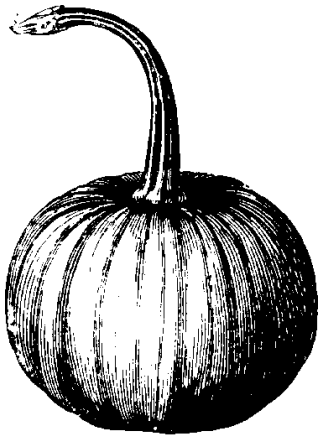
RUTGERS COOPERATIVE EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION $1.50 OCTOBER 6, 1999



INSIDE

Note: This is the last issue of the Vegetable Crops edition for the '99 season. Thank you for subscribing.

Vegetable Crops Diseases

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

✔ **General:** There are a number of cultural practices that should be conducted this fall and winter that will reduce disease incidence on various vegetables in the 2000 growing season. Care should be taken to perform the following tasks:

- *Destroy previous crop debris*: At the completion of the harvest period, the crop should be mowed or disced heavily and incorporated into the soil. Once incorporated into the soil, soil microorganisms will breakdown plant disease-causing fungi and bacteria. Thereby, inoculum levels will be low at the start of the 2000 growing season, and disease occurrence will be minimal.
- *Clean and treat wooden stakes*: Stakes used in staked tomato and pepper operations should be removed from the field, and washed to remove plant debris and soil. Following washing, stakes should be dipped into a chlorine solution or tarped and treated with methyl bromide to destroy plant pathogenic fungi and bacteria.
- *Collect soil samples for nematode assay*: Now is the time to collect soil samples from fields where vegetables such as carrots, cucurbits, and solanaceous crops will be grown in 2000. Soil samples should be submitted to the Plant Diagnostic Laboratory in New Brunswick to be assayed for plant parasitic nematodes. Contact the lab at 732-932-9140 or call RCE's FaxInfoLine at 732-932-6767 and request document 3604, Plant Diagnostic Lab Form for Commercial Growers and document 3606, Proper Sampling of Soil & Plant Tissue for Nematodes FS 757.
- *Soil fumigate fields*: Fields that are infested with plant parasitic nematodes or soilborne fungi, such as Phytophthora, Pythium, Rhizoctonia, and Verticillium, and where susceptible vegetable crops will be grown in 2000 should be fumigated this fall. Moldboard plow the field to completely bury the previous crop debris, and prepare the soil for seeding. Fields can be fumigated until the soil temperature drops below 50°F. In the spring be sure not to till the field below the level of the soil fumigation equipment in order not to bring untreated soil to the soil surface.
- *Construct drainage ditches and level fields*: For fields in which solanaceous or cucurbit crops will be grown in 2000, be sure all low lying areas are drained, and the field is leveled. Create drainage areas at the ends of the field. Improving the drainage will reduce the incidence of Phytophthora blight.

SEE DISEASES ON PAGE 3

IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Cole Crops

Imported cabbage worms (ICW), **cabbage loopers (CL)**, and **diamondback moth larvae (DBM)** continue to be a significant threat to all cole crops throughout the state. Fields should be scouted weekly for the presence of these pests. Select 5 consecutive plants in 10 random locations throughout the field. When scouting, be sure to look beneath the leaves and at the innermost portion of the plants, as this is where worms are often found. For heading type cole crops, the threshold is 20% of plants infested with one or more worms prior to heading, and 5% of plants infested with heads present. For leafy type crops, the threshold is 12% of plants infested with any worm.

DBM can be difficult to control, and some fields continue to be infested with them after **CL** and **ICW** have been eliminated with insecticides. It is important to distinguish between the three types of larvae, particularly if control is not satisfactory. While **ICW**, **CL**, and **DBM** are all green in color, **ICW** has an overall velvety appearance where the others appear hairless. **CL** has the appearance of an inchworm in that it "loops" while moving, rather than creeping as the others do. Both **ICW** and **CL** are approximately 1" – 1 1/2" when fully grown. **DBM** are approximately 1/2" when fully grown. They wriggle violently and often spin threads from which they hang when disturbed. The adult **DBM** is a very small moth, and may look like a leafhopper unless observed closely. If this insect is present on cole crops and control has been difficult, consider switching to some of the newer insecticides now available. Consult the *1999 Commercial Vegetable Recommendations* for specific products.

Check fields for **downy mildew** and treat at the first sign of infection. Cool wet weather promotes this disease. Look for white sporulation on the undersides of the leaves when the leaves are wet, and yellow or brown irregular patches on the tops of the leaves.

Lettuce

The **corn earworm (CEW)** adult population levels increased this past week, likely due to the warmer weather over the weekend. The cooler nights should again reduce the adult population levels for the end of this week. Cooler weather will slow egg hatch and feeding, but infestations may still occur in some areas (see sweet corn section for local trap counts). Continue to monitor plantings weekly for the presence of larvae and control infestations prior to head formation. The suggested threshold is 1 larva per 30 plants.

Peppers

The **CEW** adult population increased over the past weekend, but the cooler nights should drop counts again. The cooler weather will slow egg laying and larval development for the worm pests of pepper and economically damaging levels are not expected for the rest of the season. However, check fields for the presence of **phytophthora** and consider maintaining regular fungicide treatments to reduce the fruit rot phase of this disease.

Spinach

Scout fields regularly for the presence of **beet armyworms (BAW)**, **webworms**, and **CL**. Adult **BAW** and **CL** activity in pheromone traps increased over this past weekend, but egg laying and larval development will be slower as a result of the cooler weather. Larvae can be found in some fields but the infestations have not been at threshold levels. Check 10 plants in 5 to 10 locations and consider a treatment if 5% of the plants are infested with small larvae.

Sweet Corn

The **European corn borer (ECB)** adult population has declined to levels below 1/night in most traps in the southern counties. Catches of adult **CEW** moths have decreased significantly in most southern traps, but are still at levels that require regular silking spray schedules. For most of the state a 3-4 day silking spray schedule should be adequate for any remaining sweet corn. The highest average nightly **CEW** blacklight trap catches for the southern counties are:

Hammonton	11	East Vineland	6	Medford	2
Folsom	9	Seabrook	5		
Indian Mills	8	Shirley	5		
Elm	7	Burlington	3		

Spinach and Greens Production Workshop Planned

Stephen A. Garrison, Ph.D., Specialist in Vegetable Crops

Rutgers Cooperative Extension and Seabrook Brothers and Sons will host a spinach and greens production workshop on Tuesday, December 14, 1999, at the Rutgers Agricultural Research & Extension Center, Upper Deerfield, NJ. The program will emphasize processing crops, but fresh market varieties and culture will also be covered.

Varieties, production practices, disease problems, insect and weed control will be discussed by guest speakers, growers, and specialists.

Growers, Agents, Specialists, and agricultural industry representatives are invited to attend.

Lunch will be provided at no charge, and preregistration is required. Please reserve this date now. Additional information and preliminary program will be available in October. For information contact: Dr. Stephen Garrison, (856) 455-3100, or garrison@aesop.rutgers.edu. ❑

DISEASES FROM PAGE 1

- *Clean and sanitize greenhouses*: Remove all plant debris from greenhouses that will produce vegetable transplants next spring. Use a disinfectant on all surfaces to destroy populations of plant pathogens. For soil beds, fumigate this fall and cover the greenhouse to prevent reinfestation by plant pathogens.

✔ **Asparagus:** Once the brush turns brown, completely mow the field. Incorporate the mowed brush into the soil to promote breakdown of the crop debris to reduce the incidence of **purple spot** during the 2000 growing season.

✔ **Cole Crops: Downy mildew** is active on collards and other greens at this time. Maintain fungicide applications for control.

✔ **Carrot:** One more fungicide application is warranted at this time for control of **leaf blights.**

✔ **Potato (Sweet):** Use care in harvesting to avoid injury to the potatoes. Cure potatoes as soon as possible (within 1 hour) at 80-85°F and 90% relative humidity for 6-8 days to prevent **storage rots** from developing. After the curing period, reduce the temperature to 55°F and maintain the relative humidity at 85%.

✔ **Spinach:** Observe fields for the presence of **white rust.** Once observed, apply a copper fungicide at the lowest labeled rate. For fields close to harvest, apply Aliette for control.

✔ **Squash (Winter):** Maintain the storage facility at 55°F and 55% relative humidity to reduce the development of **black rot.** Temperatures below 50°F will result in a high incidence of the disease. ❑

Farm Markets Accepting Food Stamps

Zane R. Helsel, Director, Rutgers Cooperative Extension

At a recent State Food and Agriculture Council meeting USDA-Food Nutrition Service reported that the number of food stamp recipients has decreased in the state and coincidentally there have been no new farm markets accepting food stamps this year. All food stamp recipients are now using EBT cards. This means that farmers can have a card scanner at their market that will accept this card or they may simply phone in the number of the card to confirm its use. John Nagy (609-259-5150) is encouraging more growers who have farm markets to contact him to look at utilizing their farm markets as a point of sales for fresh fruits and vegetables, etc. for food stamp recipients. ❑

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 81 at Flemington and Canoe Brook on the 29th and 35 degrees at Charlotteburg on the 1st. Weekly rainfall averaged 1.14 inches north, 0.63 inches central, and 0.54 inches south. The heaviest 24 hour total was 1.10 inches at Charlotteburg on the 29th to the 30th. Estimated soil moisture, in percent of field capacity, this past week averaged 89 percent north, 77 percent central and 57 percent south. Four inch soil temperatures averaged 62 degrees north, 63 degrees central and 62 degrees south.

Weather Summary for the Week Ending 8 am Monday 10/ 4/99

	RAINFALL			TEMPERATURE				GDD BASE50		MON
WEATHER STATIONS	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	1.03	26.98	-1.92	76	42	62.	5	3064	428	95
CANOE BROOK	1.41	31.06	.66	81	41	65.	8	3435	783	97
CHARLOTTEBURG	1.15	29.26	-1.49	80	35	59.	4	2561	467	91
FLEMINGTON	.99	26.37	-2.62	81	41	63.	5	3193	474	85
LONG BRANCH	.60	22.69	-5.79	74	45	64.	4	3163	313	68
NEW BRUNSWICK	.65	27.67	-.95	80	43	64.	4	3366	330	89
PEMBERTON	.78	27.77	-1.02	80	39	64.	4	3465	487	78
TOMS RIVER	.47	14.54	-14.62	79	43	65.	6	3186	338	61
TRENTON	.63	31.57	4.52	80	41	63.	3	3115	-46	82
CAPE MAY COURT HOUSE	.57	17.56	-7.73	79	48	67.	4	3431	511	42
DOWNSTOWN	.46	26.57	.12	80	44	66.	5	3412	228	62
HAMMONTON	.44	25.45	-2.38	79	42	65.	5	3383	234	50
POMONA	.63	22.07	-3.00	80	44	67.	7	3374	449	63
SEABROOK	.44	30.02	4.46	80	46	66.	5	3586	381	69
ATLANTIC CITY MARINA	.67	24.38	.24	76	52	67.	5	3369	434	62
WOODSTOWN	.00	35.02	7.74	79	42	66	NA	3721	NA	NA

WES KLINE — GDD BASE 40 PINEY HOLLOW Last Week 157 (Ending 9/27/99) This Week 184 (Ending 10/4/99)

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