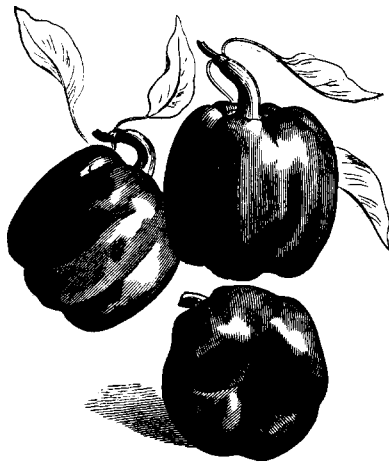


PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

AUGUST 4, 1999



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Disaster Relief in New Jersey

Bruce Barbour, Assistant Director, Rutgers Cooperative Extension

This summer's drought has farmers thinking about the availability of federal aid. Discussions with Farm Service Agency (FSA) officials have helped us determine what may happen and what you must do to be eligible for any aid they offer.

First, what you should be doing right now:

1. Keep records of your expenses, yields and returns.
2. Do not harvest any drought-damaged crops until you contact your FSA office or county agent to document crop loss. Contact your crop insurance agent, if insured.
3. Report your acreage to the Farm Service Agency right away. Expect to pay a \$30 late fee, since July 15 was the filing deadline for most crops.
4. File a loss report (Form 574) with the FSA within 15 days from the time you are able to determine your losses on a given crop. You need to file one form 574 for each crop you have losses on.

Here's what you can expect to happen as data is collected and disaster determinations are made:

The first level of aid follows the declaration of a disaster area that includes your county. Emergency *loans* are made available to qualifying farms within the area at an interest rate of 3.75%. Threshold loss to qualify is 30% in any of your major farm enterprises.

The next level of aid is the Noninsured Crop Disaster Assistance Program (NAP). NAP aid is a *grant* that the farmer does not need to repay. NAP aid is available when area yields of a specific crop are 35% or more below normal. To be eligible for benefits the individual farm yield must be less than 50%. You report these losses on Form 574 mentioned above. The NAP compensates farmers for 55% of the crop's established average market price.

The third possible level of drought disaster assistance is the Crop Loss Disaster Assistance Program (CLDAP). This requires special federal legislation. It is potentially the most inclusive, covering all farms and crops. Like the NAP, the assistance is in the form of a grant which, in the 1998 crop year version of this program, covered 60-65% of the market price of the loss. In the past the collection of both NAP and CLDAP payments on the same loss was allowed, thus achieving a greater compensation for loss.

Other forms of stress relief are available from FSA:

SEE RELIEF ON PAGE 2

Pest Notes

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

✓ **General** - The Federal EPA announced the elimination of continued use of methyl parathion (PennCap-M, methylparathion 4E, etc) on some vegetables, including carrots, certain peas, certain beans, tomatoes, and others. Full details have not been distributed yet, but more information on these cancellations will be announced in the near future.

Monitor vegetable crops closely for **spider mite** infestations. The hot, dry weather conditions throughout the area are ideal for **spider mite** populations to rapidly increase, and these pests are difficult to control once the population becomes well established and webbing appears. Several effective miticides are available for use in vegetables, including AgriMek, Kelthane, Vendex, Metasystox-R, and dimethoate (Cygon). Consult label for crop listings, rates and restrictions.

✓ **Pepper - European corn borer moths** are still being caught in the blacklight trap. Peppers should be protected with foliar sprays to prevent **European corn**

borer damage. All of the materials recommended in the *Vegetable Recommendations* are effective. However, the days-to-harvest after last application varies for the different materials, which will be important as you pick the peppers. Depending on material selected, sprays may be required every 5-7 days for acceptable control of **corn borers**.

Leafminers have been reported in peppers. A threshold has not been established for **leafminers** in peppers, but it is likely a very high threshold. AgriMek, Dibrom, Ambush, Pounce, SpinTor, Trigard and Vydate are all labeled in peppers for this pest, but unless the infestation is severe, and damage includes leaves drying out, it is likely that the cost/returns ratio would not be beneficial to the growers regardless of material selected.

County agricultural agents also report that **thrips** have been found in flowers in pepper plants. These pests can cause direct damage to the fruit, as well as spread viruses throughout the field if the virus is present.

Baythroid is labeled for **thrips** control in pepper. Also, Orthene (labeled for **aphids** and **corn borers**) will also reduce the **thrips** population.

SEE PEST NOTES ON PAGE 6

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 101 degrees at several locations on the 1st and 56 degrees at Charlotteburg on the 2nd. Weekly rainfall averaged 0.37 inches north, 0.00 inches central, and 0.05 inches south. The heaviest 24 hour total was 0.82 inches at Long Valley on the 28th to the 29th. Estimated soil moisture, in percent of field capacity, this past week averaged 58 percent north, 44 percent central and 30 percent south. Four inch soil temperatures averaged 79 degrees north, 76 degrees central and 80 degrees south.

Weather Summary for the Week Ending 8 am Monday 8/ 2/99

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.70	11.58	-8.30	98	63	81.	8	1901	300	55
CANOE BROOK	.07	12.16	-8.81	99	63	82.	8	2134	539	52
CHARLOTTEBURG	.27	13.34	-7.79	97	56	77.	5	1605	371	47
FLEMINGTON	.00	9.42	-10.89	101	63	82.	8	1973	332	54
LONG VALLEY	.82	11.36	-10.40	93	63	78.	6	1693	281	59
FREEHOLD	.00	11.66	-8.03	98	68	84.	9	1964	205	60
LONG BRANCH	.00	13.05	-6.54	97	68	80.	5	1912	231	30
NEW BRUNSWICK	.01	12.64	-7.04	100	66	83.	8	2073	226	60
PEMBERTON	.00	13.08	-6.68	101	64	83.	8	2144	345	17
TOMS RIVER	.00	6.80	-13.42	98	66	80.	6	1900	214	21
TRENTON	.00	13.09	-5.74	99	64	81.	5	1895	-28	24
CAPE MAY COURT HOUSE	.02	10.35	-7.06	94	71	82.	6	2032	236	21
DOWNSTOWN	.28	15.29	-3.11	96	69	82.	6	2071	136	36
HAMMONTON	.00	13.29	-6.15	98	68	83.	7	2075	167	16
POMONA	.00	13.68	-3.86	98	67	83.	8	2024	244	26
SEABROOK	.00	15.95	-1.84	96	70	83.	7	2202	260	25
ATLANTIC CITY MARINA	.00	10.50	-6.30	96	65	82.	7	2055	363	17
WOODSTOWN	.00	15.33	-4.25	101	63	82.	NA	2198	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW	Last Week 279 (Ending 7/26/99) This Week 296 (Ending 8/02/99)									

Scouting Tips: Field Identification of Pepper Foliage and Fruit Worm Pests

Sally Walker and Kris Holmstrom, Vegetable
IPM Program Associates

Pepper plantings should be monitored at least weekly for the presence of insects and diseases. The following damage and insect descriptions should be helpful in determining what pests are present in the field. Note that some major pests (primarily corn borer, corn earworm, and fall armyworm) may not be monitored by scouting fields because they directly injure fruit and are detected when yield loss is occurring. Insect traps are used instead to monitor the adult stage to detect when these pests may be a potential threat. However, it is important to know what worms are infesting fruit to determine where problems may be occurring with your spray schedule or choice of materials. The following key was adapted from "Pepper Worms and Their Management", Vegetable Insect Note 30, by Ken Sorenson, North Carolina Cooperative Extension, found on the web at: www.ces.ncsu.edu/depts/ent/notes/vegetables/veg030e.

1. Foliar damage present in the top of the canopy but no obvious fruit damage is occurring and larvae are not easily found:

a. Entire leaves are eaten from the edges towards the center of the leaf, leaves are missing or stripped, and large pellet-like droppings are present on leaves and around the base of the plant. If the worm is found it is large (1/2 inch to 2 inches in size) and light green with a spine or horn on back end: **tomato hornworm**.

b. Small to medium sized (1/4 to 1/2 inch) holes are present on the leaves between the veins, and there may be a small amount of insect droppings on the leaves. If the larvae is found it is light green, tapered at one end, and moves with looping action like an inchworm: **cabbage looper**.

2. Foliar damage easily found, initially on a few plants clumped in scattered areas throughout field. Small holes or windowpane-type feeding are present in the tops of the plants with multiple larvae usually found on the undersides of the damaged leaves. Light brown 'fuzzy' egg masses may also be found on the undersides of the leaves. As the population increases larvae will be abundant, feeding on the entire plant including the fruit:

a. The larvae are green to greenish-black with a dark spot on the side behind the head, usually occurring in late July through September in the southern counties: **beet armyworm**.

b. The larvae are pale gray to black with a yellow stripe along the side, usually occurring in July in the southern counties: **yellow striped armyworm**.

3. Foliar damage is not noticeable, but fruit are rotting, turning red prematurely, and/or have holes in the sides or under the cap:

a. Larvae are cream colored to light brown with a dark brown or red head capsule and occur full season throughout the state. They primarily enter fruit under the cap leaving brown frass (excrement), but will enter and exit through the sides when larvae mature: **European corn borer**.

b. Larvae may be yellow, green, red, or brown and have an orange or light brown head. Primarily found infesting fruit in late August through October. Usually enter fruit through the sides, leaving a large hole, but have been seen entering under the cap when larvae are small: **corn earworm**.

c. Larvae are brown with a dark stripe along the sides and an inverted Y-shaped marking on the head capsule, occurring late August through October. Larvae usually enter under the cap when small, and enter/exit fruit through the sides leaving a large hole when larvae mature: **fall armyworm**.

4. Miscellaneous, infrequent foliage/fruit pests that may mimic other worm damage:

a. Small pinhole size holes present on leaves and small brown striped or black beetles are found: **flea beetles**.

b. A light green larva about 1/8 inch in size is feeding underneath the cap of the pepper similar to corn borer but frass are small black pellets and larvae wriggle actively when touched. Often larvae are protected by webbing: **leaf roller**.

c. Fruit have no detectable markings on the outside but are rotting on the inside or are prematurely turning red. A cream colored maggot about 1/4 to 1/2 inch size is present feeding primarily inside the pith of the pepper: **pepper maggot**. □

IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Peppers

At this time, the primary pepper insect pest is **European corn borer (ECB)**. Egg masses continue to be found, and larvae have been detected infesting fruit in some fields. Weekly treatments are needed to protect fruit from infestation. All shaded regions on the **ECB** map indicate areas where insecticide schedules are necessary to provide control of this pest. In the southern counties, particularly Cumberland and Atlantic counties, adult **beet armyworm (BAW)** pheromone trap catches have been increasing and larvae are beginning to show up on the plants. Monitor fields for the presence of larvae feeding on the undersides of leaves. **Tomato hornworm** larvae and eggs (light green spheres laid singly on the undersides of a leaf) are also appearing in some plantings, but treatments for **ECB** should control **hornworm** infestations. However, make sure that **BAW** damage is not confused with hornworm damage (see accompanying article for damage descriptions).

Tomato

Stinkbugs continue to be active in blacklight traps, and fruit damage has been increasing. Periodic treatments for this pest continue to be necessary. **Corn earworm (CEW)** blacklight trap catches have been increasing to moderate levels in many parts of the state (see map), but silking sweet corn is likely going to be the primary target for this pest. Monitor tomato fruit for the presence of larvae or signs of feeding damage. For processing tomatoes, consider a treatment if 5 **CEW** damaged fruit are found out of 200 inspected in the field. For fresh-market tomatoes, regular treatments for **stinkbugs** should be reducing the potential for **CEW** infestations in tomatoes. In the southern areas, particularly Cumberland and Atlantic counties, **BAW** adult pheromone trap counts have been increasing. Monitor fields for the presence of larvae feeding on the undersides of leaves in the canopy.

Snap Beans

ECB blacklight trap counts are moderate to high throughout most of the state (see map). Treat processing and fresh market snap beans for **ECB** when plantings are in the bud and pin stages, and treat at least weekly from the pin stage until harvest if blacklight trap counts are 2 to 5 per night. See the *1999 Commercial Vegetable Production Recommendations* manual for more details.

Sweet Corn

ECB adult populations are moderate to high throughout the state (see map). Note that the extremely high catches in the Shirley area of Salem County are a result of the harvest of a potato field immediately

adjacent to the trap. The destruction of the vines is likely driving large numbers of **ECB** adults out of the field, and many are ending up in the trap. While this catch is not representative of the regional population, it serves as further indication of high level activity in the area.

Feeding on whorl stage sweet corn is now occurring throughout the state. It is critical to control this pest in the pre-tassel to full tassel stage, as larvae in the tassels will travel to the forming ears as tassels open. Consider treating for this pest when 12% or more plants are infested with **ECB** alone, or in combination with **fall armyworm (FAW)**. The highest nightly **ECB** blacklight trap catches are:

Shirley	87	Centerton	16	Hackettstown	13
Ellisdale	48	Sergeantsville	16	Allentown	12
Crosswicks	43	Woodstown	16	Georgetown	11
Little York	35	Mullica Hill	14	Medford	9

CEW adult populations are increasing quickly in many areas of the state (see map). Silking sweet corn plantings are at high risk of infestation from this pest. It is critical to protect these plantings now. Begin silking schedules at full tassel to first silk, so as not to allow silking to occur for long before the first insecticide application. When observing the **CEW** map, please note that the shaded area representing populations from 0.8 to 8 moths per night roughly corresponds to a 3-day silking schedule. The highest nightly **CEW** blacklight trap catches are:

Ellisdale	28	Seabrook	9	New Egypt	7
Crosswicks	25	Cranbury	8	Milltown	6
Hammonton	14	Georgetown	8	Pemberton	6
Centerton	13	Millstone	7	Shirley	5

General Sweet Corn Spray Schedule

Silking corn: 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.

SEE ECB AND CEW DISTRIBUTION MAPS PAGE 6

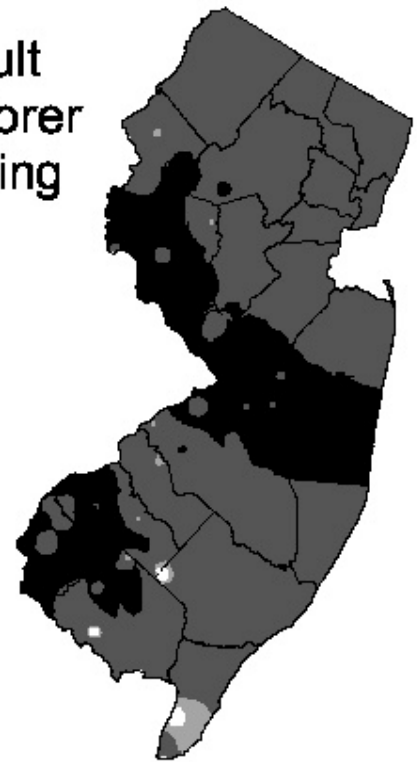
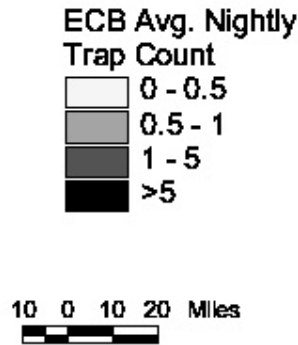
PEST NOTES FROM PAGE 3

✓ **Potato** - High numbers of several species of **cutworm moths** trapped in the blacklight traps indicate a high level of adult activity. Both the **black cutworm** and **dingy cutworm moths** are being trapped, and soil samples from potato fields have various size larvae of these same two **cutworms**. If potatoes are going to be in the ground for awhile, Sevin bait may attract larvae to the toxic bait. Or, an application of Asana, Ambush, Pounce, Monitor, Lannate, or Sevin directed at the base of the plant and the foliage may reduce the population, especially if the **cutworms** feed on the foliage at night. If the plants are not still green, Sevin Bait may be the only material that may possibly work, depending on the temperatures (sunlight) and rainfall.

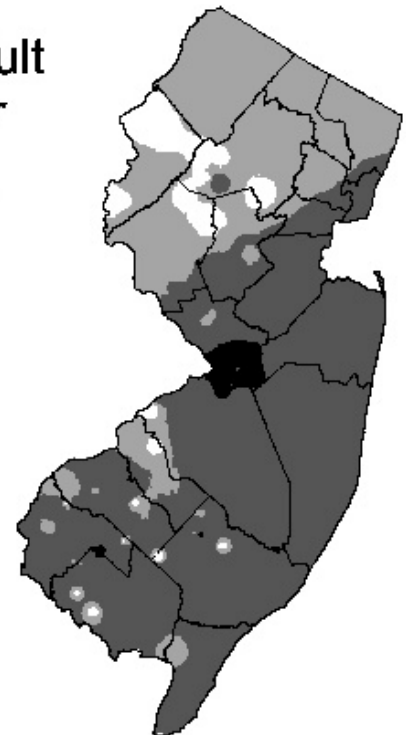
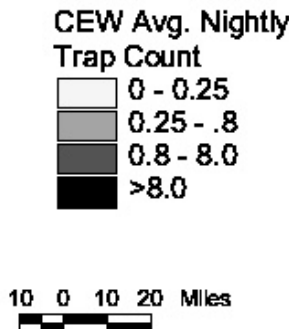
✓ **Tomato** - A high number of **hornworm moths** are still being caught in the blacklight trap at RAREC (4-5 per night). These pests often go unnoticed in the field, but cause heavy defoliation as they grow larger, and often attack the fruit. **Hornworms** are easily controlled with any of a variety of insecticides, including the biological insecticides or *Bt*'s, if the applications are made while the **worms** are small. Monitoring the fields is a key tactic for management of this pest.

County agricultural agents report that **leafminers** have been causing light to moderate damage to tomato foliage in several counties in southern New Jersey. Treat when mines first appear, then every 7-10 days as needed with AgriMek 0.15EC, dimethoate 4EC, SpinTor 2SC, or Trigard 75WP. AgriMek, Trigard and SpinTor will also control **Colorado potato beetle** adults and larvae. □

Distribution of Adult European Corn Borer for the Week Ending August 4, 1999



Distribution of Adult Corn Earworm for the Week Ending August 4, 1999



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

Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
Plant & Pest Advisory
18 College Farm Road
Cook College
New Brunswick, N.J. 08901-8551

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION CONTRIBUTORS

Rutgers Cooperative Extension Specialists

Joseph A. Fiola, Ph.D., Small Fruit & Viticulture
Stephen A. Garrison, Ph.D. Vegetable Crops
Gerald M. Ghidui, Ph.D. Vegetable Entomology
George Hamilton, Ph.D., Pest Management
Joseph R. Heckman, Ph.D., Soil Fertility
Stephen A. Johnston, Ph.D. Plant Pathology
Bradley A. Majek, Ph.D. Weed Science

Rutgers Cooperative Extension County Agricultural Agents

Atlantic, Richard W. VanVranken (609-625-0056)
Burlington, Raymond J. Samulis (609-265-5050)
Cumberland, Wesley Kline, Ph.D. (609-451-2800)
Gloucester, Michelle Infante (609-863-0110)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Mercer, Daniel Kluchinski (609-989-6830)
Middlesex, William T. Hlubik (732-745-3443)
Monmouth, Bill Sciarappa, Ph.D. (732-431-7260)
Morris, Peter J. Nitzsche (973-285-8300)
Salem, Peter R. Probasco (609-769-0090)
Warren, William H. Tietjen (908-475-6505)
Vegetable IPM Program (732-932-9802)

Joseph Ingerson-Mahar, Vegetable IPM Coordinator
Kristian E. Holmstrom, IPM Program Associate
Sarah Walker, IPM Program Associate

Newsletter Production

Jack Rabin, Assistant Director, NJAES
Cindy Rovins, Editor and Designer
Mary Ann Hughes, Assistant Editor

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