

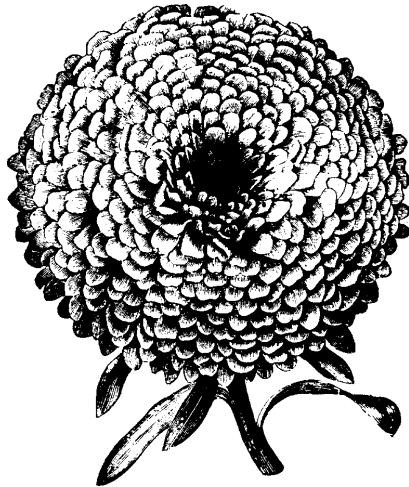
PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

JULY 17, 1997

Flower Pest Notes

Jim Willmott, Camden County Agriculture Agent



INSIDE

Flower Pest Notes 1

Ornamental Pest Notes 2

Plant Diagnostic Lab Highlights 3

Insects of Turfgrass 4

Diseases of Turfgrass 4

Weekly Weather Summary 5

Field Diagnostic Tours 5

◆ General

Except for spotty thunderstorms, most of the state has remained extremely hot and dry. Some areas in South Jersey have not received significant rainfall since May. Sandy coastal and pineland soils are excessively dry - even native vegetation shows drought symptoms. Dry soils increase potential for damage from insects and mites. Populations of many pests have remained high especially **leafhoppers, aphids, leafminers** and **mites**.

◆ Greenhouse and Field Grown Flowers

Chrysanthemum: Several species of **aphids** attack garden mums. Early detection is critical for control. Once plant canopy size increases, it is difficult to achieve good spray coverage. Don't wait too long to monitor your crop. **Aphids**, late in production, are trouble! **Aphid** populations are often resistant to insecticides - especially pyrethroids and organophosphates. Rotate between chemical classes to minimize chances for resistance and improve control. Many insecticides are labeled for foliar application. Soil/media applications of Marathon to young, actively growing plants will give extended control up to 12 weeks. When monitoring observe for beneficial predators and parasites. Insecticidal soap and horticultural oils are safe to most beneficials and work well - provided spray coverage is good. Insect growth regulators like Azatin, Enstar II, Neemazad and Precision are safe to adult beneficials. **Leafminers** are active. Damage begins as brown spots which enlarge into blotches that cover leaves. Look for black fecal pellets on foliage. Often larvae can be observed by holding infested leaves up to lights. A hand lens with 10 - 20X helps in seeing them. Adult leafminers are small, yellow and black flies. They can easily be detected with yellow sticky traps. Astro, Avid, Citation, Dursban, neem products and Pounce are labeled for field use. Monitor mums for other likely pests including: **two spotted spider mites, thrips, caterpillars, plant bugs** and **whiteflies**.

◆ Ornamental Cabbage and Kale

Various **caterpillars** attack and reduce the ornamental quality of this fall crop. Frequent monitoring and early detection are key to control.

Poinsettia cuttings should be checked closely on arrival for evidence of **whitefly** infestation. Egg, nymph, and pupal stages infest lower leaf surfaces and, unlike winged adults, are often overlooked. Small infestations on cuttings can increase rapidly into larger infestations later

SEE FLOWERS ON PAGE 2

in the crop cycle. Also, be sure production greenhouses are free of weeds that can harbor **whiteflies** and **thrips**. **Thrips** damage young plants by feeding on newly developing tissue. Growth distortion and scarring are often evident as foliage develop. Finally, be sure to eliminate **fungus gnat** infestations before sticking cuttings. Treat floors and other surfaces that may harbor **fungus gnat** larvae. Labeled products include Dursban, Knox-out and several insect growth regulators including Precision. Monitor for adults after treating with yellow sticky cards. Adults can be controlled with aerosol "bombs".

◆ **Field grown cut flowers**

Asclepias (Butterfly weed) may be troubled with **mites** - especially when grown under high moisture and fertility. **Aster spp.** are prone to **aster yellows**, an infectious disease that can ruin crops. It's transmitted by **leafhoppers**. Monitor **celosia** for **aphids** - celosia does not have many pests, but **melon and green peach aphids** can be troublesome. **Echinacea** (purple coneflower) damage by **Japanese beetle** is common in South Jersey. Damage may soon begin in the North. **Gladiolus thrips** prefer to feed in cloudy weather so damage should not be serious at this time. **European corn borer** may damage "glads", but populations remain low in most areas of the state except in Southern Hunterdon, Mercer and Somerset counties. **Gomphrena** (globe amaranth) is troubled by **aphids**, **mites** and **thrips**. **Leafhoppers** should be controlled on **Helichrysum** (strawflower) to prevent **aster yellows**. **Helianthus** (sunflower) is prone to problems with **aphids** and, when grown close to corn, **European corn borer** can be troublesome. **Spotted and striped cucumber beetles** feed on and damage flowers. **Leafminers** and damage were also observed in Camden County. Monitor and control **aphids** on **lilies** to prevent the spread of **lily mosaic virus**. **Phlox** is troubled by **mites** and **thrips**. A **melon aphid** infestation on **Salvia farinacea** (mealy-cup sage), in Burlington County, was "cleaned up" by Asian lady beetle larvae. **Zinnias** - **Japanese beetles** love them and should be monitored and controlled now. □

Ornamental Pest Notes

Deborah Smith-Fiola, Ocean County Agricultural Agent and Steven K. Rettke, Landscape IPM Program Associate

✓ **Pine Needle Scale** (1290-1917 GDD = 2nd generation): This native armored scale can be found feeding on most needle-bearing conifers. Under heavy infestations (10 live scales per inch of candle shoot) needles turn yellowish, then brown with eventual die back. From a distance, the foliage may look white to gray. The second generation reddish crawlers are active throughout most of July and into August, feeding only on the needles.

The adult female covers are about 1/8 inch long and are white, oystershell shaped. During July, turn over female covers and examine with a hand lens to determine if eggs or crawlers are present. Recently hatched active crawlers are flat and reddish in color. These clumsy crawlers move precariously to new parts of the tree in search of suitable needles to feed upon. Once the crawler settles and inserts its hair-like mouthparts into a needle to feed, it changes to a translucent, yellow color. It then immediately begins to form its new protective waxy armor. This protective cover is quite thin at first and does not thicken until after the nymph completes its first molt (after 2 weeks). Therefore, the crawlers will continue to be highly vulnerable to sprays for a couple of weeks.

Controls: Many lady beetles and wasp parasitoids feed on this pest. Look for holes in the covers that indicate the presence of these beneficials. To help conserve these beneficials, use horticultural oils or soaps on the crawlers or recently settled nymphs. Oils or soaps can also be combined together to achieve better control. Residual insecticides may be warranted if high populations exist and few beneficials are present.

✓ **Juniper Webworm** (1645-1917 GDD): This imported caterpillar feeds on many junipers, especially the upright forms. Mature larvae are about 3/4 inch in length and are tan with brown stripes and a black head. Foliage damaged by this pest will be webbed together and browned. During June and into July, 1/2 inch brown-winged moths may be found laying eggs within junipers. Shaking the plant will cause disturbed moths to fly out, but then quickly land again.

Egg hatch occurs from late July to early August in most of New Jersey. The young larvae initially mine the foliage, while the more mature larvae will consume them. Larvae feed inside tightly webbed branches (close inspection is necessary). The larvae overwinter within the webbed foliage. There is only one generation per year. Monitor for the off-color needles and webbing (most of the webbing is produced during the spring). Pull apart twigs webbed together and inspect for frass and the presence of the tan colored caterpillar.

Controls: If only a small number of branches are infested, cut out and destroy. A heavy infestation will require a residual spray. A pesticide (Orthene, Cygon) applied in the spring will kill overwintering larvae within the webbing. Sprays timed in the summer or fall will target the larvae of the next generation. Remember, newly hatched larvae feed as leaf miners before becoming surface feeders, therefore a systemic is needed to achieve suppression. Spray only if larvae can be detected. When webbed foliage is densely tied together, the sprays must be forceful enough to get past the webs. Both Pfitzer and Savin junipers are resistant to the Juniper webworm.

✓ **Pine Thrips on Scotch and Austrian Pines:** The dry conditions prevalent this summer favor the build-up of the second generation of this pest. Look for orange-yellow or black bullet-shaped insects, 1/16 inch long, on the buds or new needles throughout the season. The adults lay their eggs in May and there are several generations through-

out the season. The damage they cause is discolored, crooked or curled needles on new growth with brownish wound spots. Symptoms are very similar to drought type injury. Control is best applied in early May. Use Orthene or Cygon now if necessary.

✓ **Azalea Lacebugs (802-1029 GDD):** The second generation of this pest is in full swing at this time. Look for the presence of nymphs (spiny, black), adults (larger, lacy wings), fecal spots (brown, shiny spots) on the *underside* of leaves, and stippling (feeding damage from nymphs and adults) on the leaves. Remember, the yellow stippling damage persists on the leaves until they are dropped. Look for the presence of actively feeding nymphs or adults before treating. If found, use horticultural oil or insecticidal soap (*if* the branching habit is open enough to allow contact of the oil to the back of the leaves), or acephate (Orthene). Remember, stressed azaleas in full sun are more prone to lacebugs.

✓ **Webworms:** Fall Webworm will be starting a second generation in most deciduous trees. Webs increase in size as the caterpillars within mature. Caterpillars stay within the web to feed, often encompassing several branches. Leaves appear scorched and webs are unsightly. **Mimosa Webworm** feeds on honeylocust and mimosa. Caterpillars first web leaflets together, then expand to cover branches. Control both by pruning out webs when small (monitor!). B.t. works against 1" or smaller caterpillars. Orthene is also labeled.

✓ **Two-Spotted Spider Mite (1300-2000 GDD):** This spider mite species is a warm season mite. It has a very diverse host range, feeding on annual and perennial flowers as well as many conifers and deciduous trees and shrubs. Reddish-orange adult females overwinter primarily in the soil. Active adults are greenish yellow with a black spot on each side of the body (these dark spots are accumulated waste deposits). Eggs laid during the season are white to yellow in color.

Two-spotted mites have mouthparts that are designed to pierce individual plant cells in order to remove the contents. The destroyed plant cells appear as minute white-to-yellow stipples on the foliage. With large mite populations, the stipples coalesce and major sections of the foliage become discolored, stunted or even killed. Also with heavy populations, this mite will produce significant webbing which may collect dust, causing further unsightliness. These mites do not reach damaging populations during cool, rainy periods. However, during hot and dry periods in the summer, their populations can increase dramatically. With extended warm temperatures, a new generation can be completed every 5 days.

Control: Early detection and monitoring of spider mites is important *before damage is noticed*. Look for early signs of stippling with the beginning of hot summer weather. Mites can be dislodged by taking a piece of white paper on a clipboard and striking some plant foliage over it. Use a hand lens to look for spider mites with two spots on the body. If more than 10 mites are dislodged with each branch strike, then significant damage may occur. Also look for faster moving predacious mites that have a uniform yellowish to translucent color with a more pear-shaped body. Compare the relative abundance between the pest and beneficial mites. Also inspect for other types of predators (such as lacewings and lady beetles). Use 1% to 2% horticultural oil or soap sprays (watch label precautions) for low mite populations to conserve any beneficials present. Use a residual miticide (Avid, Morestan, Kelthane) when mite populations are high and only a few beneficials are present. Do not use Sevin or Tempo on mites.

✓ **Black Vine Weevil:** Nocturnal adults feed by notching the edges of leaves of broadleaf evergreens (also yew, etc.). Trap adults with pitfall traps, or control with Orthene (so-so control), Tempo, Talstar or Scimtar (2-3 applications are needed). Underground grub control with beneficial nematodes has also shown from 50-85% control. □

Plant Diagnostic Lab Highlights

Richard J. Buckley, Coordinator,
Plant Diagnostic Laboratory

◆ Turf

Anthracnose, caused by the fungus *Colletotrichum graminicola*, is the most prevalent problem on annual bluegrass and bentgrass golf greens this summer. **Anthracnose** was found on samples from New York, and Cape May, Essex, and Monmouth counties in New Jersey. Other summertime diseases are also beginning to cause problems for area turf managers. **Summer patch** was diagnosed on golf turf from New York and Bergen and Burlington Counties. **Pythium blight** was confirmed on samples from Atlantic and Sussex Counties, and **brown patch** was identified on turf samples from North Carolina, and Union and Atlantic Counties. In landscape turf, **brown patch**, **dollar spot**, and **red thread** are now all active.

◆ Landscape

The most common landscape plant sent to the laboratory this period was myrtle. Several samples were submitted from Bergen, Middlesex, and Somerset Counties. In each case, the ground cover declined rapidly with the onset of summer-like weather patterns. The fungi, *Phoma* and *Colletotrichum*, were identified on the samples. These fungi are both reported to cause **cankers** and **dieback** of myrtle. **Root and crown rots**, caused by the fungi *Pythium*, *Rhizoctonia*, and *Sclerotinia* are quite active in herbaceous ornamentals at this time. Affected plants include impatiens, chrysanthemum, feverfew, and purplea. A hosta sample was submitted to the laboratory with **anthracnose**, caused by the fungus *Colletotrichum omnivorum*. **Atropellis canker** was diagnosed on pine brought to the lab from the state forest in the pine barrens.

Insect problems are also proving to be very common this year. **Catalpa sphinx moth** was identified on the catalpa leaves from an Atlantic County landscape. The moth has two color forms that were both represented on the sample. High populations of **lecanium scale** were found on the branches of a juniper sample from a Union County arborist. Samples of yew with **fletcher scale** were submitted from a Mercer County landscape. **Hemlock woolly adelgid** was found on hemlock from a Middlesex County landscape, and large **mite** populations were identified on juniper samples from Union and Middlesex counties. □

Insects of Turfgrass

Paula M. Shrewsbury, Ph.D., Ornamental and Turf Entomology

✓ **White grubs:** The **white grubs** you may find in your turf in the next few months are the immature stage of several species of scarab beetles which include **Japanese beetle, oriental beetle, masked chafer, green June beetle, and European chafers.** As you have probably noticed, many adult scarab beetles are active now! So get ready to start monitoring for grub activity and damage. If grub populations are at damaging levels, chemical controls should be applied. The best control strategy for **white grubs** is to target the young **grubs** just after they have hatched. This is usually around mid-August in New Jersey. At this time, chemical controls include trichlorfon (Dylox), isazophos (Triumph), fonophos (Crusade), ethoprop (Mocap), bendiocarb (Turcam), or disunion (not on golf courses or sod farms).

✓ **Billbug** larvae are active at this time. **Billbugs** prefer highly maintained Kentucky bluegrass, but can also be a pest on perennial ryegrass, fescue, and tall fescue. Their feeding results in small, irregularly shaped brown patches that pull up easily when tugged on. Young **billbug** larvae feed in the stem of the turf and control at this time is very difficult. However, currently the older billbug larvae have dropped out of the stems to the soil where they feed on the roots of the turf (occurs between 925 and 1035 DD_{base 50}). Check the "Weather Summary" which can be found in every issue of this newsletter for DD accumulations in your area. When DD accumulations enter the range mentioned above you should begin monitoring. Monitor for larval damage by tugging on tufts of grass. Damaged turf will pull up easily and sawdust-like frass can be seen around the crowns and in the stems. Visually examine the base of plants at the thatch/soil interface and the top 4" of soil for the presence of larvae. Chemical controls for larvae include bendiocarb (Turcam), carbaryl (Sevin), imidacloprid (Merit - this is a systemic and must be applied early), bifenthrin (Talstar), disunion (not on golf courses or sod farms), ethoprop (Mocap), fonophos (Crusade), or isofenphos (Oftanol). Entomopathogenic nematodes (*Steinernema carpocapsae*) have been demonstrated to give good control and are commercially available. If infestations are not too high, damage may be masked with adequate irrigation and fertilization.

✓ **Black turfgrass Ataenius: Black turfgrass Ataenius** is a pest of golf course fairways, greens, tees, and collars. They are also scarab beetles, except they have 2 generations per year. The adults are shiny black and about 1/4" in size. Second generation larvae are usually active from late July through early August. The larvae (very small white grubs) feed on the roots resulting in wilting, thinning, and browning of turf and can be active now (when vanhouette spirea is in full bloom). Begin moni-

toring now. Monitor grubs by cutting turf (1 sq. ft.) on 3 sides and lifting it. Examine the top few inches for small white grubs. A cup cutter may also be used for sampling grubs (multiply number of grubs per cup cutter by 10 to get per sq. ft. count). Concentrate monitoring in areas where there is decaying thatch or that is high in organic matter. Healthy turf can tolerate 30-50 grubs per square foot. If grub densities are high and damage is occurring, chemical control may be warranted. Chemical controls for grubs should be watered in thoroughly and include bendiocarb (Dycarb, Turcam), ethoprop (Mocap), isazophos (Triumph), or trichlorfon (Dylox, Proxol). Entomopathogenic nematodes (*Heterorhabditis bacteriophora* or *Steinernema glaseri*) will also provide good control.

✓ **Annual Bluegrass weevil (*Hyperodes*): Annual bluegrass weevil** is a pest of short cut (less than 0.75") annual bluegrass. Young larvae feed within the plant and older larvae come out of the plant and feed on the crowns of the turf. This causes the turf to yellow, wilt, and turn straw colored. Damage first appears along the edges of fairways near woods or perimeters of greens and tees. You should be monitoring your short cut annual bluegrass around tees and greens for second generation larvae feeding near the crowns now. If larval densities are high and damage is occurring, an application of isazophos (Triumph) or chlorpyrifos (Dursban) may be warranted. Only treat areas where populations are high and damage is occurring (hot spots). Control strategies should also include adequate irrigation, raising mowing height if possible, and reducing the amount of annual bluegrass in the turf.

Remember to monitor for **chinch bug, sod webworm, and cutworm** activity and damage. These pests may be active throughout most of the season. However, damage usually is not noticed until now when pest populations are often higher (second generation) and turf is not actively growing and cannot tolerate as much injury. □

Diseases of Turfgrass

Bruce B. Clarke, Ph.D., Turf Plant Pathology

◆ Turf Field Day

The date for this year's **Rutgers Turfgrass Research Field Day for "Golf and Fine Turf"** has been set for August 13, 1997 at Hort Farm II, Ryders Lane, in North Brunswick, NJ. Registration will begin at 12:30 p.m., "rain or shine." Guided field tours will commence at 1:30 p.m. Field Day will conclude with a barbecue dinner at 5 P.M. The cost of registration is \$20.00 without dinner and \$30.00 with dinner. Recertification credits will be awarded at the conclusion of the program so mark your calendars now for this worthwhile event. Call (732) 932-9400 for further information or directions. □

Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged slightly above normal. Extremes were 97 degrees at Pemberton on the 14th and 50 degrees at Newton and Charlotteburg on the 11th. Weekly rainfall averaged 1.03 inches North, 0.64 inches Central, and 0.48 inches South. The heaviest 24 hour total was 2.01 inches at Belvidere on the 9th to 10th. Estimated soil moisture, in percent of field capacity, this past week averaged 72 percent North, 56 percent Central and 38 percent South. Four inch soil temperatures averaged 71 degrees North, 74 degrees Central and 74 degrees South.

Weather Summary for the Week Ending 8 a.m. Monday 7/14/97

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	2.01	13.63	-3.57	90	52	71.	-1	1043	-104	82
CANOE BROOK	.38	12.71	-5.59	95	55	76.	3	1273	126	60
CHARLOTTEBURG	.94	16.04	-2.45	89	50	70.	0	974	53	68
FLEMINGTON	.35	13.69	-3.93	94	54	74.	0	1080	-104	59
LONG VALLEY	1.20	15.59	-3.26	87	55	71.	0	958	-35	72
NEWTON	1.32	13.82	-3.00	89	50	71.	0	860	-156	74
FREEHOLD	.82	14.47	-2.70	95	58	77.	3	1249	-36	62
LONG BRANCH	.00	14.12	-3.01	89	59	74.	0	1196	-14	25
NEW BRUNSWICK	1.23	17.42	.47	93	56	75.	0	1229	-133	77
PEMBERTON	.18	14.40	-2.52	97	56	76.	2	1418	96	32
TOMS RIVER	.50	13.82	-3.53	95	54	75.	1	1227	7	43
TRENTON	1.10	17.15	1.12	93	53	74.	-2	1230	-189	61
CAPE MAY CRT HSE	.51	14.41	-.76	91	58	75.	0	1271	-31	28
DOWNSTOWN	.42	13.23	-2.52	94	56	75.	0	1296	-136	40
GLASSBORO	missing									
HAMMONTON	.54	13.98	-2.66	95	55	75.	-1	1283	-123	35
POMONA	.28	14.70	-.32	94	56	76.	2	1290	-10	29
SEABROOK	.74	14.42	-.78	94	59	77.	1	1402	-39	45
ATLANTIC CTY MRNA	.39	10.83	-3.55	89	61	75.	1	1274	52	29
WOODSTOWN	.20	13.78	-3.16	97	55	76	NA	1421	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week		242	(Ending 07/07/97)							
This Week		248	(Ending 07/14/97)							

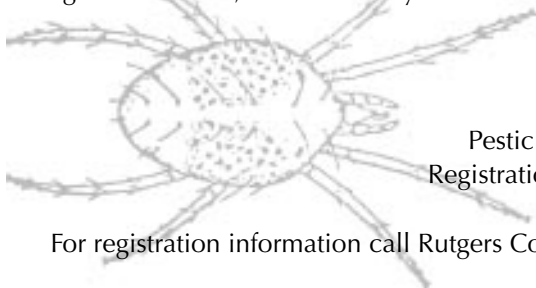
Field Diagnosis of Insect, Mite and Disease Problems on Trees and Shrubs

Thursday, August 7, 1997

8 a.m. - 12 noon

Medford Leas, Medford, NJ

Tour Leaders: Jim Willmott, Camden County Agricultural Agent; and Steven K. Rettke, Landscape IPM Program Associate, Ocean County



Turfgrass Disease and Insect Pest Update and Field Diagnostic Tour

Thursday, August 21, 1997

8:00 a.m. - 12 noon

Medford Leas, Medford, NJ

Speakers and Tour Leaders: Paula Shrewsbury, Ph.D., Ornamental and Turf Entomology, Extension Specialist; Jim Willmott, Camden County Agricultural Agent; and Steven K. Rettke, Landscape IPM Program Associate, Ocean County

Pesticide credits available.
Registration: \$10.00 per meeting.

For registration information call Rutgers Cooperative Extension of Camden County, (609) 566-2900.

Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
P.O. Box 231
Cook College
New Brunswick, N.J. 08903-0231

PLANT & PEST ADVISORY LANDSCAPE NURSERY & TURF EDITION CONTRIBUTORS

RCE Specialists and Staff

Raul I. Cabrera, Ph.D., Nursery Management
Bruce B. Clarke, Ph.D., Turf Pathology
Ann B. Gould, Ph.D., Ornamentals Plant Pathology
Joseph R. Heckman, Ph.D., Soil Fertility
James A. Murphy, Ph.D., Turf Management
George J. Wulster, Ph.D., Floriculture
Paula Shrewsbury, Ph.D., Ornamental & Turf Entomology
Richard J. Buckley, Coordinator, Plant Diagnostic Laboratory

RCE County Agricultural Agents and Program Associates

Atlantic, Charlene H. Costaris (609-625-0056)
Bergen, Joel Flagler (201-599-6162)
Burlington, Raymond J. Samulis (609-265-5050)
Camden, James Willmott (609-784-1001)
Cumberland, James R. Johnson (609-451-2800)
Essex, Jonathan H. Forsell (201-678-7988)
Gloucester, Jerome L. Frecon (609-863-0110)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Middlesex, William T. Hlubik (908-745-3443)
Monmouth, Richard G. Obal (908-431-7261)
Morris, Edmund Milewski (201-285-8300)
Ocean, Deborah Smith-Fiola (908-349-1246)
 Steven Rettke, Prog. Assoc. IPM
Passaic, Stanley Kamara (201-305-5742)
Somerset, Clare S. Liptak (908-526-6293)
Union, Madeline A. Flahive, Prog. Assoc. (908-654-9854)
Warren, William H. Tietjen (908-475-6505)

Newsletter Production

Jack Rabin, Assistant Director, NJAES
Cindy Rovins, Editor and Designer

Rutgers Cooperative Extension provides information and educational services to all people without regard to sex, race, color, national origin, disability, handicap or age. Rutgers Cooperative Extension is an Equal Opportunity Employer.

Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The user is responsible for the proper use of pesticides, residues on crops, storage and disposal, as well as damages caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact Rutgers Cooperative Extension in your County.

Use of Trade Names: Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances a compound may be sold under different trade names, which may vary as to label clearances.