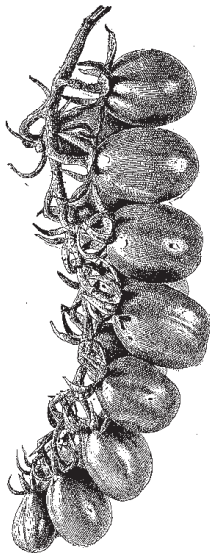


PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

AUGUST 5, 1998



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North Jersey TOM-CAST Update

Martha Maletta, Research Associate, RCE Hunterdon County, Winfred P. Cowgill, Jr., Hunterdon County Agricultural Agent, and Stephen A. Johnston, Ph.D., Plant Pathology

TOM-CAST, the early blight and anthracnose forecaster for tomatoes, has been available to North Jersey growers this season. Rutgers Cooperative Extension has been publishing daily disease severity values (DSV's) twice-weekly since mid-May. Growers following TOM-CAST receive this information by phone or fax and use the DSV's from the site or sites nearest their farm to schedule fungicide applications.

The six reporting locations have logged the following cumulative DSV's from May 15 to August 2:

Pittstown:	56
Ringoes:	82
Milford	95
Beattystown:	48
Denville:	65
Oldwick:	79

How does this translate into spray schedules for these sites? TOM-CAST calls for sprays starting at 25 cumulative DSV (since transplanting) and repeating at 15 to 20 cumulative DSV. As of August 2, a grower would have made the following number of fungicide applications to a crop transplanted May 15th:

Pittstown:	2 to 3
Ringoes:	4 to 5
Milford:	5 to 6
Beattystown:	2 to 3
Denville:	3 to 4
Oldwick:	4 to 5

A grower following a 7 to 10 day conventional schedule starting two weeks after transplanting would have made 6 to 9 applications for the same period.

The number of sprays called for by TOM-CAST reflects the season's early cool weather and recent dry weather. For a crop transplanted May 15th, TOM-CAST called for the first spray between June 15 and June 24, depending on location. (In 1997, sprays started between June 22 and July 8 for crops planted May 15.) The actual time between

SEE TOM-CAST ON PAGE 2

Resources for Soil Testing and Plant Analysis

A factsheet entitled "Laboratories for Soil Testing and Plant Analysis" provides a list of laboratories and what testing services they conduct. The factsheet can be obtained from Dr. Joseph Heckman, Plant Science Department, Foran Hall, Rm., 167, 59 Dudley Road, New Brunswick, NJ 08901-8520, (732)-932-9711, ext. 119. □

Meeting Calendar

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.

TOM-CAST FROM PAGE 1

resprays has been quite variable, from 8 days to nearly 3 weeks depending on farm location and time of the season. DSV's accumulated most rapidly for all sites from mid-June into early July.

North Jersey growers interested in learning more about TOM-CAST and how to use it should contact Rutgers Cooperative Extension of Hunterdon, Warren or Morris Counties or the Rutgers Vegetable IPM program (732-932-9801) for a packet of instructional materials. □

Pest Notes

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

✓ **Corn (Sweet): European corn borer, fall armyworm and corn earworm moths** are active and numbers have been steadily increasing in our blacklight trap. Corn in the tassel, silk or ear stage should be protected from **worm** infestation. Baythroid and Warrior, Pounce and Ambush have been two of the most effective pyrethroid insecticides in corn trials throughout the eastern U.S. for these pests. Larvin is a non-pyrethroid that has also been effective. Consult page 141 of the 1998 Commercial Vegetable Recommendations for New Jersey for more information concerning spray decisions and thresholds.

Also, several growers report **spider mite** infestations in sweet corn just before picking. These pests interfere with picking, and the presence of live **mites** on the ears reduces the marketability of fresh market corn. Unfortunately, there is little labeled for **spider mite** control in sweet corn. Diazinon is labeled, but ineffective. MSR is labeled, and *may* be effective, but has a 21 days-to-harvest waiting period. M-Pede and Pyrellin are also labeled, but ineffective. The pyrethroids (Warrior, etc.) will likely suppress **mites** early, but may cause a flare-up of the **mite** population if use is continued. AgriMek, Kelthane and Vendex are two effective miticides, but are labeled in many vegetables *except* sweet corn.

✓ **Pepper:** A full management program for **corn borer** control should be in effect. **Corn borer moths** are active at night, and the population has been increasing. There are many effective spray materials labeled (listed in the vegetable recommendation guide), but it would be wise to select ones that also control **corn earworms** at this time. Thorough spray coverage is important for pepper fruit protection, so high volume/high pressure is recommended regardless of spray material used.

✓ **Tomato: Stink bug** populations have been increasing in tomatoes, and damage can readily be observed. In trials conducted at RAREC, Warrior has been one of the most effective spray materials for **stink bug** control. However, frequent applications need to be made to reduce damage. **Stink bugs** are highly mobile, and can damage many fruit as they probe and feed, then fly to another plant. Thorough coverage is important for effective **stink bug** control.

Thrips damage is appearing on the fruit of tomatoes. Damage to green tomatoes is a silver-to-whitish speckling, and on red tomatoes it is a yellow speckling. Guthion, Monitor, Provado and SpinTor are labeled for **thrips** control. Growers in Swedesboro report that Guthion and Provado were not controlling the **thrips**, and Monitor has too long of a preharvest interval (7 days). SpinTor is a new label and has been excellent in **thrips** control in various tests. Also, SpinTor has a 1-day preharvest label. Thorough coverage is important.

Hornworm adults are still being trapped in the black light traps (1-2 per night), and these pests can cause much foliar damage to tomato and pepper if left unchecked. Effective management tactics include the use of any of the *B.t.*'s labeled for **hornworm** control (too many to list). Refer to the 1998 Commercial Vegetable Recommendations for New Jersey for a listing of the available biological insecticides. □

Vegetable Crops Diseases

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

✓ **Asparagus:** Observe fields for the presence of **rust** and **purple spot**. Once observed, begin foliar applications of mancozeb, and repeat every 10 days. If these diseases are not controlled, early defoliation (ferns turn brown) occurs, and the field becomes susceptible to **Fusarium root & crown rot**.

✓ **Bean (snap & lima): Pythium blight** is present in several fields at this time. Infected plants (seedlings through mature plants) completely wilt, and the infected portion of the stem is hollow. Ridomil Gold 4E should be applied over the row immediately after seeding for control. **Damping-off** caused by the fungus, **Rhizoctonia** is present in several fields of Fordhook lima beans. Infected seedlings are stunted or in some cases never emerge. Stems of infected seedlings contain numerous, reddish-brown, sunken lesions with definite margins. Ridomil Gold PC 11G should be applied in-furrow at seeding in future seedings for control.

✓ **Beet:** Plants in some fields being harvested now have severe, deep, black cracks present. This is the result of growth cracking, and is not caused by a disease. Try to maintain as uniform soil moisture as possible to reduce the incidence of growth cracking. Maintain foliar applications of a copper fungicide every 7-10 days for control of **leaf spot**.

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

✓ **Cole crops: Downy mildew** is present in several fields at this time. Infected leaves have numerous, gray-black lesions on the older leaves, and white sporulation is present on the underside of the lesions. Apply Ridomil Gold/Bravo every 14 days as a foliar spray for control.

✓ **Corn (sweet):** Observe fields for the presence of **rust**. If observed in fields prior to the whorl stage, apply a foliar application of a fungicide for control. Older fields will not benefit from fungicide applications.

✓ **Cucumber:** Maintain foliar applications of Bravo + Benlate or Topsin M every 7-10 days for control of **foliar diseases**. **Bacterial wilt** is present in some fields. Infected plants are completely wilted. This is the result of early season feeding by the **cucumber beetle**. Control of the beetle is essential for preventing transmission of the bacteria. The beetle cannot transmit the disease after flower appears; therefore, insecticide applications from flowering until the end of the season are not needed for prevention of the disease.

✓ **Eggplant: Verticillium wilt** is present in several fields at this time. Infected plants have chlorotic leaves on one half of the plant, and eventually completely wilt. Crop rotation and preplant fumigation at the highest labeled rate of the fumigant are the control measures for future plantings. **Rhizoctonia root rot** is present in some

fields at this time. Infected plants are stunted, and numerous, black, sunken lesions with definite margins are present on the stem below the soil line. Optimize growing conditions by applying irrigation and sidedress with supplemental nitrogen fertilizer to encourage more plant growth.

✓ **Leek:** Apply foliar applications of Bravo at 10-day intervals for control of **purple blotch** and **downy mildew**.

✓ **Lettuce:** Apply Ridomil Gold 4E in a 7-inch band over the row after seeding for control of **damping-off**.

✓ **Parsley:** Apply Ridomil Gold 4E as a broadcast application shortly before emergence for control of **damping-off**.

✓ **Pepper:** Maintain foliar applications of maneb + a copper fungicide + a spreader sticker for control of **bacterial leaf spot & Phytophthora blight**. **Blossom end rot** is prevalent in some fields produced on plastic mulch and drip irrigation. This is a physiological condition resulting from uneven levels of soil moisture. Tensiometers should be used in plastic mulch and drip irrigated fields to accurately schedule irrigations.

✓ **Potato (white): Bacterial soft rot** is present in some fields being harvested now. Infected tubers completely collapse and have a foul odor associated with them. The extreme heat of July created conditions favorable for infection.

✓ **Pumpkin & winter squash: Powdery mildew** is prevalent in several fields at this time. Foliar applications of Bravo must be applied with good coverage (both upper and lower leaf surfaces) for control. Poor coverage will result in control of the disease on the upper surface only, and lower leaf surface will become heavily infected with mildew. Eventually, the leaf will turn yellow and early defoliation will occur. Add a copper fungicide with Bravo to assist controlling **Phytophthora blight**.

✓ **Spinach:** The variety *Vancouver* has resistance to **white rust** and good horticultural characteristics. Plant this variety whenever possible to assist in control of the disease. Apply Ridomil Gold 4E as a broadcast treatment immediately after seeding for control of **damping-off** and early season control of **blue mold** and **white rust**.

✓ **Squash (Summer): Bacterial wilt** is present in numerous fields at this time. Infected plants completely wilt. See the **cucumber** section for more details. Maintain applications of Ridomil Gold/Bravo as a foliar spray every 14 days for control of **Phytophthora blight**.

✓ **Tomato:** Maintain applications of chlorothalonil (Bravo or Terranil) as a foliar spray for control of **foliar & fruit diseases**.

✓ **Turnip (greens):** Apply Ridomil Gold 4E as a broadcast treatment immediately after seeding for control of **damping-off**.

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

Vegetable IPM Update

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

Peppers

European corn borer (ECB) adult counts have started to decrease, but egg hatch and larval activity are peaking at this time. Very small larvae and egg masses were found on fruit in an unsprayed test plot in Salem County yesterday, and egg masses are being found in central counties. For most of the state, **ECB** is the main target pest for peppers. In Salem, Atlantic, and Cumberland counties the pheromone trap catches of adult fall armyworms are at high levels. Maintain weekly spray schedules on fields with fruit, and use materials that will control armyworms in addition to corn borers in areas where armyworm counts are high.

Beet armyworm (BAW) larvae were found feeding on plants in Atlantic County, and adult activity in pheromone traps in peppers continues to be moderate to high in the southern counties (Atlantic and Cumberland Counties in particular). Look for small **armyworms** on the undersides of leaves and curled in leaves in the growing tips. As the larvae grow plant damage is more easily seen, and with heavy populations numerous larvae can be found feeding on the leaves and fruit. **BAW** larvae are difficult to control, and it is not uncommon to find live larvae after an insecticide application. Early detection and control should help improve management of this pest. Consult the [1998 Commercial Vegetable Production Recommendations](#) for appropriate chemicals.

Tomatoes

Stinkbug damage on fruit has increased since last week in an unsprayed test plot in Cumberland County, and adults continue to be found in blacklight traps. Continue to treat tomatoes to minimize damage from these pests.

Sweet Corn

After last week's sharp increase in adult ECB activity, trap catches have subsided to moderate levels throughout southern and central counties. In the northern counties, catches continue to increase gradually, although not to levels found further south. This pest continues to be a threat for all stages of sweet corn. Scouting of whorl and pretassel stage plantings is critical to determine the need for treatment. Treat when 12% or more plants are infested with ECB alone or in combination with **fall armyworm (FAW)**. ECB egg masses deposited near developing ears can result in high levels of damage as well. The silk schedules that are necessary to control **corn earworm (CEW)** should prevent damage from these borers.

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

Little York	10	Allentown	5
Manville	7	Jamesburg	5
Milltown	7	Matawan	5
New Egypt	7	Ellisdale	4
Crosswicks	6	Medford	4
Farmingdale	6	Tabernacle	4

Adult **CEW** activity remains moderate throughout southern and central counties. In the northern counties blacklight trap catches are becoming more frequent but still are at low levels.

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

East Vineland	4	Green Creek	1
Shirley	3	Little York	1
Indian Mills	2	Matawan	1
Shiloh	2	Milford	1
Cedarville	1	Milltown	1
Elm	1	Pemberton	1

General Sweet Corn Spray Schedule

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

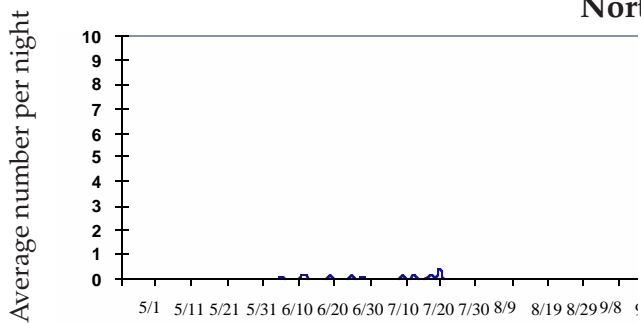
*These are general spray recommendations for large areas of the state. Growers can increase or decrease the intervals based on their own local situations.

FAW activity has increased sharply over the last two-week period. Pheromone traps placed in southern counties are registering high numbers of adults with some traps catching greater than 50 per night. Feeding on seedling and whorl stage sweet corn may now be found in all counties. In plantings of sweet corn six to eight inches high, **FAW** infestations have reached 50% as far north as Hunterdon County. It is critical that seedling and whorl stage corn be monitored for **FAW**. Treat when 12% or more plants are infested. **FAW** at present levels is damaging to peppers, lettuce and snap beans as well as sweet corn. All crops should be checked regularly for signs of **FAW** infestation. This situation could become much more serious if weather systems of southern origin reach New Jersey. Regular monitoring of crops is essential. Control measures should be initiated with increases in adult activity. Watch for updates on **FAW** activity in following issues.

SEE BLACKLIGHT TRAP CAPTURES PAGE 5

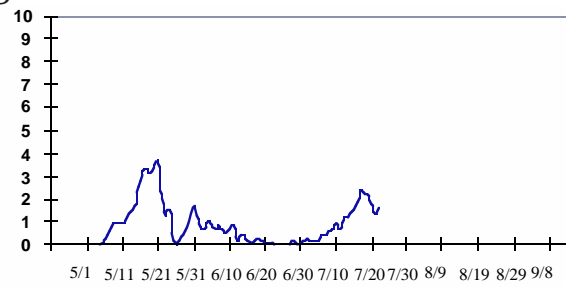
Blacklight Trap Catches

Corn Earworm

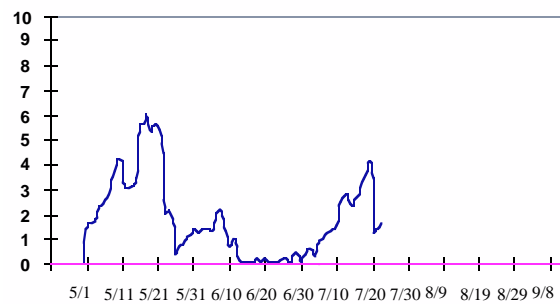
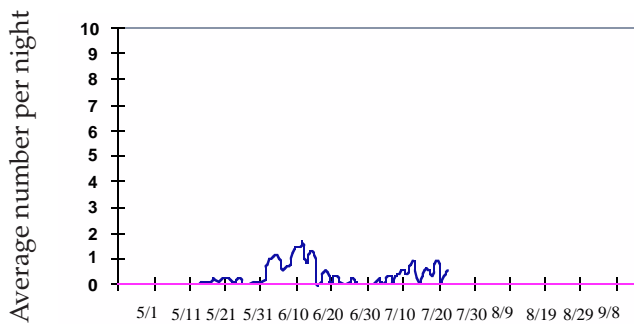


European Corn Borer

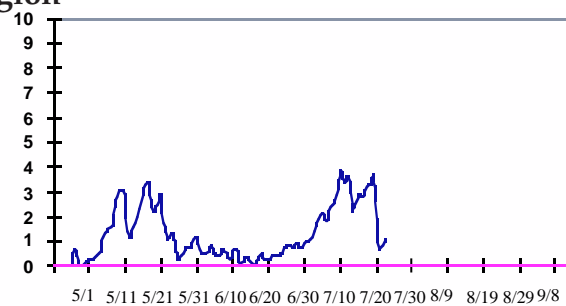
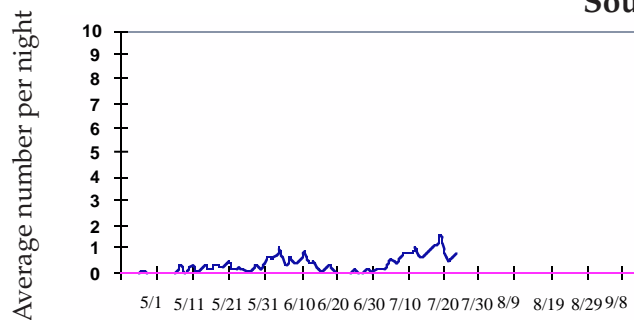
Northern Region



Central Region



Southern Region



Date

Date

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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PLANT & PEST ADVISORY

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