

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

SEPTEMBER 13, 2000

IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Corrected version.

Sweet Corn

Adult corn earworm (CEW) numbers have rebounded somewhat this week, after cooler evening temperatures late last week suppressed moth activity. In most areas of the state, trap catches are in the moderate to high range (see CEW map). Strict silking spray schedules should be followed to prevent excessive ear damage by CEW. The darkest portion of the CEW map indicates a 2-day spray schedule, and the next lighter shade indicates a population warranting a 3-day spray schedule. Growers may relax these schedules slightly if Warrior is used as a silk spray.

The highest average nightly CEW blacklight trap catches are:

Shirley	48	Centerton	18	Milltown	11
Medford	38	Belvidere	16	Denville	10
Seabrook	30	Chapel Heights	14	Pedricktown	10
Elmer	19	Pemberton	12	Seeley Lake	10

European corn borer (ECB) adult catches have been low to moderate in central and northern counties, with much higher catches occurring in parts of Cumberland and Salem Counties (see ECB map). Silk spray schedules should prevent ear damage from this pest.

The highest average nightly ECB blacklight trap catches are:

Shirley	30	Cohansey	8	Upper Pittsgrove	6
Seabrook	12	Woodstown	8	Mullica Hill	4
Elmer	10	Chapel Heights	7	Tabernacle	4
Centerton	10	Burlington	6	Belvidere	3

General Sweet Corn Spray Schedule

Silking corn: North 3 day
 Central 2 - 3 days
 South 2 - 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.

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Tomatoes

The tomato fruitworm (CEW) population continues to be high enough in many parts of the state to cause economic damage. While CEW moth catches continue to exceed 10 per night in your area, it is advisable to treat tomato plantings with insecticides on a preventive basis.

Powdery mildew of tomatoes has been spotted in one Morris County field. This disease looks much like powdery mildew infections in other crops. It is capable of causing rapid defoliation, but is typically controlled by the regular fungicide program recommended for preventing early blight. See the *2000 Commercial Vegetable Production Recommendations* for the specific fungicide program.

Snap and Lima Beans

ECB and CEW adult blacklight trap counts are moderate to high in the southern counties (see ECB and CEW maps). For lima bean fields, sample weekly for the presence of CEW larvae and consider treatments if one CEW larva is found per 6 foot of row. For processing beans in the Salem and Cumberland County areas, a 4-6 day spray schedule is needed from the pin treatment to harvest based on the ECB blacklight trap counts. Make sure to use materials that are effective for both CEW and ECB. For fresh market beans, a weekly schedule with materials targeting both CEW and ECB should be sufficient from the pin stage through harvest.

Cole Crops

All three cole crop pests, cabbage looper (CL), diamondback larvae (DBM), and imported cabbageworm (ICW) can be found now. Garden State Pest Management reports very high infestation levels in some Monmouth County fields. In addition, small beet and yellow striped armyworm larvae were found in a Burlington County field of processing collards last week. Check 5 plants in 10 locations and consider treating fields when 20% of broccoli, cabbage, or cauliflower plants are infested with any larvae prior to heading, or when 5% of these plants are infested and heads are present. For the leafy greens, consider treating fields when 10% of the plants are infested with any larvae. While scouting these crops, look for dark sunken lesions on older leaves caused by alternaria. These lesions will enlarge to form the more characteristic brown spot with dark concentric rings. Downy mildew of crucifers may also be present. Look for yellowish blotches on the upper surface of the leaf with pale downy growth underneath. Begin a preventive fungicide program if either of these diseases is present. See the *2000 Commercial Vegetable Production Recommendations* for the specific fungicide program.

Lettuce

Blacklight trap levels of adult CEW remain at moderate to high levels in most areas of the state (see CEW map). The cool nights at the end of last week significantly dropped CEW adult levels, but the population rebounded this week as the temperatures increased. Scout fields regularly for the presence of CEW larvae and consider treatment if 1 CEW is found on 30 plants (check 5 consecutive plants in 6 locations in the planting). The critical time for control is prior to head formation.

Peppers

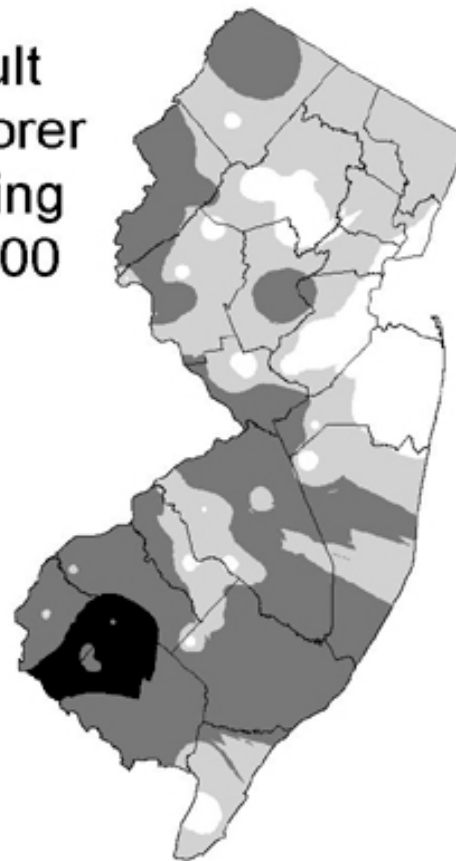
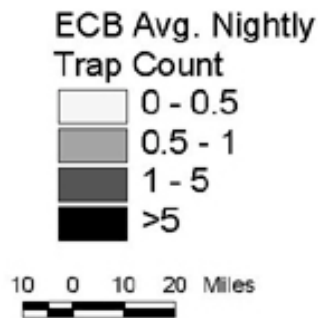
The ECB adult population is variable around the state, with locally high populations still occurring in some areas (see ECB map). New egg masses were found in a field in Salem County at the end of last week, and larval infestations in fruit have been found recently in Sussex, Morris and Warren Counties. CEW adult blacklight trap counts are moderate to high (see CEW map). A weekly preventative schedule is needed to minimize fruit infestations from both of these pests. In areas where both CEW and ECB are high make sure to select materials that will control both pests.

Spinach

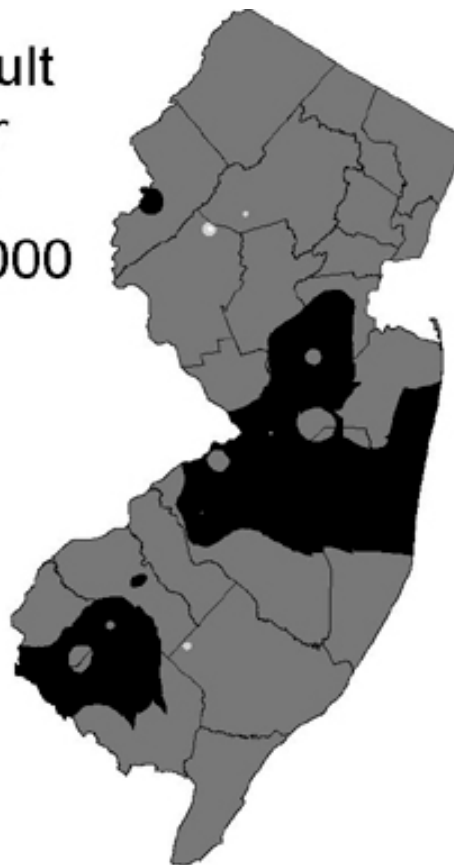
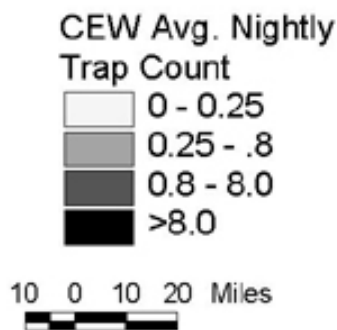
Soon after plant emergence begin monitoring fields for the presence of beet armyworm (BAW), CL, and webworms. Small BAW and CL larvae were found in a processing spinach field in Burlington County. Suggested threshold guidelines are to treat when 5% of the plants are infested with small webworm larvae or 1 BAW larvae is present per 10 plants. BAW pheromone traps have been placed in processing greens fields in Burlington and Cumberland Counties. At this time the BAW population is fairly low in these traps.

SEE ECB AND CEW DISTRIBUTION MAPS ON PAGE 3

Distribution of Adult European Corn Borer for the Week Ending September 13, 2000



Distribution of Adult Corn Earworm for the Week Ending September 13, 2000



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

Vegetable Crops Diseases

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

✓ Asparagus: Gray mold is severe in young fields at this time. Infected ferns turn brown and leaflets are clustered together on branches. Monitor fields for the presence of rust. For control of both diseases make applications of mancozeb every 7-10 days. Controlling gray mold & rust is important to minimize stress on the field, which will reduce the incidence of Fusarium root & crown rot.

✓ Bean (snap & lima): Maintain applications of a copper fungicide (Champ 2F, Kocide 2000, etc.) every 7 days on lima bean fields for control of downy mildew.

✓ Beet: Maintain applications of a copper fungicide every 7-10 days for the control of leaf spot.

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

✓ Cole crops: Maintain applications of Bravo or maneb every 7-10 days for protection against Alternaria leaf spot & downy mildew.

✓ Cilantro: Bacterial leaf spot is present in some fields at this time. Infected leaves contain numerous angular-shaped, dark lesions. Avoid working in the fields while the foliage is wet.

✓ Cucumber: Anthracnose is present in fields at this time. Numerous circular tan lesions with dark brown borders are scattered over the leaves. Infected leaves soon die. Maintain applications of Bravo + Benlate or Topsin alternated with Quadris for control. In some fields leaves are scorched between the veins, or have extensive white areas present. This is the result of environmental stress & windburn and is not a disease.

✓ Eggplant: Apply a copper fungicide + maneb with a spreader sticker every 7-10 days for control of Phomopsis & Phytophthora fruit rots.

✓ Fenugreek: Damping-off caused by Rhizoctonia is present in new seedlings at this time. Infected seedlings fall over and several distinct, sunken, brown lesions are present on the stem beneath the soil line. No control measure is available at this time. For future seedlings make sure previous crop debris and weeds are completely broken down and plowed under prior to seeding.

✓ Greens (Mustard, Turnip): Scout fields for the presence of downy mildew. Once observed apply a copper fungicide or Aliette every 7-10 days for control.

✓ Horseradish: Leaf spot is severe in some fields at this time. Infected leaves have petioles that contain numerous elliptical lesions with black borders and gray centers. No fungicides are labeled for control.

✓ Leeks: Maintain applications of Bravo every 10 days for control of purple blotch.

✓ Lettuce: Beginning one week after thinning, apply Ronilan or Rovral as a directed spray to the base of the plants and surrounding soil, and repeat 10 and 20 days later for control of Drop. Rovral will also provide control of bottom rot.

✓ Muskmelon: Downy mildew is severe in unsprayed fields at this time. Infected leaves completely desiccate and hang from the petioles. Applications of Bravo alternated with Quadris every 7 days are necessary for protection.

✓ Pepper: Maintain applications of a copper fungicide + maneb with a spreader sticker every 7 days for control of anthracnose & Phytophthora blight.

✓ Pumpkin & winter squash: Downy mildew is severe in unsprayed fields at this time. Infected leaves are completely necrotic and hang limp from upright petioles. Entire fields are infected. For fields with leaves still present, maintain applications of Bravo + Nova + a copper fungicide alternated with Quadris + a copper fungicide every 7-10 days for control of downy & powdery mildews and Phytophthora fruit rot. Once pumpkins are mature they should be removed from the field and placed under cover (building, shed, etc.) to minimize infection from Phytophthora fruit rot. A pumpkin is mature when the orange color is present and the rind is hard. If the rind slips when passing one's finger along the ribs, then it is immature and should not be harvested. Microdochium fruit rot is present in unsprayed fields or in fields where fungicide coverage was not satisfactory. Symptoms include numerous gray, scabby, bumps over the exposed surface of fruit.

✓ Squash (summer): Maintain applications of Bravo + Nova + a copper fungicide alternated with Quadris for control of downy & powdery mildews and Phytophthora fruit rot. Mosaic viruses are present on leaves and fruit at this time. Infected leaves are severely distorted, and fruit are distorted and have green areas scattered throughout. Control measures involve producing the crop on reflective mulch to prevent transmission of the viruses to plants by aphids.

✓ Spinach: Apply mefenoxam (Ridomil Gold, Ultra Flourish) as a soil surface application shortly after seeding for control of damping-off and early season control of white rust. For older fields, scout for the presence of white rust. Once observed, apply Quadris as a foliar spray at the rate of 9.2 – 12.4 fl oz/A and repeat every 7-10 days for a total of no more than 3 applications consecutively.

SEE DISEASES ON PAGE 5

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged below normal. Extremes were 89 at Pemberton on the 10th and 36 degrees at Charlotteburg on the 7th. Weekly rainfall averaged 0.16 inches north, 0.29 inches central, and 0.22 inches south. The heaviest 24 hour total reported was 0.91 inches at Hammonton on the 4th to the 5th. Estimated soil moisture, in percent of field capacity, this past week averaged 73 percent north, 73 percent central and 64 percent south. Four inch soil temperatures averaged 65 degrees north, 68 degrees central and 69 degrees south.

Weather Summary for the Week Ending 8 am Monday 9/11/00										
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.00	30.62	4.73	88	43	64.	-1	2358	-6	55
CANOE BROOK	.52	26.80	-.36	86	41	64.	-1	2541	153	87
CHARLOTTEBURG	.02	24.63	-2.80	86	36	60.	-2	1908	10	56
FLEMINGTON	.12	26.92	.87	86	44	65.	-1	2582	132	73
LONG VALLEY	.12	26.34	-1.85	80	42	60.	-3	2098	-9	64
FREEHOLD	.40	20.98	-4.39	86	47	66.	-1	2780	188	66
LONG BRANCH	.35	29.01	3.30	83	49	65.	-2	2542	8	70
NEW BRUNSWICK	.19	26.21	.51	88	46	65.	-2	2698	-32	78
PEMBERTON	.34	24.63	-1.42	89	42	67.	-1	3214	552	57
TOMS RIVER	.26	25.92	-.35	86	45	65.	-4	2685	151	55
TRENTON	.20	21.58	-2.77	88	48	66.	-2	2763	-66	52
CAPE MAY COURT HOUSE	.38	23.93	1.19	83	51	67.	-3	2798	262	44
DOWNTOWN	.04	24.03	.07	86	44	66.	-3	2905	67	35
GLASSBORO	.00	26.33	1.26	86	49	65.	-4	3040	224	70
HAMMONTON	.91	24.00	-1.06	86	44	66.	-2	2809	-8	69
POMONA	.11	29.86	6.91	84	47	65.	-2	2740	112	47
SEABROOK	.00	25.74	2.76	88	48	66.	-3	3014	161	43
ATLANTIC CITY MARINA	.13	29.21	7.16	82	60	69.	0	2845	264	64
SOUTH HARRISON	.04	27.66	3.04	85	49	67	NA	2973	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week 265 (Ending 9/04/00)										
This Week 186 (Ending 9/11/00)										

DISEASES FROM PAGE 4

✓ Tomato: Defoliation is common in plantings with too few fungicide applications or where improper fungicide coverage was achieved. Early blight & Septoria leaf spot are the primary diseases that are causing the defoliation. Anthracnose is present on ripe fruit at this time. Infected fruit contain numerous circular sunken lesions with dark centers. Maintain applications of Bravo alternated with Quadris every 7 days for control of foliar & fruit diseases. □

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