....	3
Postemergence Herbicides .....	3
IPM Update .....	4
Weekly Weather Summary .....	5

## Scouting Tips: Sweet Corn

*Sally Walker and Kristian Holmstrom, Program Associates in Vegetable IPM*

This column is the first of a periodic series providing an overview of scouting techniques and tips for particular vegetable crops. We will review the basics of scouting and provide thresholds when available.

### General Scouting Procedure:

Check at least one planting in each of the growth stages present (seedling, whorl, and pretassel) to get a representation of potential damage for the farm. Examine 50 to 100 plants throughout a planting for the presence of insects and diseases. Once silks appear, discontinue scouting and utilize blacklight and/or pheromone trap data to time silking sprays.

### Seedling to Early Whorl:

Fields should be scouted at least once a week for the presence of **corn flea beetles** in the spring, and **fall armyworms** and **corn rust** from late June through the end of the season.

- **Corn flea beetles:** Check 10 plants in 10 locations and count the number of beetles.  
Threshold: 6 beetles/100 plants at the spike stage if no soil insecticide is used and bacterial wilt susceptible varieties are planted.
- **Fall armyworm:** Check 5 plants in 10 locations and record number of plants infested.  
Threshold: 12% plants infested.
- **Corn leaf rust:** When scouting for worm pests, look for pustules on the lower leaves, especially if **corn leaf rust** is being found in older plantings and susceptible varieties are planted in succession. Fungicide applications are warranted if sweet corn is in the whorl stage (3-9 leaf) or younger. 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. Timing of the first spray is critical, so fields should be scouted for the first **rust** pustules starting in early July.

### Whorl Stage through Pretassel :

Representative plantings should be checked twice a week for **European corn borer** and **fall armyworm**. Early in the season, when populations are high and silking plantings are low, **corn earworm** may

*SEE SCOUTING ON PAGE 2*

# Calendar of Events

**July 8, 1998** - Twilight Meeting, 6:30-8:30 p.m., North Slope Farm, Lambertville, NJ. Salad Mix and Leafy Greens: Production, Harvesting, and Handling to Maximize Food Safety. All farmers are invited to attend this meeting at a NOFA-NJ certified organic farm. Learn about production techniques for salad mix and leafy greens, including cultivation and harvesting as well as the best techniques for post-harvest handling to maximize crop quality and safety. Sponsored by Northeast Organic Farming Association. Call 609-737-6848 for further information.

SEE CALENDAR ON PAGE 3

### SCOUTING FROM PAGE 1

also be a problem. Check 5 plants in 10 random locations and record the total number of plants infested by each of the pest species. Threshold: 12% total plants infested.

The critical time to control **corn borers** is in the pretassel stage, as the tassel emerges from the whorl. Once full tassel occurs, **corn borers** will move into the stalk and newly developing ear.

### Silking Corn

Area blacklight traps provide the information for silking spray schedules for **corn earworm** (CEW) and **corn borer** (ECB). Total the average trap catch count for the previous 5 nights for **CEW** and **ECB** and use the chart below to determine the silking spray schedule.

**Fall armyworms** may also be a problem for silking corn. Pheromone traps can be utilized to monitor this pest, although thresholds are not available. In addition, the level of **fall armyworm** activity in pre-silking corn will indicate the potential pressure on silking corn. □

5-night CEW catch	OR	5-night CEW catch AND ECB catch	5-night ECB catch	Recommended Spray Schedule
0		0	0-4	none
1		0-1	5-20	6 day
2		0-2	21-25	5 day
3		0-3	25+	4 day
4-40				3 day
40+				2 day

# Pest Notes

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

✓ **Corn (Sweet): Fall armyworm adult moths** are being trapped in the black light trap. These pests are 2-3 weeks earlier than we would normally expect to see them in the traps, so monitor the corn whorls closely for **fall armyworm** infestation or damage. If you find the whorls are starting to appear damaged (shotgun holes in the emerging leaves, window-pane type feeding, ragged holes, etc.) pull the whorls and unroll them to find and identify the pest hidden within. If the larvae are the **fall armyworm**, the most effective materials include Asana, Baythroid, Larvin, Warrior, or Pounce/Ambush. If the pest is the **European corn borer**, all of these as well as diazinon, Dipel 10G, Lorsban, and PennCap-M are effective. Consult the 1998 Commercial Vegetable Production Recommendations for additional information on when and how to spray, rates, restrictions, etc. as well as the registration label.

✓ **Pepper:** The first-generation **European corn borer** population has nearly ended, with only 1-2 **moths** being caught per night in the black light trap at RAREC. A one-generation cycle may begin (**summer borers**, also called the univoltine generation), but is normally a minor pest in this area. The current cool - followed by warm - wet weather is ideal for **aphid** populations to suddenly explode, so monitor your pepper plants closely for increasing **aphid** populations. Lannate XL and Provado 1.6FS are effective control measures for both the **green peach aphid** and the **melon aphid** on pepper.

✓ **Potato: Potato leafhoppers** are still found in high numbers in some fields. Fields that were previously treated with Admire 2FS at planting have **leafhoppers**, and if the population reaches the threshold, treatments are recommended. The current threshold is only 1 adult per sweep (using a sweep net) or 1 larvae per 10 leaves. Effective treatments include dimethoate, Furadan 4F, Guthion, Imidan, Lannate, PennCap-M, Provado, Thiodan or Vydate. Consult label for all rates and restrictions.

✓ **Tomato: Tomato and tobacco hornworm** adults are being caught in the black light traps at RAREC in high numbers (2-3 per night). These pests are easily managed when small in size, but more difficult to manage as they grow larger. Apply any of the pesticides listed on pages 150-151 of the 1998 Commercial Vegetable Recommendations for New Jersey, including cryolite or any of the B.t.'s listed, for effective control if you have **hornworms**. **Hornworms** are difficult to see on the plant, so look closely for the larvae or the damage.

A field in Swedesboro had tomato plants with damage similar to that caused by **thrips**. **Thrips** will be found on the leaf undersides, and cause a speckling/stippling of the tissue. They will also be found in the

flowers, and cause the flower to abort as well as deformed fruit to form. Treat **thrips** with Guthion, Monitor or Provado for effective control (note: applicators using Monitor must have a copy of the label in their possession when the application is made, as this is a Special Local Needs Label, SLN24(c) for NJ.) □

# Vegetable Crops Diseases

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

✓ **Bean (Snap): Pythium root rot** is present in several fields at this time. Infected plants have a brown, marginal discoloration on the older leaves, and the portion of the stem below the soil line is discolored and hollow. Improve the soil drainage by deep cultivation, etc., and in future plantings, apply Ridomil Gold 4E in a 7-inch band over the row at seeding, or apply Ridomil Gold PC 11G as an in-furrow treatment at seeding.

✓ **Cole crops: Alternaria leaf spot** is present on Bok Choy cabbage at this time. Infected leaves have numerous circular, brown lesions scattered over older leaves. Apply maneb or Bravo as a foliar spray and repeat every 7-10 days for control.

✓ **Cucumber:** Maintain foliar applications of Bravo + Benlate or Topsin M every 7-10 days for control of **anthracnose**.

✓ **Eggplant: Verticillium wilt** is present in some fields at this time. Infected plants have chlorotic leaves on one or more branches, are stunted, and eventually wilt. No control measures are available at this time. In future plantings, apply preplant soil fumigation for prevention.

✓ **Muskmelon:** Maintain applications of mancozeb or chlorothalonil every 7-10 days for control of **Alternaria leaf blight**.

✓ **Pea: Root rot and Fusarium wilt** are present in some fields at this time. Infected plants turn yellow and die. Root systems are necrotic. No control measures are available at this time. For future plantings, be sure to produce the crop in a field that has been out of peas for 4-5 years; avoid fields with poor drainage; and apply Ridomil Gold 4E in a 7-inch band over the row.

✓ **Pepper: Phytophthora blight** is present in low areas of several fields at this time. Remove infected plants from the field wherever possible, and protect healthy portions of fields with foliar sprays of a copper fungicide + maneb every 7-10 days. Improve drainage within the field by making trenches, etc.

✓ **Potato (White):** Conditions continue to be favorable for the development of **late blight**. Maintain applications of mancozeb or chlorothalonil every 7 days for prevention.

✓ **Pumpkin & winter squash:** When vines begin to run, apply maneb as a foliar spray and repeat once 7 days later for **foliar disease control**.

✓ **Squash (Summer): Phytophthora blight** is present in several fields at this time. Infected plants completely wilt and die. A black girdling lesion is present at the base of leaf petioles at the point of attachment to the main stem. Apply Ridomil Gold/Bravo as a foliar spray for control.

✓ **Tomato: Bacterial canker** is present in several fields of staked tomatoes at this time. Infected plants are chlorotic with dark lesions present along the stem. The internal stem tissue is dark brown. Avoid working in fields while the foliage is wet, and apply a copper fungicide plus maneb or mancozeb as a foliar spray every 7 days to prevent spread. **Late blight** has been detected on the Eastern Shore of Maryland on both fresh market and processing tomatoes. Weather conditions in New Jersey have been favorable for disease spread, therefore, all tomato fields should receive a fungicide (mancozeb, chlorothalonil, Tattoo C or Quadris) application now and repeated on a 7-day schedule for prevention.

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

# Postemergence Herbicides

Bradley A. Majek, Ph.D., Weed Science

Recent warm, humid, cloudy weather and abundant soil moisture has encouraged crops to grow rapidly without developing the normal protective waxy layer on leaf surfaces. Growers often call plants in this condition *soft*. During this period, crops will be more susceptible to injury from postemergence herbicides. To minimize the risk of crop injury:

1. Do *not* tank-mix herbicides that are not specifically cited as safe to apply as tank-mixes.
2. Do *not* use additives unless specifically required for effective results on the herbicide label.
3. Use nonionic surfactants instead of oil concentrates when the label offers the choice of either product.
4. Use the lowest labeled rate of surfactant or oil concentrate labeled.
5. Delay postemergence herbicide applications if possible, until the crop has experienced 3 to 5 bright, sunny, dry days before applying postemergence herbicides. □

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## CALENDAR FROM PAGE 2

**July 23-26, 1998** - NJ Peach Festival and Tomato Expo at the Gloucester County 4-H Fair, at the Gloucester County 4-H Fairgrounds, Mullica Hill, NJ. Contact Michelle Infante at RCE of Gloucester County at 609-863-0110 for information on the Tomato Expo.

**August 17, 1998** - Vegetable Growers' Twilight Meeting, Rutgers Agricultural Research & Extension Center, Upper Deerfield, NJ. Contact RAREC at 609-455-3100.

**August 18, 1998** - Direct Marketing Twilight Meeting, 6:30 p.m., Atlantic Farms, Wall Township, NJ. Contact Ramu Govindasamy at Cook College at 732-932-9171, ext. 25.

# Vegetable IPM Update

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

## Cole Crops

**Cabbage looper (CL)**, **diamondback moth (DBM)** and **imported cabbageworm (ICW)** larvae are now readily found on cole crops. Garden State Pest Management reports that in portions of Ocean County the predominant pest is **DBM** followed by **CL**. When scouting these crops, cover all portions of the plants including the innermost leaves. **DBM** larvae are usually less than 1/2" in length and wriggle when touched. **CL** "loop" like an inchworm and grow to nearly 2". Typically **CL** are found on the large outer leaves while **DBM** may be found anywhere on the plant.

## Peppers

The first **European corn borer (ECB)** generation is over in most parts of the state so that the threat to early peppers is likely passed. As adult counts in local blacklight traps increase to 1 or more per night, pepper fruit should be protected on a 7 to 10 day spray schedule. The use of Orthene will help control pepper maggot as well.

## Tomatoes

There has been little insect pressure as yet in our unsprayed test plots in Hunterdon and Cumberland counties. **Tomato hornworm** eggs have recently been found and low **thrips** levels continue. A few stinkbugs are being caught in blacklight and pheromone traps associated with tomato plantings. Thresholds are not available for this pest. Bear in mind that treatments for **stinkbug** may be warranted if there are fruit on the plants and adjacent weedy areas have been mowed or grain is becoming dry. These conditions can result in **stinkbugs** migrating into tomato plantings.

## Sweet Corn

In southern counties adult catches of **European corn borer (ECB)** have dropped to very low levels in most traps indicating that the first flight is over. In some northern region traps, **ECB** adults are still being caught, although their numbers are decreasing over all in these counties. Feeding in sweet corn plantings by **ECB** larvae is extremely high in some areas. This is particularly true in the central region where the level of plants infested in some Somerset County plantings is approaching 100%. Careful attention to this pest situation is imperative. Larvae will be evident in emerging tassels at this time. Look for brown or whitish frass (droppings) in the tassel. These plantings should be treated as tassels emerge and again at full tassel/first silk to prevent damage to developing ears. The action threshold is 12% plants infested.

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

New Egypt	3	Elmer	2	Jamesburg	2
Sergeantsville	3	Farmingdale	2	Manville	2
Burlington	2	Flagtown	2	Mullica Hill	2
Egg Harbor	2	Indian Mills	2	Quakertown	2

Adult **corn earworms (CEW)** continue to be caught throughout the state. While very few individuals are being trapped in the northern region, activity is moderately high elsewhere. This pest is now dictating conservative silk spray schedules in some areas. \*See general spray schedules. Control of this pest may be enhanced by taking advantage of early morning dew when spraying. The use of a spreader/sticker and high pressure is also helpful.

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

Manalapan	6	Elmer	4	Cohansey	2
New Egypt	6	Sewell	3	Egg Harbor	2
Indian Mills	5	Cedarville	2	Hammonton	2
Crosswicks	4	Chapel Hghts	2	Newton	1

**Fall armyworm (FAW)** adults are being caught in blacklight traps in the south and damage in the field is being reported by private consultants as far north as Middlesex County. The Delaware IPM program is also reporting **FAW** feeding as of last week. Start checking early whorl stage corn for infestations. It can be difficult to tell the difference between **ECB** and **FAW** when the larvae are small, but **FAW** mainly lays eggs in younger whorl stage corn and consumes more foliage than does **ECB**.

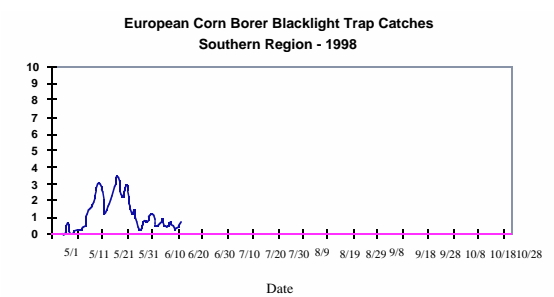
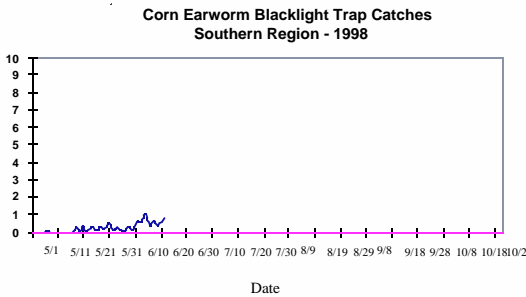
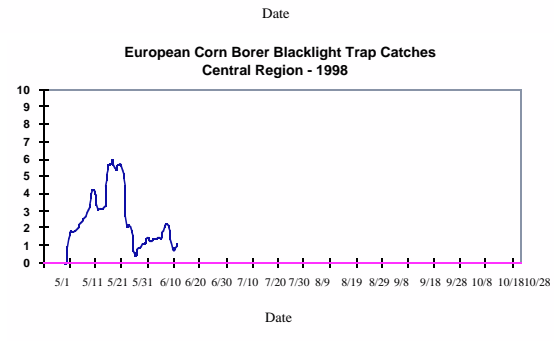
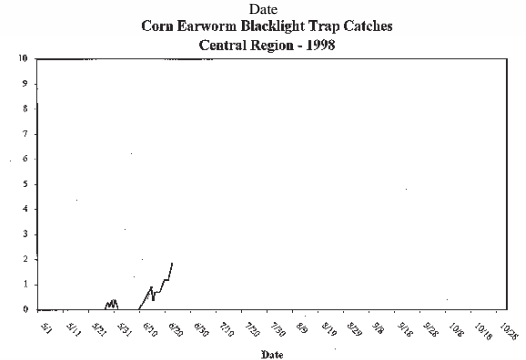
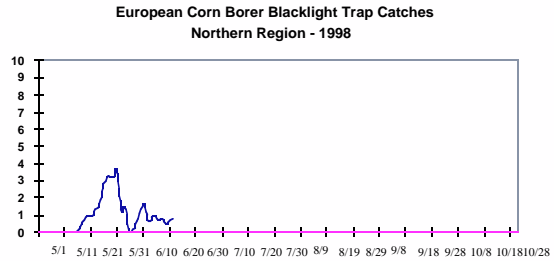
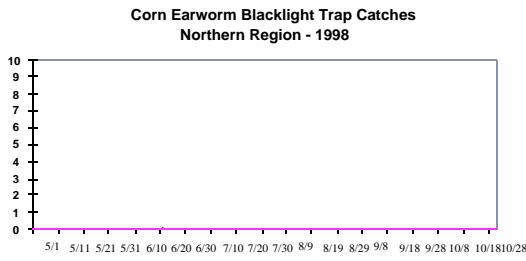
## General Sweet Corn Spray Schedule

Silking stage:	North	5 – 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.

SEE BLACKLIGHT TRAP CATCHES ON PAGE 5

**TOM-CAST Daily disease severity values (DSV's) that are used to determine when to spray are published twice weekly by Rutgers Cooperative Extension of Hunterdon County. They are available on an IPM Hot-line (908-788-1316) by fax (on request to Martha Maletta, 908-788-1339) and on the RCE Fax Info Line 24 hrs. a day (732-932-6767) as document 2029.**



## Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged much below normal. Extremes were 93 degrees at Pemberton on the 21st, and 54 degrees at Charlotteburg on the 21st. Weekly rainfall averaged 1.12 inches north, 0.35 inches central, and 0.42 inches south. The heaviest 24 hour total was 1.17 inches at Newton on the 15th to 16th. Estimated soil moisture, in percent of field capacity, this past week averaged 93 percent north, 77 percent central and 78 percent south. Four inch soil temperatures averaged 70 degrees north, 67 degrees central and 73 degrees south.

### Weather Summary for the Week Ending 8 a.m. Monday, 6/22/98

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.78	24.05	9.83	90	58	72.	3	889	176	76
CANOE BROOK	.23	23.75	8.39	91	60	74.	5	1055	376	81
CHARLOTTEBURG	1.32	25.97	10.51	89	54	70.	4	756	235	95
LONG VALLEY	1.41	24.07	8.37	84	60	70.	3	767	190	82
NEWTON	1.84	20.16	6.26	85	57	70.	2	765	174	85
LONG BRANCH	.12	26.95	12.40	84	62	72.	2	848	121	59
NEW BRUNSWICK	.98	24.69	10.59	91	63	74.	2	988	149	94
PEMBERTON	.17	17.22	3.31	93	61	76.	5	1081	256	41
TOMS RIVER	.15	31.02	16.68	88	60	74.	4	1045	324	56
TRENTON	.32	22.89	9.79	83	60	71.	-1	952	63	64
CAPE MAY COURT HOUSE	.52	17.93	5.22	87	64	75.	4	1015	217	64
DOWNSTOWN	.28	17.39	4.41	89	62	75.	3	1124	214	62
GLASSBORO	.23	17.06	3.05	89	64	76.	4	1148	259	58
HAMMONTON	.18	17.35	3.71	90	61	75.	3	1076	195	53
POMONA	.31	21.94	9.50	88	61	75.	4	1057	253	59
SEABROOK	1.15	20.09	7.73	90	64	76.	4	1188	272	90
ATLANTIC CITY MARINA	.27	22.92	11.07	87	67	75.	5	982	240	53
WOODSTOWN	.34	16.93	3.91	91	62	76.	NA	1223	185	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW	Last Week	183 (Ending 6/15/98)	This Week	251 (Ending 6/22/98)						

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