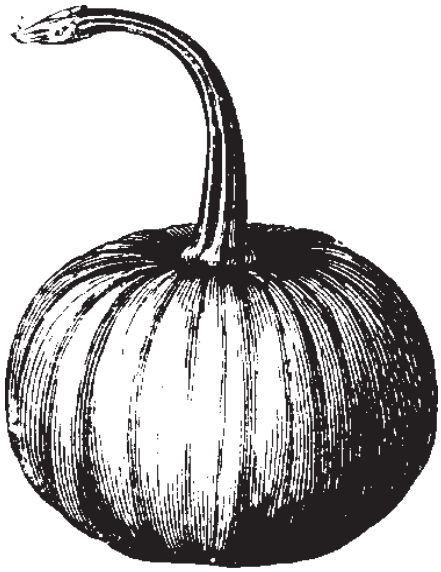
RUTGERS COOPERATIVE EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION $1.50 SEPTEMBER 9, 1998



INSIDE

Postharvest Handling of Pumpkins

Wesley Kline, Rutgers Cooperative Extension of Cumberland County

Pumpkins are maturing earlier this year than usual. This presents a problem for growers to keep pumpkins for the Halloween market. One option is to sell them immediately which some growers are starting to do. That is great if there is a sufficient market. Another option is to leave them in the field, but if it rains too much the fruit may rot. The other option is to cure and store the fruit for later sale. Every pumpkin field I have seen is turning color, which means there may be a shortage of pumpkins as we get closer to Halloween and especially Thanksgiving.

If pumpkins are to be stored, remove them from the field as soon as they are mature. Only disease-free, mature fruit should be stored, since anything else will breakdown and cause other fruit to be ruined. Pumpkins are chilling-sensitive and may sustain cold damage at temperatures below 50°F. Chilling injury is cumulative and depends on both temperature and time. In other words, the number of hours required to induce injury at 35°F would be considerably less than the number required at 45°F. The hours add up, whether from the field or storage. The injury may not show up until the fruit is stored for an extended period or on the way to market.

Handle fruit with care during harvest to prevent injury. Pad wagons or bulk boxes used for transport to reduce pressure injury, rubbing and other mechanical injury. Once the fruit is damaged, secondary organisms can enter, causing breakdown. Cut the fruit from the vines to insure good handles and to minimize leaking fluid from the scar. Long-handled pruning shears can be used to avoid stooping. Once the fruit has been harvested, spraying or wiping a bleach solution (5.5 pints bleach to 10 gallon of water) on the fruit surface can reduce surface contamination with spores of molds and rots. Let the fruit dry completely before storing.

Proper curing will heal injuries and extend the fruit shelf life. If the pumpkins are to be used for making pies, high temperature (80-85°F) and relative humidity (80%) curing after harvest for two to three weeks converts starch to sugar, improving the eating quality. However, high temperature curing can shorten the storage life.

Do not store pumpkins near apples or in old apple storage. Apples give off ethylene gas, which speeds up the ripening process. Store the fruit at 50-55°F with a 50-70% relative humidity. This should translate

SEE PUMPKINS ON PAGE 2

Pumpkins from page 1

into an 8-12 week storage life. Storing pumpkins during warm weather can be a challenge. To improve storage life, move cool air into the storage during the night. This air does have higher relative humidity, but it is more important to have cooler temperature than to have lower humidity. During the day, keep air moving with fans without drawing warm, day-time air into the storage. Temperature in the storage will rise during the day as field heat comes out of the product, which results in lower relative humidity. Small lots of pumpkins can be stacked on pallets to allow air movement under and through the pile. If air can not flow through the pile, the chances for rotten fruit increases. Make sure the piles are protected from rain or they will breakdown more quickly.

The longer the pumpkins are to be stored the more critical it is to check the fruit on a regular basis. Once a fruit starts to rot it can cause neighboring fruit to breakdown. ❑

Vegetable Crops Diseases

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

✔**Asparagus:** Maintain applications of mancozeb as a foliar spray every 7-10 days for control of **rust.**

✔**Carrot:** Maintain applications of Bravo every 7-10 days for the control of **leaf blights.**

✔**Cilantro: Magnesium deficiency** is present in some fields at this time. Plants have interveinal chlorosis of lower leaves. Apply epsom salt to deficient fields to remedy the situation.

✔**Cole crops: Bacterial head rot** is present on broccoli raab at this time. Infected heads have black necrotic areas present. The disease is favored by moisture and hot temperatures. Schedule irrigation late in the day to avoid leaving moisture on the heads during the hot temperature periods of the day to reduce incidence. **Rhizoctonia stem canker** is present in several fields of cabbage at this time. A black, girdling stem lesion appears at or near the soil line. Use of Terraclor at planting will assist in control for future plantings. **Downy mildew** is present on numerous cole crops, including collards at this time. Maintain applications of maneb or Bravo every 7-10 days for the control of **Alternaria leaf spot** and **downy mildew.**

✔**Cucumber:** In fields where **angular leaf spot** is present, apply a copper fungicide + mancozeb as a foliar spray every 7 days for control, and do not work in fields while the foliage is wet. In other fields, maintain a 7- to 10-day schedule with Bravo + Benlate or Topsin M for control of **foliar diseases.**

✔**Eggplant:** Maintain foliar applications of a copper fungicide + maneb + a spreader sticker every 7-10 days for control of **Phomopsis & Phytophthora fruit rots.**

✔**Leeks: Purple spot** is present in several fields at this time. Elliptical tan lesions are scattered over the

Vegetable Crops Diseases, continued

lower leaves. Be sure to supply ample amounts of nitrogen to encourage vigorous leaf growth and maintain foliar applications of Bravo with good coverage for control. **Bacterial soft rot** is present in some fields. Infected plants have large, watery tan lesions along the basal stalk, and plants wilt. This is the result of heavy wind driven rains and hot weather. Less disease should occur now that cooler weather has arrived.

✔**Lettuce:** Apply Ronilan or Rovral as a directed spray to the base of the plants and surrounding soil after thinning, 10 and 20 days later for control of **drop (Sclerotinia).** Use of Rovral will also control **bottom rot (Rhizoctonia).**

✔**Methy (herb): Damping-off** caused by **Rhizoctonia** is present in some plantings at this time. The disease is favored by warm, wet weather during and shortly after emergence. Less disease should occur in future seedings now that cooler weather is present.

✔**Pepper:** Maintain foliar applications of maneb + a copper fungicide + a spreader sticker every 7-10 days for control of **bacterial leaf spot & Phytophthora blight.**

✔**Potato (Sweet):** Avoid bruising during harvest, and cure potatoes as soon as possible after harvest to reduce incidence of **Fusarium surface rot & soft rot.** Cure roots at 80-85°F and 90% relative humidity for 6-8 days. After curing, temperature should be lowered to 55°F, and maintain relative humidity at 85%.

✔**Pumpkin & Winter Squash: Bacterial wilt** has been prevalent this year. Infected plants completely wilt. The disease is spread by **cucumber beetles**, and control of the **beetles** early in the season is essential for control. **Powdery mildew** is prevalent at this time and is resulting in defoliation in unsprayed fields. Maintain applications of Bravo + a copper fungicide every 7-10 days for control of **foliar & fruit diseases.**

✔**Spinach:** Apply Ridomil Gold 4E in a 7-inch band over the row immediately after seeding for control of **damping-off** and early season control of **blue mold & white rust.**

✔**Squash (Summer): Mosaic virus** fruit infection is present in some fields of zucchini. Infected fruit have mottled areas of light and dark green present making the fruit unmarketable. Infection is from transmission by **aphids.** All fields seeded after July 1st should be planted through reflective mulch to prevent aphid transmission, or be located away from existing cucurbit fields. Now that night temperatures on some days are in the fifties, **scab** can appear on fruit. Infected fruit will have numerous small, water-soaked circular lesions that are pitted. Maintain foliar applications of Ridomil/Bravo every 14 days; and on alternate 14 days, apply Bravo alone for control of **Phytophthora blight & scab.**

✔**Tomato:** Maintain applications of chlorothalonil every 14 days, and on alternate 14 days apply Quadris. Quadris has a 24C registration in New Jersey for a 1-day preharvest interval. ❑

Pest Notes

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

✔**Cucurbit:** The NJ Department of Environmental Protection, in cooperation with the US Environmental Protection Agency, has granted FMC Corp. a special, local needs registration for the use of Furadan 4F for use in cucurbits (cucumber, melons, squash, pumpkins) to control **striped** and **spotted cucumber beetles** and **nematodes**. This is a continuation of a previous label that was due to expire this year. Apply 3.8 fl. oz. of Furadan 4F per 1,000 linear feet of row at planting, either directly into the seed furrow or as a 7-inch band over the row.

✔**Lettuce: Thrips** have been monitored in lettuce fields. Although there is no threshold for **thrips** in lettuce, **thrips** feeding can cause direct damage to the plants and transmit plant viruses throughout the crop. Also, they are a contaminant as they hide between the lettuce leaves. Ammo and Lannate are labeled and control **thrips** in lettuce. Also, Spintor EC is labeled in lettuce for **loopers** and other **worms**, and will also control **thrips**. Use high volume, high pressure to ensure adequate coverage for maximum **thrips** control.

✔**Pepper:** Fields throughout southern New Jersey show increasing damage by **beet armyworms**. Feeding is generally observed first on the leaves, and appears as numerous small to large holes in the leaves. As feeding increases, leaves appear almost shredded. The **fall armyworms** may also enter the fruit, and damage to the fruit can be extensive. Asana XL, Baythroid 2E and Lannate are the most effective materials for control of **beet armyworm** in pepper. **Note** that both Baythroid and Asana have a 7-day pre-harvest interval, while Lannate is a 3-day interval. ❑

Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 95 degrees at Pemberton on the 7th and 52 degrees at Long Valley on the 4th. Weekly rainfall averaged 0.57 inches north, 0.49 inches central, and 0.57 inches south. The heaviest 24 hour total was 0.83 inches at Hammonton on the 3rd to the 4th. Estimated soil moisture, in percent of field capacity, this past week averaged 77 percent north, 54 percent central and 45 percent south. Four inch soil temperatures averaged 70 degrees north, 73 degrees central and 74 degrees south.

Weather Summary for the Week Ending 8 a.m. Monday 9/ 7/98

	RAINFALL			TEMPERATURE			GDD BASE50		MON	
WEATHER STATIONS	**WEEK**	**TOTAL**	**DEP**	**MX**	**MN**	**AVG**	**DEP**	**TOT**	**DEP**	**%FC**
BELVIDERE BRIDGE	.73	31.62	6.27	86	54	69.	3	2623	319	73
CANOE BROOK	.40	29.00	2.42	93	54	72.	6	2999	674	67
LONG VALLEY	.57	31.18	3.56	84	52	67.	3	2362	308	74
LONG BRANCH	.47	33.90	8.68	89	60	71.	3	2689	226	51
NEW BRUNSWICK	.63	29.12	3.94	93	55	71.	2	2884	226	70
PEMBERTON	.17	22.87	-2.69	95	53	74.	6	3094	504	28
TOMS RIVER	.75	36.31	10.55	93	58	74.	4	2970	514	54
TRENTON	.42	26.44	2.58	92	54	70.	1	2787	33	46
CAPE MAY CRT HSE	.45	23.36	1.07	90	62	74.	3	2969	515	34
DOWNSTOWN	.45	23.35	-.17	89	59	73.	3	3059	297	40
HAMMONTON	1.22	21.44	-3.13	94	57	73.	4	3028	286	60
POMONA	.32	25.31	2.74	93	57	74.	6	3008	451	45
SEABROOK	.33	25.64	3.11	90	60	74.	4	3215	438	36
ATLANTIC CITY MRNA	.66	26.75	5.06	89	66	75.	5	3012	507	52
WOODSTOWN	1.04	25.01	0.83	92	55	73	NA	3235	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
		Last Week		280 (Ending 8/31/98)						
		This Week		231 (Ending 9/7/98)						

Vegetable IPM Update

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

Lima and Snap Beans

Both **European corn borer (ECB)** and **corn earworm (CEW)** adult blacklight trap counts are moderate to high in the southern counties. Both pests continue to be a potential threat to fresh market and processing snap bean fields. See page 72 of the 1998 Commercial Vegetable Production Recommendations book for the recommended spray schedule based on your local blacklight trap counts.

Monitor lima bean fields for the presence of **CEW** larvae and consider treatment if the number of larvae exceed 1-2 per 6 feet of row.

Peppers

While trap counts of adult **CEW** are dropping in comparison to the high counts from last week, trap counts of **ECB** and **fall armyworm (FAW)** adults remain moderate to high in the southern counties. The cooler nights should slow overall pest activity, but the heavy insect pressure from last week will result in high larval numbers this week. In the field, **FAW** eggmasses were easily found this week in Atlantic County. In the unsprayed research plots **ECB** continues to be the major pest and damage is high relative to this time last year.

Spinach

Scout spinach fields regularly for the presence of **beet armyworms (BAW)**, **webworms**, and **cabbage loopers (CL)**. All three of these pests were found in an early fall planting in Burlington County, and the Delaware IPM Program is also reporting activity, particularly by the **webworms**. Check 10 plants in 10 random locations in the field. Consider treatment if the percent of plants infested with live worms exceeds 5%.

Sweet Corn

In the southern and central regions, adult catches of **ECB** remain moderate to high. In the northern counties, **ECB** trap catches have dropped off to low numbers. This occurrence may be due to cool night temperatures, and may be only temporary.

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

Shirley	46	Burlington	14
Centerton	39	Medford	13
Rosenhayn	36	Mullica Hill	13
Cohansey	34	Shiloh	11
Allentown	15	Cedarville	10
Chapel Heights	15	Hammonton	8

Trap catches of adult **CEW** have declined somewhat over the last several days, largely as a result of cooler weather. The population is still sufficiently high in all areas of the state to cause significant damage to silking sweet corn plantings. Maintain silk spray schedules as appropriate for your area.

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

Shiloh	42	Cedarville	8
Hancock's Bridge	22	Crosswicks	7
Medford	21	Pemberton	7
Sheppards Mill	21	Elm	6
Cranbury	11	Milltown	6
Springdale	9	Mullica Hill	5

FAW is still the most significant threat to whorl and pretassel stage sweet corn. Reinfestation is occurring within a week of the last insecticide application. Continue to scout fields for **FAW** and treat when 12% or more plants are infested with **FAW** and/or **ECB**.

General Sweet Corn Spray Schedule

Silking stage:	North	3 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. ❑

Renovated Strawberries on Plastic

Peter Probasco, Agricultural Agent of Salem County

Old fields of strawberries on plastic will need fertilizer now for the coming season. Apply 60 pounds of N, P, and K through the drip irrigation this month. The weeds in the middles can be sprayed with a shielded sprayer to burn off existing weeds. Devrinol 50DF and Sinbar 80WP should be sprayed in the middles once you have removed the existing weeds.

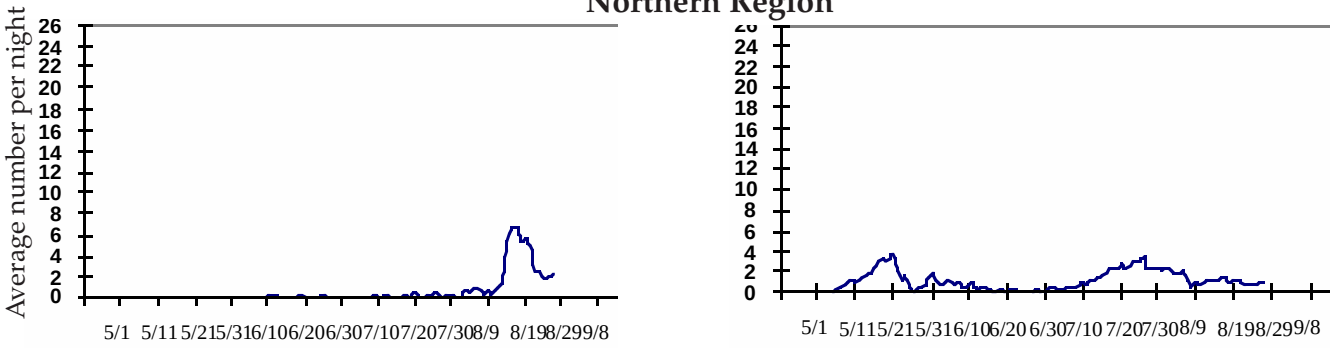
A properly renovated strawberry field should be putting out new leaves now and will need to be sprayed for **leaf spots** with either Benlate, Syllit or Topsin M. The field should be covered with a floating row cover in November like you would a new field. ❑

Blacklight Trap Catches

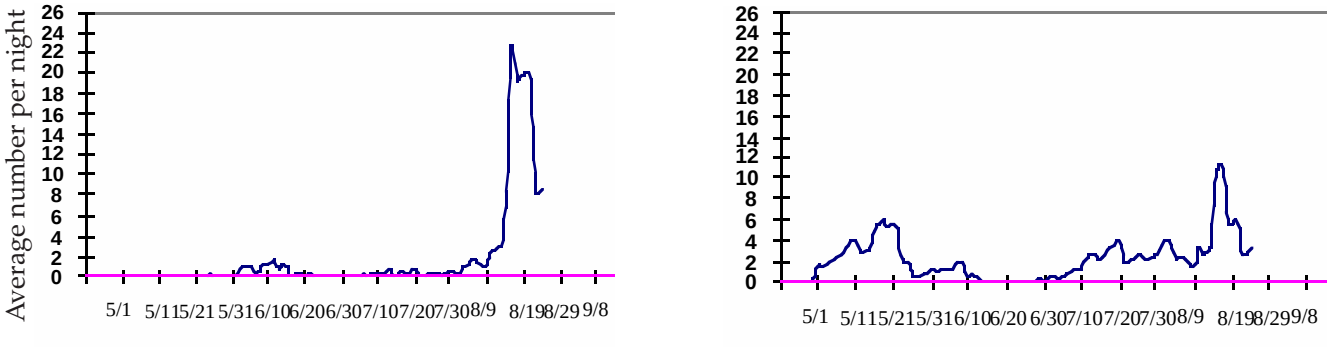
Corn Earworm

European Corn Borer

Northern Region



Central Region



Southern Region