RUTGERS COOPERATIVE RESEARCH & EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION $1.50 MAY 24, 2006

White-tailed deer feeding damage on melon, Springdale Farms, Cherry Hill, NJ. Photo by Jack Rabin

INSIDE

Deer Fencing Available - Deadline Next Week

New Jersey Secretary of Agriculture Charles M. Kuperus announced that a Deer Fencing program will be run cooperatively by the New Jersey Department of Agriculture (NJDA) and Rutgers Cooperative Research and Extension.

The cost-share program will provide fencing material, plus up to 30 percent of the line posts at no cost to qualified farmers who were not awarded fencing in the 2004/2005 program.

"The deer fencing program is part of our effort to partner with the agricultural community to ensure the viability of New Jersey's farms," said Secretary Kuperus. "The fencing is an effective tool in keeping deer from damaging crops and allows farmers to benefit from higher yields."

This is the second year of the Department's deer fencing program. In 2005, fence, accompanying wire and posts were distributed to 100 farmers throughout the state.

A Rutgers Cooperative Research and Extension survey of farmers who participated in previous deer fencing programs indicated that almost 70 percent of wildlife crop loss is attributable to deer. The New Jersey Agricultural Experiment Station estimates the economic loss to farmers to be between $5 million and $10 million annually.

To participate in the program, farmers must meet these eligibility criteria:

- Farmers who were awarded fencing and materials in the 2004/2005 program are not eligible to participate
- Be a New Jersey farmer having documented proof of a minimum of $40,000 in sales of agricultural commodities produced by the applicant on a New Jersey farm or;
- Be a New Jersey certified organic farmer having documented proof of a minimum of $20,000 in sales of agricultural commodities produced by the applicant on a New Jersey farm
- Be the owner of the land or have documented proof of renting preserved farmland or farmland that is enrolled in an Eight-Year Farmland Preservation Program
- Complete a mandatory deer fence installation workshop sponsored by the NJDA and Rutgers Cooperative Research and Extension

Farmers who receive fencing and materials will be required to use the material solely for the purpose of keeping deer off their land and are prohibited from using the fence to contain equine, livestock, poultry, or

SEE DEER FENCING ON PAGE 2

Vegetable Disease Update

Andy Wyenandt, Ph.D., Specialist in Vegetable Pathology and Wesley Kline, Ph.D., Cumberland County Agricultural Agent

✔ **Collard/Turnip – Peppery leaf spot** - Symptoms of Peppery leaf spot include water-soaked spots that turn purplish-brown surrounded by yellow 'halos'. These lesions can be up to 1/8 inch and can join together turning leaves yellow and causing them to drop off. The pathogen can survive in the soil and on debris from previous crops. During cool, wet periods, the disease can become severe and be spread by splashing rain. Best management practices for control include i) start with clean seed ii) plant in clean beds and iii) use proper crop rotation of one year or more. If Peppery leaf spot has been a problem in the past, beds should be sterilized prior to planting.

✔ **Strawberry – Anthracnose fruit rot** - Strawberry anthracnose can be extremely destructive during warm, wet weather causing significant fruit rot. Symptoms of Anthracnose include blackish-brown circular spots on maturing green fruit and soft, sunken (flat) circular lesions on ripe fruit. On ripe fruit, lesions can expand rapidly and are often covered with a pinkish-orange spore mass. Spores are spread from infected to healthy fruit with splashing water. Control of Anthracnose always begins with a 7 to 10 day preventative spray program no later than 10% bloom and/or prior to disease development. For control apply the following combinations:
#1) captan (M3) at 4 lb 50WP/A plus Pristine (pyraclostrobin + boscalid, 11 +7) at 18.5 to 23.0 oz 38WG/A
#2) captan 5(M3) at 4 lb 50WP/A plus Abound (azoxystrobin, 11) at 6.2 to 15.4 oz 2.08F/A, or Cabrio (pyraclostrobin, 11) at 12 to 14 o 20EG/A
#3) Captevate (captan + fenhexamid, M3 + 17) at 3.5 to 5.25 lb 68WDG/A
For subsequent applications, alternate:
captan (M3) at 4 lb 50WP/A plus Abound (azoxystrobin, 11) at 6.2 to 15.4 oz 2.08F/A, or
Cabrio (pyraclostrobin, 11) at 12 to 14 oz 20EG/A with captan (M3) at 4 lb 50WP/A, or
Captevate (captan + fenhexamid, M3 + 17) at 3.5 to 5.25 lb 68WDG/A

To help manage fungicide resistance development, do not make more than 2 consecutive applications of either Pristine (pyraclostrobin + boscalid, 11 + 7), Cabrio (pyraclostrobin, 11) or Abound/Quadris (azoxystrobin, 11) before switching to another fungicide chemistry.

✔ **Strawberry – Botrytis (Gray Mold) and Blossom blight** – can cause serious losses in strawberry plantings if not controlled properly. Development is favored by moderate temperatures (59 to 77°F) with prolonged periods of high relative humidity and surface wetness. Control of Gray mold begins with preventative fungicide applications. Apply at 5 to 10 percent bloom and every 10 days until harvest. During periods of excessive moisture, spray intervals of 5 to 7 days may be necessary. Alternate fungicide chemistries to aid fungicide resistance management.
Application #1: captan (M3) at 4 lb 50WP/A *plus* Topsin M (thiophanate-methyl, 1) at 1 lb 70WP/A or Switch (cypridonil, 9) at 11-14 oz. 62.5WG/A
Application #2; Elevate (fenhexamid, 17 - See restrictions) at 1.1 to 1.5 lb 50WDG/A, or Pristine (pyraclostrobin + boscalid, 11 + 7) at 18.5 to 23 oz 38 WG/A
Application #3: captan (M3) at 4 lb 50WP/A *plus* Topsin M (thiophanate-methyl, 1) at 1 lb 70WP or
Switch (cypridonil, 9) at 11 to 14 oz. 62.5WG/A
For subsequent applications, alternate:
Captan (M3) at 4 lb 50WP/A, or Captevate (captan + fenhexamid, M3 + 17) at 3.5 to 5.25 lb 68WDG/A, or
Switch (cypridonil, 9) at 11 to 14 oz. 62.5WG/A or
Pristine (pyraclostrobin + boscalid, 11 +7) at 18.5 to 23 oz 38 WG/A, or Thiram (M3) at 4 to 5 lb 65WSB/A

✔ **Tomato – Bacterial spot and speck –** Both bacterial diseases can cause serious problems in the field if infections begin in the greenhouse prior to transplanting. Symptoms of spot and speck look very similar on infected leaves. Lesions are small, circular, blackish-brown and with time develop a halo, or yellowing of tissue surrounding the lesion. As lesions develop they can coalesce (join together) and can cause premature death. Since sources for these diseases include weed hosts, volunteer plants and contaminated wood (benches or stakes) make sure production or holding areas are disinfested, weed free and clean prior to introducing transplants, and inspect all seedlings prior to holding and transplanting. Infections can occur on all parts of the tomato plant and can easily be spread during transplant trimming with contaminated equipment and by workers' hands. Tomato plants with suspected symptoms can be treated with streptomycin (Agri-Mycin 17, Agri-Strep, 25) at 1 lb/100 gallons, or 1.25 teaspoon per gallon prior to transplanting every 4 to 5 days. After transplanting apply Actigard (P) at 0.33 oz 50 WG/A, or fixed copper (M1) at 1 lb a.i./A *plus* a mancozeb (Dithane, Manex II, Manzate, Penncozeb, M3) at 1.5 lb 75DF or OLF, or ManKocide (M1 + M3) at 2.5 to 5.0 lb 61WP/A, or Cuprofix MZ (M1 + M3) at 1.75 to 7.25 lb 52.5DF/A on a 7 day schedule. ❑

Deer Fencing from page 1

other animals. Any unused fence will have to be returned to NJDA and cannot be sold.

Applications for deer fencing will be available to farmers through the New Jersey Department of Agriculture, Soil Conservation Districts and Rutgers Research and Extension offices. Applications must be postmarked by May 31, 2006. Farmers also can call (609) 292-5532 for more information or go to the NJDA website www.state.nj.us/agriculture and click on the Grants, Financial Assistance and Services page. ❑

Pest Notes

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

New Labels

Syngenta has announced that the Fulfill (pymetrozine) 50WDG label has been expanded to include asparagus. Use Fulfill on the fern stage only for control of **green peach aphid**, **asparagus aphid**, **melon aphid** and **potato aphid**. Also, the new label has the insecticide resistance category on the front of the label, stating "Group 9B Insecticide".

✔ **Cucurbits:** Young cucurbit plants are susceptible to **cucumber beetles** and **aphids**. Although few cucumber beetles have been observed yet, aphids have been a problem on lettuce, spinach and peas in south New Jersey. Monitor the crop often to detect these pests before the population builds up. Neonicotinoid insecticides (Admire, Platinum) applied on seeds, pre-plant, at- plant, or through the drip have provided excellent results of both of these pests in trials throughout the mid-Atlantic region. If no insecticide was applied thus far, count aphids on both sides of a leaf of at least 10 plants in 10 locations. If an average of 1 aphid per plant is recorded during the seedling stage of plant development, a treatment is suggested. Although this seems like a low threshold, the population has the potential to increase rapidly (especially now that hot weather will soon arrive) and aphids transmit virus diseases to cucurbits as well. Many materials are available for aphid control on cucurbits, including Assail, dimethoate, Fulfill (a penetrating spray adjuvant is also recommended by the mfg.), Lannate, Metasystox-R, Orthene, Provado, or Venom. Consult label for each cucurbit crop for all directions, rates and restriction.

✔ **Potato, white:** The number of **European corn borer moths** caught in blacklight traps is slowly starting to increase. A total of 11 moths were caught in the past 5 days, which is lower than what might be expected at this time of the year. The total accumulated degree days so far is 540, well beyond the degree days needed for borer emergence, but not yet the degree days accumulated for peak borer emergence (700), which we normally expect around the 3rd-4th week of May. The cool evening temperatures (below 55 degrees F) are probably limiting the activity of the moths, thus few moths are being trapped in blacklight traps. The moth activity will likely rapidly increase later this week as day and night temperatures increase. If moths build up rapidly, or if we reach 700 accumulated degree days (base 50) and moths are active, a treatment should be considered. Remember, if either Platinum or Admire was used at pre-plant or planting, they will have no effect against the European corn borer.

Colorado potato beetle activity is also slowly increasing, but because of the cool temperatures, many beetles that have emerged are still hiding in the soil at the base of the plants and in cracks in the soil. If no at-plant insecticide was used, closely monitor the fields for beetle activity and treat if you observe at least 25 beetles per 50 plants, or if defoliation has reached >10% (this level of defoliation has not been observed, yet). ❑

Timber Rot of Fresh-Market Tomatoes

Andy Wyenandt, Ph.D., Specialist in Vegetable Pathology

Timber rot is a soil-borne fungal disease that causes a stem rot in fresh-market and processing tomatoes as plants begin to mature. Prolonged cool, wet conditions favor the development of Timber rot and it has a wide host range which includes peas and beans, cabbage and lettuce, known as **drop**; and pumpkins and squash, known as **White mold**. Symptoms of Timber rot on tomato include *brownish-tan lesions* that develop at the base of the main stem or near branching points. Lesions become *dry and brittle* with time and infected plants will begin to wilt as lesions begin to girdle the plant. A white, fluffy growth will accompany infected areas and black fruiting bodies, called sclerotia, will develop on the surface of the lesion or in the stem or branch of the plant. Sclerotia are a key diagnostic feature of Timber rot. When scouting for Timber rot growers should scout their fields and look for wilting plants with these brownish, to perfectly tan lesions at the base and at branch points of tomato plants. If these lesions are *dry and brittle*, look for *white fluffy growth on the surface or in the stem*. Breaking these lesions apart will often reveal *black sclerotia*. Sclerotia can survive in the field for many years and a long, proper crop rotation is the best method of control.

A section 18 has been granted for the use of Topsin M WSB for the control of white mold (timber rot) in tomato for the 2006 production season in New Jersey. The section 18 label for Topsin M WSB (thiophanate-methyl, FRAC group 1) can be obtained through your county agricultural agent. The label must be in possession of the user at the time of pesticide application. ❑

IPM Update

Kristian Holmstrom, Research Project Coordinator II, Vegetable IPM Program

Sweet Corn

Catches of **European corn borer** (ECB) adults are increasing slowly in the southern counties. Cooler evening temperatures have prevented more dramatic increases. Occasional moths are still being captured north into Hunterdon County. Although overall moth activity is still low, areas of highest activity currently are in Cumberland, Salem and Atlantic Counties (see ECB map). With warmer conditions forecast for late this week, ECB moth activity should increase significantly. Sweet corn plantings in the whorl and pretassel stages are large enough to be targets for ECB egglaying. This week ECB moths have been observed flying in whorl stage plantings in Burlington and Mercer Counties, although as yet feeding injury has not been reported. Injury may be present in some of the earlier plantings in the southern counties. Scouting should commence as soon as possible, particularly on whorl and older plants. Check 5 consecutive plants in each of 10 random locations in the planting. Look for the "shot-hole" type feeding on the leaves that indicates larval ECB infestation. Early in the season, these holes will be very small, and will be present on consecutive leaves as the larvae ate through them to get inside the plant. Consider treating when feeding signs are present on 12% or more of the plants.

The highest nightly ECB catches for the previous week have occurred at:

Folsom	2	Cedarville	1	Indian Mills	1
Jones Island	2	Dayton	1	Lawrenceville	1
Seeley Lake	2	Eldora	1	Medford	1
Allentown	1	Hammonton	1	Pedricktown	1

Occasionally, early season whorl stage sweet corn plantings will have a few plants that have what appears to be **fall armyworm** (FAW) injury. This injury is rarely frequent enough to warrant treatment, and is typically caused by the **true armyworm** (TAW). TAW is primarily a grain pest, and sometimes a few large instar larvae will migrate into adjacent sweet corn and feed on the plants. TAW is distinguishable from FAW by having a broad pinkish band on the side of the larva, and lacking the upside-down "Y" pattern on the head capsule that FAW has. FAW is a darker caterpillar as well, being typically brownish in color. We would not expect FAW to be present until the month of July.

Corn flea beetle is still a potential problem, especially with cool night temperatures slowing the growth of seedling stage corn. Check seedling stage plantings for this small black beetle. Warm, calm days are ideal for flea beetle activity. Consider treating when 6 or more beetles are found on 100 seedlings (10 plants each in 10 random locations), if no soil insecticide or systemic seed treatment was used and the variety in question is not tolerant to **Stewart's Wilt**.

Only one **corn earworm** (CEW) adult has been captured to date. CEW maps will be published when catches become more frequent.

Cole Crops

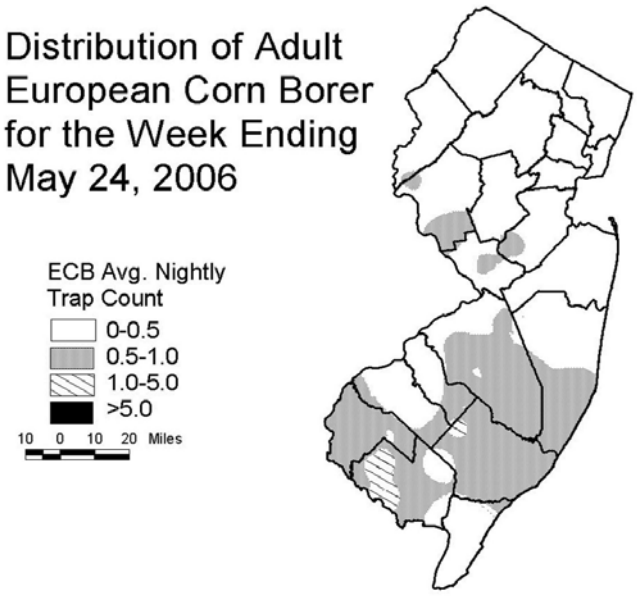
Imported cabbage worm (ICW) infestations are increasing slowly in the north and central counties, and **diamondback moth** (DBM) larvae have become more prevalent. In heading type cole crops like cabbage and broccoli, check 5 consecutive plants each in 10 random locations. Look on the undersides of leaves and on the youngest leaves at the center of the plant. Consider treating if 10% or more plants are infested while in the 0-9 true leaf stage. The threshold may increase to 20% from 9 true leaves to the early head stage. Once heads form, the threshold becomes a more conservative 5%, in order to protect the marketable portion of the plant.

While scouting for caterpillar pests, note the presence of **crucifer flea beetle**, especially on young plants. This pest can be very destructive, particularly to newly emerged seedlings. Consider treating if 50% or more plants have flea beetles on them, and damage is visible.

Tomatoes

Colorado potato beetle (CPB) adults are active in some recently planted tomato fields at this time. The beetles can be quite damaging to small transplants, and are actively laying eggs in central New Jersey fields where a systemic insecticide was not used. Be sure to monitor newly transplanted fields at least weekly for the presence of the striped adult beetles, their bright yellow-orange egg masses beneath the leaves, and the small pink grubs (larvae). Checking 5 consecutive plants each in 10 random locations, consider treating if CPB adults average 15 or more per 10 plants. Where significant egglaying has already occurred, consider treating for when a combination of larvae and adults exceeds 20 per 10 plants. If there are "hot spots" of activity in the field, consider spot treating to limit spread.

See ECB Distribution Map on page 5



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

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much below normal, averaging 57 degrees north, 59 degrees central and 60 degrees south. Extremes were 78 degrees at Freehold on the 19th, and 40 degrees at Flemington on the 21st. Weekly rainfall averaged 1.74 inches north, 1.65 inches central, and 1.24 inches south. The heaviest 24 hour total reported was 1.17 inches at Hammonton on the 15th to 16th. Estimated soil moisture, in percent of field capacity, this past week averaged 99 percent north, 98 percent central and 94 percent south. Four inch soil temperatures averaged 59 degrees north, 60 degrees central and 61 degrees south.

Weather Summary for the Week Ending 8 am Monday 5/22/ 6

	RAINFALL			TEMPERATURE				GDD BASE50		MON
WEATHER STATIONS	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
CANOE BROOK	1.95	7.77	-3.65	77	43	59.	-2	385	190	97
CHARLOTTEBURG	1.54	8.68	-2.56	73	41	55.	-3	266	144	95
FLEMINGTON	1.72	8.76	-2.07	73	40	58.	-3	367	159	97
NEWTON	missing									
FREEHOLD	1.84	8.50	-2.29	78	46	60.	-3	380	120	96
LONG BRANCH	1.77	8.90	-2.24	73	46	60.	-2	314	92	94
NEW BRUNSWICK	1.48	7.34	-3.24	76	44	59.	-4	418	131	97
TOMS RIVER	1.88	7.39	-3.40	76	41	59.	-3	358	114	92
TRENTON	1.29	7.22	-2.55	75	44	59.	-5	430	109	93
CAPE MAY COURT HOUSE	1.94	5.67	-3.80	73	44	60.	-3	390	106	91
DOWNSTOWN	.97	5.41	-4.32	76	41	59.	-5	415	82	88
GLASSBORO	.47	6.70	-3.63	75	47	59.	-5	494	175	81
HAMMONTON	1.56	6.39	-3.66	77	44	60.	-4	443	132	84
POMONA	2.06	7.40	-2.01	75	41	61.	-1	395	134	91
SEABROOK	.45	6.04	-2.83	76	46	61.	-3	552	214	80
SOUTH HARRISON	.93	5.70	-4.38	73	48	60.	NA	508	NA	NA

WES KLINE — GDD BASE 40 PINEY HOLLOW
LAST WEEK 139 (Ending 5/15/06)
THIS WEEK 132 (Ending 5/22/06)

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Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The pesticide user is reponsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCRE in your County.

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