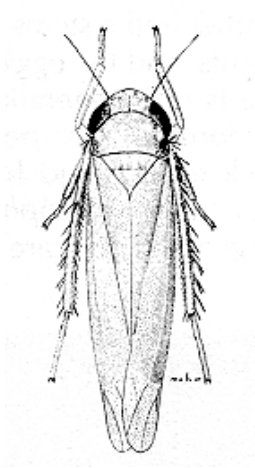


# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

SEPTEMBER 3, 1997



## North Jersey TOM-CAST Update

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

**T**OM-CAST, the early blight and anthracnose forecaster for tomatoes, has been available to the growers of North Jersey this season. Rutgers Cooperative Extension of Hunterdon County has been publishing daily disease severity values (DSV's) twice-weekly since early 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 27:

Pittstown:	67
Ringoes:	106
Milford:	111
Beattystown:	71
Denville:	82
Oldwick:	102

How does this translate into spray schedules for these sites? Following the TOM-CAST system which calls for sprays starting at 25 DSV and repeating at 15 to 20 DSV, a grower would have made the following number of applications (as of August 27) of Bravo 720 at the rate of 3 pints/Acre if the crop was transplanted on May 15th:

Pittstown:	3 to 4
Ringoes:	5 to 6
Milford:	5 to 7
Beattystown:	3 to 4
Denville:	4 to 5
Oldwick:	5 to 6

A grower following a 7 to 10 day conventional spray schedule starting two weeks after transplanting would have made 11 to 15 applications for the same period.

SEE TOM-CAST ON PAGE 2

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*TOM-CAST FROM PAGE 1*

The reduced number of sprays called for by TOM-CAST reflects the season's cool and/or dry weather, especially during May and June. For a crop transplanted May 15th, TOM-CAST called for the first spray between June 22 and July 8, depending on location. The actual time interval between re-sprays has generally been about 2 to 2 1/2 weeks but as much as 4 weeks at the "driest" sites, i.e., lowest cumulative DSV's.

For more information on the Tomcast Program visit the New Jersey SARE Tomato Home Page at: <<http://orchard.uvm.edu/tomato/default.html>>

or contact Martha Maletta at: <[maletta@aesop.rutgers.edu](mailto:maletta@aesop.rutgers.edu)> or 908-788-1339

The research behind the implementation of this program has been funded by grants from the USDA Sustainable Agricultural and Research and Education Program and the New Jersey Agricultural Experiment Station SARE program. □

**Editor's Note: Due to the Rutgers Cooperative Extension Annual Conference, there will be no Vegetable Crops edition newsletter next week (9/10/97). The newsletter will resume the following week.**

## Pest Notes

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

✓ **General:** Beet **armyworm** activity has been very low based on the black light traps at the Rutgers Agricultural Research & Extension Center. However, 4-5 fall **armyworm moths** are being caught each night, indicating that a high population of **moths** is present in this area. Fall **armyworm moths** deposit eggs on almost any vegetable crop, although they prefer crops such as pepper and sweet corn. Growers must scout their fields for fall **armyworm** egg masses or larvae. Larvin is excellent for control of the fall **armyworm**, but insecticides such as Lannate, Baythroid, and permethrin will also control fall **armyworms**. Thorough spray coverage is needed for maximum effectiveness of the insecticide.

✓ **Bean (Snap):** Adult and nymphs of potato **leafhoppers** are found in high numbers in bean fields throughout the southern portions of the state. Treatment is recommended if the number of nymphs plus adults exceeds 100 per 20 sweeps of the sweepnet during prebloom, which is a low threshold because of the damage this pest can cause. Effective treatments include Asana, dimethoate, Lannate, methyl parathion, Orthene, and Penncap-M. Do not let populations of these pests build up because it is difficult to play catch-up with control measures. Once the damage is present, yields will begin to be reduced no matter what protection measures are applied later.

✓ **Pepper:** High numbers of **European corn borer moths** are being caught in the black light traps at the Rutgers Agricultural Research & Extension Center. Average daily trap counts still range from 6-10 **moths** per night. Sprays should be applied thoroughly to the foliage and fruit to prevent damage by **borer** larvae in the fruit. Orthene is still one of the best methods of preventing **borer** damage but has a 7 day preharvest interval. If harvest is within 7 days, select another effective insecticide such as Lannate, Asana, Baythroid, or permethrin (Ambush, Pounce). For the upcoming week, cool evening weather is predicted, which will reduce the adult **moth** activity (mating, oviposition, flight, etc.).

Also in pepper, tomato and tobacco **hornworm** eggs are being deposited on pepper leaves. See the discussion on **hornworms** in the tomato section above for more information concerning these pests.

✓ **Tomato:** Adult tomato and tobacco **hornworm moths** are being caught in the black light traps every night (average from 1-3 per night). High numbers of eggs have been found in both tomato and pepper fields. As the **worms** grow larger and larger, they can heavily damage plants by feeding on leaves, stems and fruits. It is strongly recommended that growers control these pests before larvae become large because it is much easier to control them if they are small, and they cause little damage when they are small. Biological insecticides such as the B.t.s are effective against these pests. Other insecticides that will control **hornworms** include cryolite, the pyrethroids (Asana, Danitol, Warrior, Baythroid), Guthion, Lannate, Monitor and Penncap-M. □

# Notes from Cedar Meadow Farm No-Till Vegetable Field Day - Part II

Submitted by Rick VanVranken, Atlantic County Agricultural Agent

*This is the continuation of last week's article by Brian Caldwell, Cornell Cooperative Extension Educator, CCTT Vegetable and Small Fruit Program, Owego, NY on the Veg-Prod E-mail Discussion Group on observations from a 7/19/97 field day at the farm of a leading no-till proponent.*

**Cover crops**—Steve Groff talked about how he uses cover crops in his no-till system. He feels that the cover crops are what makes the whole thing work better. In his vegetables, he uses winter rye (if seeded late in the season); rye and hairy vetch (if seeded earlier); and rye, vetch, and crimson clover (for transplanted crops) as winter covers. He may switch to straight hairy vetch for his pumpkins. Hairy vetch is sometimes seeded with oats, which grow well in the fall, giving better soil protection than vetch alone. The oats then die over winter.

Pumpkins are seeded directly into the cover crop stand, after rolling with a Buffalo rolling stalk chopper (see below). He uses low rates of roundup, command, and curbit for pumpkin weed control. He uses a smooth coulter in front of his no-till seeder, as this will not grab residue and push it into the soil the way a wavy coulter will. Steve said that if you're going to do no-till, you should have three types of coulters in your shop, to adjust to various crops and conditions.

Transplanting tomatoes into rye-vetch-crimson clover residue, he has not had to spray for Colorado potato beetle, and early blight pressure is considerably reduced. He uses about 2/3 the usual herbicide rates on these.

There was considerable discussion about how to kill cover crops before seeding or transplanting vegetables. The longer one waits into flowering (but before seed maturity!), the more completely rye or vetch can be killed by mowing or rolling. But this may be too late for some crops, so various rates of roundup, atrazine, or paraquat may need to be used, according to the crop. It is not always clear how much a weak regrowth will compete with the crop.

Dr. Ron Morse of Virginia Tech, developer of the no-till transplanter, added that brassica crops can be grown in mow-killed or roll-killed cover crops without herbicides, because the brassicas can be transplanted later and are quick-maturing.

Cover crops take soil moisture away as they grow early in the season, so conditions may be dry for seeding or transplanting. But Steve feels that because of better soil water retention, they help make more moisture available later in the season. However, his vegetable crops are all irrigated (which was good, as the season had been very dry).

**Equipment Demos** — Rolling stalk chopper—This is a ground driven machine used in the midwest for chopping corn residue. It has bladed rollers that flatten, crush and chop. It is driven fast, about 10 MPH. Steve has modified the linkage so it will handle stones and non-corn residue better. It uses much less horsepower and is faster than a flail chopper. The residue will last longer, since it is in bigger pieces. Very tall rye will wrap around the rollers. It costs about \$4500 plus over \$1000 in parts for modifications.

SEE NO-TILL ON PAGE 5

## Vegetable Crops Diseases

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

✓ **Bean:** Observe fields for the presence of **rust**. Once observed, apply Bravo as a foliar spray every 7 days.

✓ **Cole Crops:** Maintain applications of Bravo every 7-10 days for the control of **downy mildew** and **Alternaria leaf spot**.

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

✓ **Cucumber:** Maintain applications of Bravo + Benlate for control of **foliar diseases** every 7 days once vines begin to run. In fields with a history of **Phytophthora blight**, add a copper fungicide.

✓ **Eggplant:** Maintain applications of a copper fungicide + maneb plus a spreader sticker every 7-10 days for the control of **Phytophthora** and **Phomopsis fruit rots**.

✓ **Leek:** Maintain applications of Bravo every 10 days for the control of **purple blotch**.

✓ **Lettuce:** Shortly after thinning, apply Ronilan or Rovral as a directed spray to the base of plants and surrounding soil for control of **drop (Sclerotinia)**. Repeat in 10 and 20 days. Rovral will also provide control of **bottom rot (Rhizoctonia)**.

✓ **Pepper:** Maintain applications of a copper fungicide + maneb with a spreader sticker every 7-10 days for the control of **Phytophthora** and **Anthraco-nose blight**.

✓ **Pumpkin & Squash (Winter):** Maintain applications of Bravo + Benlate + a copper fungicide every 7-10 days for the control of **foliar** and **fruit diseases**. Observe the undersides of leaves for the presence of **powdery mildew**. Once observed, add Bayleton and repeat once in 14 days for control.

✓ **Spinach:** Apply Ridomil Gold as a soil surface application immediately after seeding for the control of **damping-off** and early season control of **blue mold** and **white rust**.

✓ **Squash (Summer):** Apply Ridomil/Bravo as a foliar spray every 14 days for control of **Phytophthora blight**. Observe young fields for the presence of **powdery mildew**. Once observed, apply Bayleton as a foliar spray; and repeat once in 14 days.

✓ **Tomato:** Maintain applications of Bravo every 7-10 days for control of **foliar** and **fruit diseases**. □

# Vegetable IPM Update

Kristian E. Holmstrom, Vegetable IPM Program Associate and Sally Walker, Vegetable IPM Program Associate

## ◆ Pepper

The main fruit pests at this time are the **fall armyworm (FAW)** and the **European corn borer (ECB)**. **ECB** adult counts had dropped, but another burst of activity occurred this week. **FAW** pheromone trap catches remain high in Gloucester, Cumberland, and Atlantic counties, and larvae have been found infesting fruit. **Beet armyworm** feeding damage can be seen in some fields in Cumberland County, but the population appears to be under control. Make sure that chemical applications target **armyworms** and **borers**.

## ◆ Sweet Corn

**Corn earworm (CEW)** blacklight trap catches have increased sharply throughout the state, particularly in the southern counties. The population is still low compared to a typical year.

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

Cedarville	5	Shiloh	5	Milltown	3
Folsom	5	Elm	3	Rosenhayn	3
Hammonton	5	Egg Harbor	3	Burlington	2
Porchtown	5	Elmer	3	Lawrenceville	2

**ECB** trap catches are generally decreasing throughout the state although there has been a moderate increase within the week. This is probably the result of recent warmer evening temperatures.

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

Little York	21	Woodstown	7	Cranbury	4
Shirley	13	Milford	6	Hopewell	4
Jutland	9	Sergeantsville	6	Fishing Creek	4
Cohansey	8	Burlington	4	Sewell	4

**FAW** pheromone trap catches are still high and ear damage from this pest remains a threat. Ear damage from **FAW** and **ECB** is now apparent in some plantings where rains delayed insecticide treatments.

## ◆ General Sweet Corn Spray Schedule

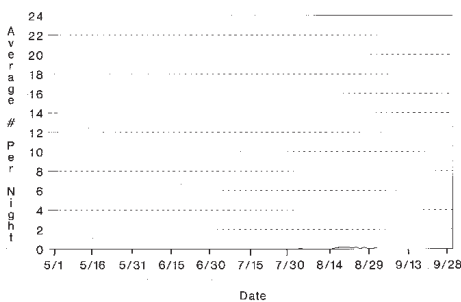
Silking stage: North 4 - 5 days\*

Central 3 days\*

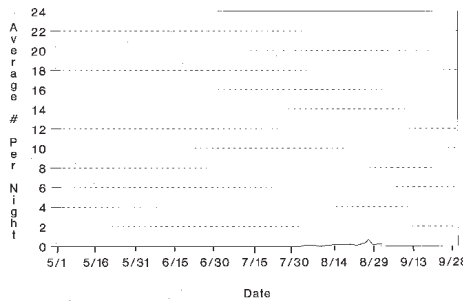
South 3 days\*

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

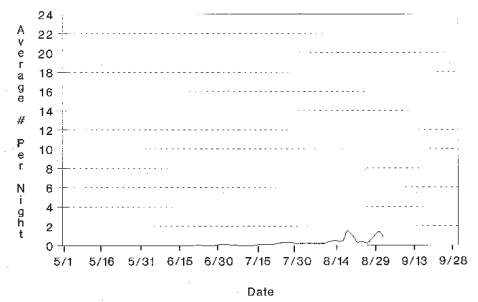
Northern NJ- CORN EARWORM (CEW)  
Blacklight Trap Catches



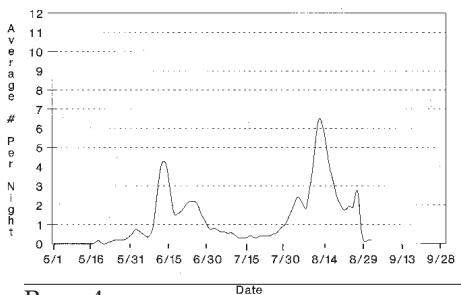
Central NJ- CORN EARWORM (CEW)  
Blacklight Trap Catches



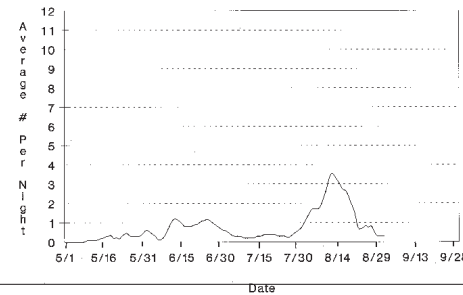
Southern NJ- CORN EARWORM (CEW)  
Blacklight Trap Catches



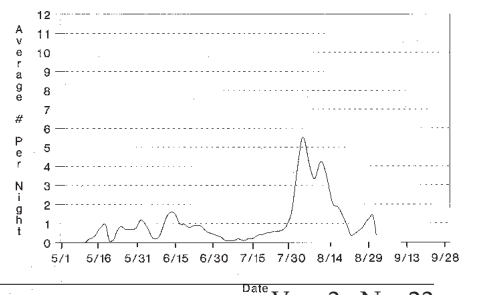
Northern NJ- EUROPEAN CORN BORER (ECB)  
Blacklight Trap Catches



Central NJ -EUROPEAN CORN BORER (ECB)  
Blacklight Trap Catches



Southern NJ -EUROPEAN CORN BORER (ECB)  
Blacklight Trap Catches



# Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged near normal. Extremes were 85 degrees at several locations, on the 1st and 50 degrees at Trenton on the 30th. Weekly rainfall averaged 0.65 inches North, 0.50 inches Central, and 0.20 inches South. The heaviest 24 hour total was 1.33 inches at Trenton on the 28th to 29th. Estimated soil moisture, in percent of field capacity, this past week averaged 86 percent North, 72 percent Central and 66 percent South. Four inch soil temperatures averaged 66 degrees North, 70 degrees Central and 70 degrees South.

Weather Summary for the Week Ending 8 a.m. Monday 9/1/97											
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC	
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP		
BELVIDERE BRIDGE	.44	22.73	-1.81	81	54	68.	1	2032	-174	76	
CANOE BROOK	.58	24.04	-1.67	84	56	71.	3	2424	200	83	
CHARLOTTEBURG	.72	24.96	-1.01	82	53	67.	2	1905	139	87	
FLEMINGTON	.45	24.02	-.72	83	55	69.	1	2117	-164	86	
LONG VALLEY	.91	25.03	-1.75	78	53	67.	2	1886	-82	90	
NEWTON	.83	20.64	-3.36	78	52	65.	0	1757	-256	90	
FREEHOLD	.33	23.41	-.73	85	56	71.	2	2408	-20	73	
LONG BRANCH	.17	22.18	-2.31	80	57	69.	0	2320	-31	57	
NEW BRUNSWICK	.37	29.39	5.00	83	56	70.	-2	2331	-204	84	
PEMBERTON	.19	23.23	-1.59	85	66	76.	6	2700	223	45	
TOMS RIVER	.22	25.75	.74	85	54	70.	0	2378	42	53	
TRENTON	1.73	26.03	2.90	84	50	70.	-1	2306	-330	83	
CAPE MAY COURT HOUSE	.00	19.72	-1.89	82	58	70.	-2	2465	139	53	
DOWNSTOWN	.25	23.12	.26	84	55	70.	-1	2461	-180	62	
GLASSBORO	.61	25.14	1.32	84	60	71.	0	2622	3	68	
HAMMONTON	.24	25.12	1.30	83	54	69.	-2	2442	-181	62	
POMONA	.11	32.78	10.79	80	55	68.	-1	2442	-3	56	
SEABROOK	.02	23.95	2.11	83	58	71.	0	2627	-29	52	
ATLANTIC CITY MARINA	.14	25.08	3.94	80	64	72.	1	2507	122	48	
WOODSTOWN	.38	20.71	-2.77	85	55	70	NA	2646	NA	NA	
WES KLINE — GDD BASE 40 PINEY HOLLOW	Last Week			203 (Ending 08/25/97)				This Week		209 (Ending 09/01/97)	

### NO-TILL FROM PAGE 3

We saw the stalk chopper used on some forage soybeans, and it seemed to do a good job. Some of the soybean stalks may not have been killed. Later on, we saw broccoli no-till transplanted into the same field. After the usual start-up adjustments, that looked good too.

It was not clear to me whether a "slow death" from the stalk chopper may make cover crops easier to kill compared to a clean cut from a mower.

**No-till pumpkins**—Dr. Ed Beste from the University of Maryland spoke more about no-till pumpkins. Over half of Maryland's pumpkins (800 acres) are grown in no-till hairy vetch. A major advantage is that the pumpkins are clean at harvest and don't need washing. 4-6 inches of growth is the best stage for the vetch to make it through the winter. They seed at 20-25#/A of vetch, often adding oats at half rate.

**No-till transplanter**—Dr. Ron Morse demonstrated and spoke about his no-till transplanter. He said that once he decided to add a separate ripping unit up front, the transplanter became much more successful. In Pennsylvania, 3 no-till transplanters are available on loan from SWCD. [Gloucester County Ag Agent Michelle Infante recently purchased one of Dr. Morse's SST

transplanters for evaluation and demonstration work. We can make arrangements for you to try it next year, but now is the time to think about cover crops to use with the system.]

He stressed 6 necessary points—

- 20" smooth coulter up front.
- curved subsoiler-type knife behind that pulls itself into the soil.
- you need to add transplant solution (often used in dry conditions).
- a double disc is mounted as an opener before the planting shoe.
- the press wheels need to provide pressure on the inside (right next to the plant) to close the furrow well—soil is not loose as in tilled fields.
- drip tape is added without an additional coulter so it can be closer to the row.

**Other Equipment**—Five no-till grain drills and a Monosem no-till vegetable seeder were demonstrated in a wheat stubble field. A new 20-25 HP cultivating tractor similar to an Allis Chalmers "G" was shown—the "Saukville" (Saukville Tractor Corp., PO Box 572, Newburg, WI 53060, 414-675-6221). Cost is over \$15,000. □

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