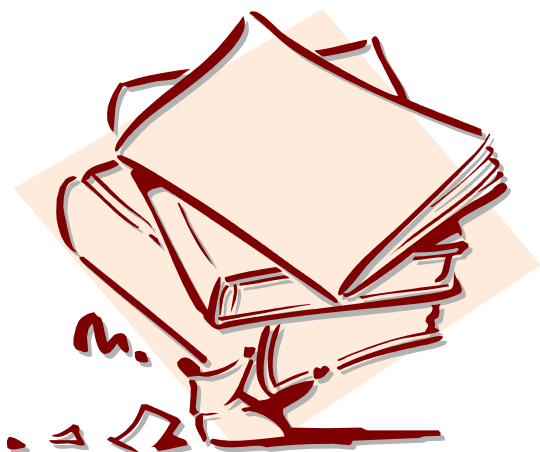


PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

SEPTEMBER 12, 2007



INSIDE

| | |
|--|---|
| Food Safety Series: Program Maintenance | 1 |
| Vegetable Disease Update | 2 |
| Pest Notes | 4 |
| IPM Update | 4 |
| Weekly Weather Summary | 6 |
| Eligibility for Deer Fencing Program Expanded for 2007 | 7 |
| Announcing Green Energy Website for Farms and Greanhouses | 7 |

Food Safety Series: Program Maintenance

Wesley Kline, Ph.D., Cumberland County Agricultural Agent

In August 2007, a company in California recalled bagged spinach for possible salmonella contamination. There were no reported illnesses from the tainted spinach. Another company recalled baby carrots after they were found to be contaminated with Shigella bacteria in Canada. There were four reported illnesses in Canada from the contaminated carrots.

What does this tell us? First, in these two instances the system worked. The products were traced back to the companies who sold them and were removed from the market. Second, food borne illnesses are not going away. Growers need to maintain a strong food safety program and be prepared for third party audits next year.

With some recent audits in New Jersey, two areas of concern became apparent:

1. If a grower hires someone to write his/her food safety manual, the grower must know what is in the manual and adhere to the contents! There have been instances when the auditors came to do the audit it was obvious the grower did not know what was in his/her manual. Each grower must sit down with the person developing the manual to make sure there is agreement about what to put in the manual. Once the manual has been developed, each section must be reviewed for clarification and necessary changes should be made for the final version. Remember, auditors use the grower's food safety manual as the basis for the audit. If the grower does not understand the contents of their manual, how can he/she answer the auditors' questions?
2. Many growers are using services to supply portajohns and hand washing facilities. These services generally clean the facilities once or twice a week depending on the contract specifications. This does not mean growers can ignore the portajohns! Whenever crews are working in the field, growers must take responsibility to see that the facilities are checked on a daily basis. Some audited farms automatically failed their third party audit because the facilities were not clean or were not supplied with soap, water, toilet paper or single use towels for hand washing.

As we move into 2008, training sessions are being organized on

SEE FOOD SAFETY ON PAGE 7

Vegetable Disease Update

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

✓ **Carrots – Leaf blights** - *Alternaria* and *Cercospora* are two soil-borne fungal pathogens that may cause early defoliation in carrots reducing yields and making harvest difficult. Both pathogens produce distinct symptoms on carrots. **Powdery mildew causes characteristic white, powdery lesions on foliage. Symptoms of *Alternaria* include irregular, dark brown to black spots which typically show up on older leaves first. *Cercospora* leaf spots are round, grayish-brown and are more prevalent on younger foliage.** Both leaf blights typically start at the margins of leaflets and as more spots develop leaflets begin to wither and die. Symptoms similar to leaf infections can develop on stems and petioles. Control of both diseases begins with regular scouting and preventative fungicide applications on susceptible varieties. Apply Amistar 80WDG (azoxystrobin, FRAC code 11) at 3 to 5 oz/A or Quadris (azoxystrobin, 11) at 9.2 to 15.4 fl. oz 2.08F/A, or Cabrio 20EG (pyraclostrobin, 11) at 8 to 12 oz/A, or Pristine (pyraclostrobin + boscalid, 11 +7) tank-mixed or alternated with Bravo, Echo, Equus (chlorothalonil, M5) at 1.5 to 2 pt/A or OLF, or Endura 70W at 4.5 oz/A. Apply Rovral 4F (iprodione, 2) at 1 to 2 pt/A or Switch (cypridonil, 9) at 11 to 14 oz/A for *Alternaria* only. Do not make more than one sequential application of Amistar, Pristine or Cabrio (FRAC code 11). For more information on tolerant varieties and control please see the *2007 New Jersey Commercial Vegetable Production Recommendations*.

✓ **Cole Crops – Downy mildew** can be a problem in fall cole crops (cabbage, collards, broccoli, cauliflower and kale). Infection begins as irregular yellow spots on leaves which later turn brown. A white fluffy growth develops on the underside of leaves during cool moist weather. When the disease first appears apply a fungicide every 7 to 10 days. Azoxystrobin (Amistar, Quadris), Bravo, Cabrio, Maneb, Ridomil Gold Bravo, Actigard and Aliette are labeled. For more information on control please see the *2007 New Jersey Commercial Vegetable Production Recommendations*.

✓ **Cucurbits – Powdery mildew** - Powdery mildew typically occurs from mid-July until the end of the season. Symptoms typically begin on older, lower leaves and can develop and spread rapidly under dry, humid conditions. **Control of Powdery mildew begins with regular scouting for symptoms and weekly fungicide applications.** Fungicide resistance management of the fungus which causes Powdery mildew is critical. Fungicides with a high risk for resistance development such as the strobilurin (Pristine, FRAC code 11) should be tank mixed with a protectant fungicide such as chloro-

thalonil (M5) or sulfur (M2) and rotated with fungicides of a different chemistry such as chlorothalonil + Nova or Procure (FRAC code 3). FRAC code 3 fungicides are also high-risk and should never be applied alone. Growers need to read and follow restrictions on labels carefully. For more information on control of Powdery mildew and other important diseases of cucurbits please see the *2007 New Jersey Commercial Vegetable Production Recommendations Guide*.

Cucurbits – Downy mildew - Tank mix one of the products listed below with a protectant fungicide such as chlorothalonil (M5), or maneb (M3), or mancozeb (M3) (see label for rates and specific crop uses): Ranman (cyazofamid, 21) at 2.1 to 2.75 fl. oz. 400SC/A, or Previcur Flex (propamocarb HCL, 28) at 1.2 pt 6F/A, or Gavel (zoxamide + mancozeb, 22 + M3) at 1.5 to 2.0 lb 75DF/A (some muskmelon may be sensitive) Curzate (cymoxanil, 27) at 3.2 oz 60DF/A, or Tanos (famoxodone + cymoxanil, 11 + 27) at 8 oz 50WDG/A

Downy mildew materials should always be tank mixed with a protectant fungicide and rotated weekly with fungicides from a different FRAC code to reduce the chances for fungicide resistance development.

Cucurbit growers who suspect downy mildew should contact their county agricultural agent. To track the progress of Downy mildew in the eastern US and to keep up with reports of Downy mildew from other states please visit North Carolina State University's Cucurbit Downy Mildew Forecasting Center at <http://www.ces.ncsu.edu/depts/pp/cucurbit/>. For more information on Downy mildew control for specific cucurbit crops please see the *2007 New Jersey Commercial Vegetable Production Recommendations Guide*.

Cucurbits – 'White speck' of Pumpkin – also known as *Microdochium* or *Plectosporium* blight causes small, distinct lesions on infected vines, petioles, leaves, handles and fruit. Symptoms include light tan to pure white 'spindle-shaped' lesions that have a dry, scabby appearance. These small 'white specks' often coalesce to form large, dry scabby whitish-tan areas on infected plant parts. Heavy vine infection can lead to complete defoliation and handle and fruit infection can ruin aesthetic fruit quality. Control of White speck begins with proper rotations with crops other than cucurbits. Maximum coverage with fungicide applications are necessary for control of White speck. For more information on control please see the *2007 New Jersey Commercial Vegetable Production Recommendations*.

✓ **Cucurbits – Phytophthora blight** – For protection against the fruit rot phase of the disease apply one of the following: Forum (dimethomorph, 40) at 6.0 fl. oz 4.18SC/A (must be tank mixed with another fungicide active against *Phytophthora* blight), or Ranman (cyazofamid, 21) at 2.75 fl oz 400SC/A plus as
SEE VEGETABLE DISEASES ON PAGE 3

organosilicone surfactant (do not tank mix with copper) Tanos (famoxodone + cymoxanil, 11 + 27) at 8.0 to 10.0 oz 50WDG/A (for suppression only), or Gavel (zoxamide + mancozeb, 22 + M2) at 1.5 to 2.0 lb 75DF/A (not for use on pumpkin, some muskmelon varieties are sensitive to Gavel, see label)

✓ **Leeks – Purple Blotch** – Symptoms of Purple blotch include tannish-brown, elongated, concentric, circular lesions with chlorotic margins. Lesions run parallel with the leaf veins. Development of Purple blotch is favored by warm night temperatures. Fungicide applications should begin in the fall as soon as transplants are set out on 10-day intervals as long as night temperatures remain warm. There are a number of fungicides labeled for the control on Purple blotch. For more information on control please see the *2007 New Jersey Commercial Vegetable Production Recommendations*.

✓ **Lettuce – Bottom Rot/Drop** – For Bottom Rot, Endura 70W (boscalid, 7) at 8 to 11 oz/A, or Rovral 50WP (iprodione, 2) at 1.5 to 2 lb/A or OLF should be applied one week after transplanting or thinning and 10 and 20 days later. For Drop, the biological Contans 5.3WG at 2 to 4 lbs/A pre-plant can be incorporated at a depth of 1 to 2 inches, or Rovral 4F (iprodione, 2) at 1.5 to 2 pt/A beginning one week after transplanting or thinning and again at 10 and 20 days later. For more information on control of Bottom Rot and Drop and other important diseases of lettuce please see the *2007 New Jersey Commercial Vegetable Production Recommendations Guide*.

✓ **Parsley – Septoria Blight /Bacterial (blight) leaf spot** – Leaf spots caused by **Septoria blight** are easily distinguished by small, angular to round leaf spots with grayish-brown centers with a definitive dark, brown margin. Numerous black fruiting bodies develop and are visible in the center of lesions. Spread of Septoria blight is by wind-driven rain, heavy dews and overhead irrigation. Workers and equipment may also spread the disease during wet conditions. Best management practices include i) proper crop rotations of at least 2 years and by using clean or treated seed ii) **scout fields early** for symptom development iii) keeping workers and equipment out of fields with wet foliage iv) plowing under residue of harvested crop and avoid planting in fields adjacent or near previously infected fields. Applications of azoxystrobin (Quadris) and fixed copper can be alternated every 7 days for control. Leaf spots caused by Bacterial blight appear as small brown to black spots on the leaves. It does not have the grayish brown centers or brown margins like **Septoria**. The pathogen can be soil or seed borne and develops during cool, moist weather. The disease spreads during cool rainy periods or under sprinkler irrigation; and a high plant density. The same control measures listed for **Septoria** will assist in preventing spread of **Bacterial leaf spot** as long as fixed copper is included with the azoxystrobin. If Oxidate is used, follow the label carefully.

✓ **Pepper – Anthracnose** - Symptoms of fruit infection include sunken, circular spots which develop blackish-tan to orange concentric rings as lesions develop. Lesions on stems and leaves appear as grayish-brown spots with dark margins and can easily be overlooked. Control of Anthracnose begins with using clean-free seed and/or transplants. A three-year crop rotation with non-solanaceous crops is recommended. After the harvest season, pepper fields should be disced and plowed under thoroughly to bury crop debris. Beginning at flowering, alternate one of the following FRAC code 11 fungicides: azoxystrobin (Amistar 80WDG at 2 to 5 oz/A or Quadris at 6.2 to 15.4 fl oz 2.08F/A), or Flint (trifloxystrobin) 50WDG at 2 to 4 oz/A, or Cabrio (pyraclostrobin) 20EG at 8 to 12 oz/A with maneb (M3) 75DF at 1.5 to 3 lb/A or OLF.

✓ **Pumpkin - White mold or Sclerotinia rot** - White mold may cause problems when pumpkins are planted in the same field each year and in fields where other susceptible crops such as bean have been grown. Development of white mold is favored by prolonged, cold wet weather. Symptoms often begin to show up as a soft, mushy area around the stem as the fruit reaches maturity. Infected fruit often collapse inward near the stem. Large, black fruiting bodies (sclerotia) may be produced around infected areas. Sclerotia serve as overwintering and long-term survival structures. A long crop rotation is necessary to help control white mold. Infected fruit should be removed from the field immediately. Early maturing fruit left in the field for a prolong time period are susceptible to white mold.

✓ **Pumpkin - Sunscald injury** - Sunscald injury occurs when pumpkin fruit are suddenly exposed to heavy sunlight during the latter stages of fruit ripening during the fall. Sunscald injury often occurs when pumpkin plants become prematurely defoliated in the early fall by Powdery mildew or Downy mildew or when vines collapse due to Phytophthora blight or bacterial wilt. Symptoms of sunscald injury include the collapsing of rind tissue on the side of the fruit which is in direct contact with the afternoon sun. Sunscald injury often develops as a pinkish-red color on exposed fruit which becomes flat in appearance. Over time fruit tissue may become tan to brown and secondary pathogens often invade the sunscald injured areas of the fruit. To help reduce the potential for sunscald injury, maintain foliage for as long as necessary, especially if fruit are going to be left in the field for long periods.

✓ **Spinach – White Rust** – Symptoms of White rust include **irregular, chlorotic areas on the upper leaf surface with white, blister-like pustules developing on lower leaf surface**. Development of White rust is favored by cool nights and mild day temperatures with **prolonged periods of dew or fog which favor wet leaf surfaces**. Control of White rust begins with crop rotations of 2 or more years. Some varieties have partial resistance and should be used if possible. A preventative fungicide schedule should begin 2 to 3 weeks after planting, and/or **if weather conditions favor disease development**. There are a number of fungicides labeled for the control of White rust on spinach. For more information on the control of White rust on spinach please see the *2007 New Jersey Commercial Vegetable Production Recommendations*. □

Pest Notes

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

Rutgers IPM Specialist Joe Mahar reports that many fields have high populations of **aphids** in pepper, tomato, cabbage and cucurbit crops. The **bean aphid**, a dull black (or dark blue or dark green) aphid, often congregates on the leaf surfaces in high numbers, causing the leaf foliage to turn yellowish in color. Bean aphids attack many vegetables, including bean, asparagus, beets, parsnip, spinach and other leafy crops. Another aphid that often appears as a dark green is the **melon aphid**, which also attacks bean, beet, eggplant, okra, spinach, leafy greens, and all of the cucurbit crops. This aphid varies in color from very dark green to yellow green, brown or even black, but usually shows dark black tubercles, "exhaust pipes", on the rear of the abdomen. The **potato aphid**, often called the "tomato aphid" or the "pink potato aphid", is usually a light reddish or pinkish in color, and attacks primarily pepper, potato and tomato, but will also attack cabbages, pea, sweet potato, turnip, etc. The **cabbage aphid** is a very small, whitish-green aphid found in dense clusters on the undersides of leaves on broccoli, cabbage, cauliflower, Brussels sprouts, kohlrabi, kale, collards, turnip and radish. Oftentimes the feeding causes the leaves to cup and heavily curl. The **green peach aphid** attacks nearly every vegetable crop, and usually appears as dark green, light green or yellowish green in color, sometimes with 3 darkish lines on the back.

Most aphid species are readily managed if a material is applied before the population reaches high levels. Imidacloprid, Assail, Actara, and Venom are some of the neonicotinoids that are effective against all the species of aphids that attack vegetables in NJ. Fulfill is a relatively new, very effective aphicide that is labeled on most vegetable crops for all our pest aphid species. Lannate, MSR and Orthene are some of the older chemistry insecticides that, although limited on crop use, are effective against aphids and other pests.

In general, thorough coverage of the plant canopy is critical for proper aphid management. Aphids suck plant juices from the undersides of leaves, and often the leaf curls or cups around the aphids, further protecting them from spray applications. It is important to use high gallonage, high pressure to agitate the leaves and allow the aphids to be exposed to the spray application. Best results are obtained if control materials are used before the aphid population reaches a high level and leaves severely curl.

Because all of these aphids are capable of infesting just about any crop, make sure to read the label for all crops registered for each material used before any application is made. Not all materials are labeled on all vegetable crops. □

IPM Update

Kristian Holmstrom, Research Project Coordinator II, Vegetable IPM Program

Sweet Corn

European corn borer (ECB) adult numbers have remained fairly stable over the past week. ECB continues to be low throughout much of the northern part of the state. They are low to moderate in the south and central areas except in an area stretching from Salem into central Gloucester County. In this particular area, some traps are getting very high adult catches (see ECB map). Larval feeding is present in late sweet corn plantings in many areas now. For sweet corn that is not yet silking, check 5 consecutive plants each in 10 random locations throughout the planting. Look for the presence of "shot-hole" type feeding that is characteristic of ECB larvae. On pre-tassel stage plants, look for discoloration or actual caterpillars in the emerging tassels. Consider treating if fresh damage is found on 12% or more plants. Be sure to treat again at the full tassel to first silk stage to protect the forming ears from ECB larvae that are leaving the tassel and traveling down the stalk.

The highest nightly ECB catches for the previous week are as follows:

| | | | | | |
|-------------|----|------------|---|--------------|---|
| Shirley | 13 | Allentown | 4 | Georgetown | 3 |
| Downer | 8 | Burlington | 4 | Indian Mills | 3 |
| Tabernacle | 8 | RAREC | 4 | Beckett | 2 |
| Pedricktown | 6 | Elmer | 3 | Seeley Lake | 2 |

Fall armyworm (FAW) feeding in seedling, whorl, and pre-tassel stage plantings is common at this time. FAW is capable of causing significant injury to sweet corn plants and will feed on all stages, including seedlings. For this reason it is necessary to check all pre-silking fields for signs of FAW feeding. Look for large, ragged holes and lots of caterpillar droppings in the whorl. Consider treating if 12% or more FAW injury is found alone, or in combination with ECB injury in a planting.

Corn earworm (CEW) catches are moderate-to-high in much of the state (see CEW population map). There are pockets of higher catches, but the overall population is typical for this time of the season. CEW adults pose a significant threat to silking sweet corn. The cross-hatched area (green on the web, found at: www.pest-management.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm) corresponds to a 3-day silk spray schedule.

Silking Spray Schedules*:

North – 3 days

Central – 3 days

South – 3 days

* Note: These are general recommendations. Local trap catches may indicate some variation in the frequency of insecticide applications to silking corn.

SEE IPM ON PAGE 5

The highest nightly CEW catches for the previous week are as follows:

| | | | | | |
|--------------|----|---------------|----|-----------|----|
| Georgetown | 20 | Newton | 16 | Allamuchy | 12 |
| Beckett | 19 | Indian Mills | 14 | New Egypt | 12 |
| Pedricktown | 19 | East Vineland | 13 | RAREC | 11 |
| Hackettstown | 16 | Lawrenceville | 13 | Shirley | 10 |

Cole Crops

Cabbage looper (CL), **imported cabbage worm (ICW)**, and **diamondback moth larvae (DBM)** are all being found on the cole crops at this time. 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. For leafy greens like collards, use a 10% threshold throughout the life of the crop to minimize injury to the leaves.

While scouting for caterpillar pests, note the presence of **crucifer flea beetle**, especially on new transplants or recently emerged 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. It is important to check these young fields at least weekly, as reinfestation can occur quickly after a foliar insecticide application.

Tomatoes

Higher **CEW** catches indicate the potential for injury in late season tomatoes. In areas where CEW are averaging 10 or more per night (black areas on the CEW map and red on the web version), fields should be scouted for signs of infestation. Generally, fruit on the outer part of the plant are targets for damage. Look for holes on the shoulders of fruit. In some cases, the caterpillar may still be inside, although they tend to feed on several fruit in the cluster and move around. If feeding is found in multiple sites, consider an insecticide application to limit damage.

Peppers

With a late **ECB** flight ongoing in the southern counties, it is important to check peppers weekly for the presence of ECB eggmasses, as well as **aphids** and **TSSM**. ECB eggmasses are flat and waxy looking, having the appearance of fish scales on the underside of the pepper leaf. As the larvae emerge, they will bore into the fruit where the cap meets the shoulder of the pepper. Uncontrolled infestations will result in many fruit developing soft rot. Check 5 consecutive plants each in 10 random field locations. Look at the underside of 2 leaves per plant. If 2 or more ECB eggmasses are found in the total sample, consider an insecticide application to minimize plant injury. Additionally, a weekly spray schedule is warranted on fruiting plants when

ECB adult numbers reach 1 or more per night in local blacklight traps. At present, adult ECB activity at this level exists in all southern and central counties. All shaded and cross-hatched areas on the ECB map (blue and green on the web version) correspond to a weekly spray schedule on fruiting peppers.

When scouting peppers, be sure to note the presence of aphids on the underside of leaves. These pests can build to high numbers on plants, especially with repeated use of synthetic pyrethroid insecticides for ECB management. As colonies increase in size, their droppings result in a sticky coating on the fruit below. Consider treating if aphids average 100 or more per 100 leaves sampled. This situation has occurred in several IPM scouted fields and both northern and southern NJ recently.

Beet armyworm (BAW) adult catches remain very low in the pheromone network in the southern counties. Numbers are averaging well below 5 per night in all areas except for locally higher catches in the Atlantic/Camden border area, where BAW is averaging over 30/night. These catches would not register an appreciable image on a population map. As a result, no BAW map will appear in this edition. Low level signs of feeding have been detected in peppers in the aforementioned area. Generally, though, these adult numbers are below those considered potentially damaging at this time. While checking for other insect pests, look for leaves exhibiting heavy feeding near the upper portion of the plant. Often, small BAW larvae will be found near the buds where this feeding occurs. Later, as they enlarge, BAW will begin feeding on fruit.

With **CEW** numbers high, this pest may begin to infest peppers. Areas on the map that are black (red on the web version) may require weekly insecticide applications to limit injury. Treatments used for ECB control should also control CEW. For recommended insecticides, consult the *2007 Commercial Vegetable Production Recommendations*.

Pumpkins and Winter Squash

Melon aphids are now increasing in a number of northern NJ pumpkin fields. Melon aphids, like other types, deposit sticky droppings. Large populations result in a sticky coating on pumpkins beneath the foliage. If this occurs too close to harvest, the fruit may need to be washed prior to sale. It is very important to scout fields weekly, for the presence of pests including **aphids**. Check 10 mature leaves per site in 10 random sites throughout the field. Consider treating if leaves with an average of approximately 25 aphids are found in each of 10 sample sites. **Cucumber beetles** can increase in fields at this time, causing injury to the rinds of maturing fruit. While scouting, note the presence of striped or spotted cucumber beetles in samples. Consider treating if beetles are found in 2 or more sites, particularly if any feeding (scarring on the rind) is discovered.

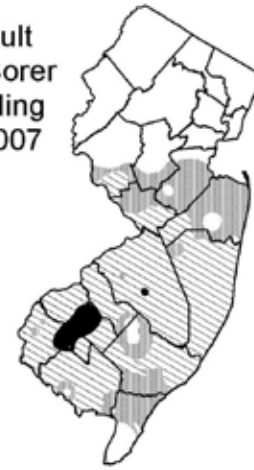
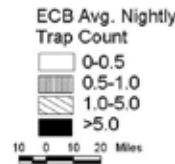
SEE PUMPKINS ON PAGE 6

PUMPKINS FROM PAGE 5

Powdery mildew (PM) infections are now common in most plantings. This fungal pathogen first appears as a dime-sized lesion that looks like white powder. They can develop on either leaf surface as well as the petioles. While scouting, look on mature leaves, particularly those within the canopy for PM lesions. When the threshold of 1 lesion per 50 older leaves is reached, begin the regular, weekly protectant fungicide program.

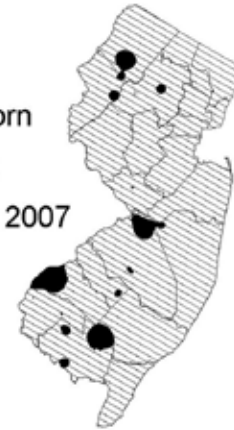
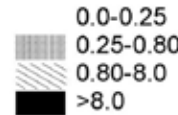
Be alert for the possibility of **downy mildew (DM) infections**. DM is active in New Jersey, particularly on cucumbers. Extension pathologist Dr. Andy Wyenandt has said that DM has begun to affect pumpkins and melons in some southern areas as well. As yet, infections have not been detected in any IPM scouted fields in the central or northern counties, although cucumbers in some of those areas are heavily infected. Pumpkin growers with fields that are not yet fully mature should be including fungicides specific to DM for good management of this pathogen. DM first appears as sharp yellow lesions on the upper surface of leaves. Veins are yellow and constricted on the lower leaf surface. Shortly after this, dark sporulation occurs along veins on the lower surface beneath the lesion. This sporulation will be present when conditions are wet or very humid. In a matter of several days, significant defoliation can occur. For recommended fungicide rotations for DM and PM, consult the *2007 Commercial Vegetable Production Recommendations*.

Distribution of Adult European Corn Borer for the Week Ending September 12, 2007



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

Distribution of Adult Corn Earworm for the Week Ending September 12, 2007



Data collected and processed by: Kris Holmstrom, Rutgers Cooperative Extension Pest Management Office

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal, averaging 72 degrees north 74 degrees central and 75 degrees south. Extremes were 92 degrees at Canoe Brook on the 9th, and 53 degrees at Newton on the 4th. Weekly rainfall averaged 0.00 inches north, 0.00 inches central, and 0.01 inches south. The heaviest 24 hour total reported was 0.06 inches at Cape May Courthouse on the 9th to 10th. Estimated soil moisture, in percent of field capacity, this past week averaged 72 percent north, 59 percent central and 48 percent south. Four inch soil temperatures averaged 69 degrees north, 71 degrees central and 72 degrees south.

Weather Summary for the Week Ending 8 am Monday 9/10/7

| WEATHER STATIONS | RAINFALL | | | TEMPERATURE | | | | GDD BASE50 | | MON %FC |
|--|----------|-------|-------|-------------|----|-----|-----|------------|-----|---------|
| | WEEK | TOTAL | DEP | MX | MN | AVG | DEP | TOT | DEP | |
| CANOE BROOK | .00 | 42.53 | 15.52 | 92 | 57 | 74. | 8 | 2890 | 517 | 65 |
| CHARLOTTEBURG | .00 | 30.60 | 3.32 | 88 | 54 | 71. | 9 | 2505 | 619 | 62 |
| FLEMINGTON | .00 | 32.86 | 6.94 | 91 | 55 | 73. | 7 | 2727 | 293 | 70 |
| NEWTON | .00 | 27.36 | 2.18 | 87 | 53 | 70. | 7 | 2472 | 334 | 65 |
| FREEHOLD | .00 | 31.79 | 6.55 | 90 | 55 | 75. | 8 | 2968 | 393 | 60 |
| LONG BRANCH | .00 | 31.12 | 5.53 | 85 | 60 | 73. | 5 | 2727 | 210 | 39 |
| NEW BRUNSWICK | .00 | 37.47 | 11.90 | 89 | 58 | 74. | 6 | 2891 | 178 | 69 |
| TOMS RIVER | .00 | 26.25 | .11 | 88 | 54 | 73. | 4 | 2789 | 274 | 37 |
| TRENTON | .00 | 26.98 | 2.75 | 90 | 57 | 74. | 5 | 3022 | 211 | 37 |
| CAPE MAY COURT HOUSE | .06 | 16.57 | -6.06 | 87 | 59 | 74. | 4 | 2906 | 390 | 43 |
| DOWNSTOWN | .00 | 19.87 | -3.98 | 88 | 55 | 74. | 5 | 3031 | 212 | 42 |
| GLASSBORO | .00 | 23.71 | -1.24 | 89 | 61 | 76. | 7 | 3318 | 521 | 37 |
| HAMMONTON | .00 | 20.14 | -4.80 | 90 | 55 | 74. | 5 | 3114 | 315 | 36 |
| POMONA | .00 | 20.89 | -1.96 | 89 | 56 | 73. | 6 | 3049 | 438 | 37 |
| SEABROOK | .00 | 21.16 | -1.71 | 88 | 62 | 76. | 7 | 3331 | 497 | 39 |
| SOUTH HARRISON | .00 | 23.99 | -0.54 | 89 | 62 | 76 | NA | 3210 | NA | NA |
| WES KLINE -- GDD BASE 40 PINEY HOLLOW LAST WEEK 222 (Ending 9/3/07) THIS WEEK 236.(Ending 9/10/07) | | | | | | | | | | |

Eligibility for Deer Fencing Program Expanded for 2007

New and beginning farmers will have an opportunity to participate in the New Jersey Department of Agriculture 2007 Deer Fencing program, a cost-share program that provides fencing material and up to 30 percent of the line posts to qualified farmers. The program, run cooperatively by the Department and Rutgers NJAES Cooperative Extension, has expanded eligibility to new and emerging operations that could benefit from the exclusionary fencing. The new/beginning farmer category is only eligible to farms established from 2000 through the present day which meet an economic threshold.

"The fencing program has successfully assisted participating farmers in minimizing deer damage to crops over the past two years," said New Jersey Secretary of Agriculture Charles M. Kuperus. "This year, we hope to help newer farmers trying to establish their crops as well as long-time farmers keep deer and other animals out of their fields so they can benefit from higher yields and ensure the viability of New Jersey's farms." This is the third year of the Department's deer fencing program. In the first two years, fence, accompanying wire and posts were distributed to 150 farmers throughout the state.

A Rutgers NJAES Cooperative 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 or 2006 program are not eligible** to participate
- Must 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
- Must 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, or
- Must be a **New/Beginning farmer** actively engaged in production of agricultural commodities on a New Jersey farm that was established from 2000 through the present day and have documented proof of a minimum of \$5,000 in sales of agricultural commodities produced by the applicant on a New Jersey farm
- Must 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**

Announcing Green Energy Website for Farms and Greenhouses

The UMass Extension Vegetable and Floriculture Programs are excited to present the addition of "Renewable Energy for Farms and Greenhouses" to their websites. The pages are designed to provide a practical and reliable resource base for farmers and growers on using renewable energy including solar, wind, biomass, and geothermal technologies. With high fuel prices, decreasing consumption of fossil fuels is an important step you can take to ease your wallet and to reduce greenhouse gas emissions. The site is arranged to be a guide for the process of adding green energy; it provides resources on the different types of energy, tax incentives, finding a contractor, and energy efficiency. There is also a page that lists Massachusetts farms and greenhouses that are using green energy. Visit the website by going to www.umassvegetable.org or <http://www.umass.edu/umext/floriculture/> and clicking on the "Renewable Energy" link. □

FOOD SAFETY FROM PAGE 1

food safety and third party audits. This is a collaborative effort between the New Jersey Department of Agriculture and Rutgers Cooperative Extension. Contact Cooperative Extension of Cumberland County for information on upcoming sessions at 856-451-2800. Plan to attend one of these sessions even if you have been through an audit and passed. Remember -- the audit is good for only one year and there will be changes in 2008. □

-
- Complete a **mandatory deer fence installation workshop** sponsored by the New Jersey Department of Agriculture (NJDA) and Rutgers Cooperative 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 other animals. Any unused fence will have to be returned to NJDA and cannot be sold.

Applications for deer fencing are available to farmers through the New Jersey Department of Agriculture, Soil Conservation Districts and Rutgers Extension offices. **Applications must be postmarked by October 8, 2007.** Farmers also may call (609) 292-5532 for more information or go to the NJDA website deer fencing page at www.nj.gov/agriculture/grants/deer.html. □

New Jersey Agricultural
Experiment Station
Plant & Pest Advisory
Rutgers School of Environmental
and Biological Sciences
ASB II, 57 US Hwy. 1
New Brunswick, N.J. 08901

RUTGERS

FIRST CLASS
POSTAGE PAID
PERMIT #576
MILLTOWN, NJ 08850

PLANT & PEST ADVISORY VEGETABLE CROPS EDITION CONTRIBUTORS

Rutgers Cooperative Extension (RCE) Specialists

Gerald M. Ghidui, Ph.D., Vegetable Entomology
George Hamilton, Ph.D., Pest Management
Joseph R. Heckman, Ph.D., Soil Fertility
Bradley A. Majek, Ph.D., Weed Science
Andy Wyenandt, Ph.D., Vegetable Pathology

RCRE County Agricultural Agents

Atlantic, Richard W. VanVranken (609-625-0056)
Burlington, Raymond J. Samulis (609-265-5050)
Cape May, Jenny Carleo (609-465-5115)
Cumberland, Wesley Kline, Ph.D. (856-451-2800)
Gloucester, Michelle Infante-Casella (856-307-6450)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Middlesex, William T. Hlubik (732-398-5260)
Monmouth, Bill Sciarappa, Ph.D. (732-431-7260)
Morris, Peter J. Nitzsche (973-285-8300)
Passaic, Elaine F. Barbour, Agric. Assistant (973-305-5740)
Salem (856-769-0090)
Warren, William H. Tietjen (908-475-6505)

Vegetable IPM Program (732-932-9802)

Joseph Ingerson-Mahar, Vegetable IPM Coordinator
Kristian E. Holmstrom, Research Project Coordinator II

Newsletter Production

Jack Rabin, Associate Director for Farm Services, NJAES
Cindy Rovins, Agricultural Communications Editor

Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The pesticide user is responsible 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 RCE in your County.

Use of Trade Names: No discrimination or endorsement is intended in the use of trade names in this publication. In some instances a compound may be sold under different trade names and may vary as to label clearances.

Reproduction of Articles: RCE invites reproduction of individual articles, source cited with complete article name, author name, followed by Rutgers Cooperative Extension, Plant & Pest Advisory Newsletter.

For back issues, visit our web site at:
www.rce.rutgers.edu/pubs/plantandpestadvisory