

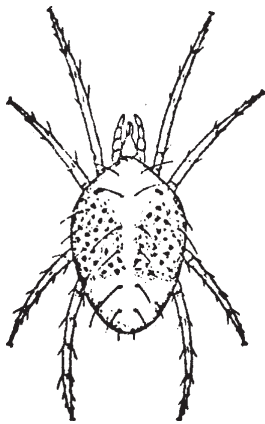
PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

JULY 16, 1998

Ornamentals Pest Notes

Deborah Smith-Fiola, Ocean County Agricultural Agent, and Steven Rettke, Program Associate in IPM



MIMOSA WEBWORM (880 GDD) (1st generation larvae hatch):

This tent/web-forming caterpillar has been actively feeding in mimosa and honeylocust - especially the thornless varieties of honeylocust ("Moraine"). The young caterpillars initially web leaflets together, and then expand the web to include several branches as they grow. Older larvae actually consume foliage. The webbed foliage is unsightly, giving trees an ugly gray/brown appearance. The adults have the habit of laying their eggs on the old webs, so the second generation (due in early August) magnifies the damage, and large populations may defoliate the tree.

Since there may be many webs in one tree, hand pulling/pruning is usually ineffective. Monitor for the first signs of webbing of the second generation (1800 - 2100 GDD; when *Hydrangea paniculata* is blooming) and apply B.T. on small larvae. Conserv (spinosad) may also be used with reduced impact on beneficials and non-target organisms. Residual pesticides, such as Orthene, Scimitar/Battle, Tempo 2, Diazinon, Mavrik, or Talstar may be used to control older larvae; be sure to drench foliage thoroughly. The 4 latter insecticides may cause a spider mite flareup following application, so a miticide may be necessary.

JUNIPER WEBWORM is another web-making caterpillar, which fastens needles and twigs of juniper together. The black-headed, brown-striped caterpillar is well hidden within the webs. It initially mines within the foliage, completely consuming needles when larger. Symptoms appear first similar to spider mite damage since needles are yellowing, but webbed needles will brown and die. Pull apart needles, paying close attention to the densest part of the plant, and look for the silk webbing, caterpillars, and frass. Prune out small infestations. A systemic spray of Orthene will offer good control; sprays of residual insecticides must penetrate the dense webs. Dursban, Mavrik, Tempo 2, Conserv, Diazinon are labeled for treatment in late July/early August (1645 - 1917 GDD). 'Savin' juniper and 'Pfitzer' juniper are reported to be resistant.

CHINCH BUGS (1903-2160 GDD): During the middle of July, chinch bug populations are composed of mostly adults and late nymph stages (4th and 5th instars). Adult chinch bugs are 1/5" long and are black with white markings on the wings. The immature stages are

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similar in shape to the adults, but can be considerably smaller and often have red or orange markings.

Symptoms of damage from the first generation should be evident by now, if populations were high enough (typical treatment thresholds are 15 to 20 per sq. ft.). Chinch bug populations usually thrive in drought stressed turf with a thick thatch layer. These conditions are common with turf growing in more sandy type soils. The sandy soils not only encourage the dry environments which this pest prefers, but also promote faster thatch build-up. This occurs because sandy soils have less organic matter and hence, fewer microorganisms available to decompose thatch.

The naturally occurring fungus *Beauveria bassiana* has done a fairly good job of suppressing this 1st generation of chinch bugs this year, because of the extensive rainfall we had in most areas of the state this spring. High populations of this pest the past month were only noticed in those sites having exceptionally hot, dry and thatchy lawns. The *Beauveria* fungus, however, cannot often be counted on to provide much suppression against the 2nd generation of chinch bugs, since this fungus does not thrive in the hotter and dryer conditions commonly encountered during August and September. Therefore, chemical control options may be more often required against the 2nd generation of chinch bugs that have exceeded threshold levels.

Control: If chinch bug population densities can be maintained below 15-20 insects per square foot, pesticides can often be curtailed. Water the turf, since this pest thrives in dry conditions. Chlorpyrifos (Dursban), bendiocarb (Turcam), carbaryl (Sevin), and most of the pyrethroids are all labeled for control of chinch bugs. Use endophyte-containing cultivars when over-seeding or renovating damaged areas.

COTTONY MAPLE SCALE (802-1265 GDD): This soft scale is common on many different shade trees, such as maple, elm, sycamore and linden, but primarily a problem on red and silver maples. The large white egg sacs may be obvious now, but crawlers are hatching. After hatch, the crawlers move to the undersides of the leaves to feed for the summer. In the fall they move back to the branches to overwinter. As with all soft scales, honeydew is produced and is a problem in heavy infestations, as is leaf yellowing and dieback of branches. A summer oil (follow label precautions) or insecticidal soap contacting crawlers under the leaves can give good control. Acephate (Orthene) gives good control when crawlers are feeding on leaves. If the population is light, no action is recommended. It may take 1-2 summers for natural enemies to control the problem. A dormant oil application in late winter will control most scales.

AZALEA LACEBUGS (802-1029 GDD) (nymphs/adults of 2nd generation): 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 (only if the branching habit is open enough to allow contact of the oil to the back of the leaves), or acephate (Orthene) if the shrub is too dense to allow effective use of oil. Merit applied now will control only subsequent generations. Remember, stressed azaleas in full sun are more prone to lacebugs.

FALL WEBWORM (1266-1795 GDD) (1st generation larvae): These caterpillars produce a web similar to the eastern tent caterpillars, except the web is at the **tips** of branches, and the fall webworm never leaves the protective webbing. When they need more food, the boundaries of web are extended to include more foliage. There are many hosts, but some are preferred (mulberry, walnut, elm, ash, apple, hickory, sweetgum). Unsightly webs can be pruned out, or ripped open with a stick or stream of water, usually destroying the caterpillars. These are true caterpillars, so *B.t.* will control them if the application is applied now, early in their development. The new biorational product called **Conserve** (a microbial extract), will do an excellent job of suppressing even the large, late instar larvae (for your future consideration, reports from the field this past spring have indicated that **Conserve** very effectively controlled both Eastern tent caterpillars and gypsy moths during various stages of their developments). Numerous other labeled products include Scimitar, Dursban, Tempo, Sevin and others. Watch for a second generation in August.

NANTUCKET PINE TIP MOTH (1514- 1917 GDD) (2nd generation adults): The second generation adults begin to emerge from their pupation stage when GDD numbers exceed 1500. This GDD accumulation sometimes occurs in the middle of July (as it will this year), but usually it is not reached until later in the month. Pheromone traps work *very* well, and are useful to time adult emergence (adults are small silvery gray moths with wavy gold bands across the wings). Eggs are laid on the tips of new growth of pines, especially 2-3 needle pines, and particularly smaller trees less than 6' tall and growing in full sun. Hatched larvae will mine into branches and kill the shoot. Apply Cygon 5-10 days after the first adult trap catch on heavily infested sites (Cygon is particularly effective as a pine systemic). If pine shoots were pruned out in June, populations should be minimal. Other pesticides labeled include bendiocarb (Dursban), acephate (Orthene), cyfluthrin (Tempo), and imidacloprid (Merit).

TWO SPOTTED SPIDER MITES (1300- 2000 GDD):

The list of host plants of this warm season mite is considerable. A partial list includes juniper, dwarf Alberta spruce, hollies, spruce, arborvitae, perennials, etc., etc. These mites can have an entire generation occur in less than 10 days if temperatures exceed 85% F. Symptoms include stippling damage and webbing. Affected foliage yellows then turns brown and dies if mites are not controlled. Damage does not recover, so early detection and timely control is the best management technique. Monitor with a beating tray (or white clip board) by rapping foliage on the board and looking for the tiny mites which drop off. A hand lens can be used to note what lifestage is present (on the underside of foliage), but this is slower than the use of the beating tray. Very fast predatory mites may be seen, with light colored bodies and long legs. If predators are noted, keep monitoring to be sure they are reducing the spider mite population, and that the mites don't overwhelm the predators.

Control with horticultural oil (check the label for weather conditions and make sure the plant is not under drought stress) which kill eggs and active forms, as long as mites are contacted (on the underside of foliage). Oxythioquinox (Morestan) is another excellent choice which also kills eggs, but should not be sprayed on wet foliage or during high humidity. Hexygon (hexythiazox) is a new miticide which kills immature mites and eggs and prevents adults from laying eggs. Abamectin (Avid) provides a quick kill and long residual; but like Kelthane, fluvalinate (Mavrik), and chlorpyrifos (Dursban), these products may need 2 applications since they only control active mites. Note that Imidacloprid (Merit) is not a miticide. Even though the new product Conserve does list mites on the label, field reports on its effectiveness are less than satisfactory.

PINE NEEDLE SCALE (1388-1917 GDD) (2nd generation crawlers): The second generation of this armored scale is about to hatch out. These white oystershell shaped scales can be found on the needles of many conifers (spruce, fir, pine, hemlock and Douglas fir). Pines such as white, mugo, Scots and Austrian are preferred. The crawlers are red (use magnification to see them) and turn yellow once they settle to feed. With a hand lens, check under the scale covers to monitor both the stage of development and the effectiveness of any previous controls. If there is nothing under the cover, the scales are dead. If there are red eggs, they will be hatching out soon. If there are dry, empty "egg shells" under the cover, the crawlers have already hatched out. Crawlers can be controlled with horticultural oil (follow all label precautions, avoid high heat and humidity) or insecticidal soap (follow all label precautions). Also labeled for crawler control are acephate (Orthene), cyfluthrin (Tempo) and malathion. Look for holes in the scale covers, indicating beneficial wasps feeding. □

Plant Diagnostic Lab Highlights

Richard Buckley, Coordinator, Plant Diagnostic Laboratory

Turfgrass

Summer disease problems are in full swing on most turf areas throughout the state. Intervals between hazy, hot, and humid conditions and periods with high skies and drying winds are contributing to a variety of problems on turfgrass at this time. During the hazy periods outbreaks of **brown patch** and **pythium blight** were common. **Pythium blight** was identified on samples from Maryland, and Pennsylvania, as well as on golf turf from Somerset, Burlington, Cape May, Essex, Camden, and Bergen Counties. **Brown patch** was diagnosed on samples of residential turf from Bergen, Camden, and Middlesex Counties. Two other common summer problems, **summer patch** and **anthracnose**, are increasing at this time. **Summer patch** was confirmed in samples from golf courses in Somerset and Monmouth Counties, and on residential turf in Somerset County. **Anthracnose** popped-up on golf courses in Maryland and New York. The disease was also found on green samples from Monmouth and Bergen Counties.

During the dry periods, steady breezes caused assorted dry spots on many golf courses. Fairways seem to suffer the most injury because the dry spots are less visible and harder to hand water. Poor soil conditions (clay/thatch) almost always contribute to the problem. The fungi *Leptosphaerulina* and *Curvularia* often attack the stressed grass causing thinning and yellowing. Close attention to stress management and the use of contact fungicides normally cleans up the problem. In some cases, the dry spots fail to respond to hand watering. On golf courses in Pennsylvania and Monmouth and Camden Counties very high populations of **nematodes** were identified. **Root knot, lance, spiral, stunt, and ring nematodes** were common in all of the samples. It is important to remember that nematodes do very well in the sand-based green construction that is popular at this time.

The second generations of the **black turfgrass atenioides** and the **Hyperodes weevil** are active at this time. Egg laying for each pest is currently taking place as adult beetles were found in several samples. Once again fairway turf seems to suffer the most injury.

Landscape

Anthracnose of ash, oak, sycamore, and maple continue to flow in from around the state. This year has been the best year for **anthracnose** that I have ever seen! **Verticillium wilt** was confirmed on a maple from Ocean County. Insect problems this period include **cottony camellia scale** on holly from Cape May County, and **hemlock woolly adelgid** on hemlock from Sussex County. □

Diseases of Turfgrass

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

General

Brown patch and **pythium blight** have been quite severe on greens and tees during the past few weeks. These diseases should continue to be troublesome as long as the weather remains hot and humid. **Anthraxnose**, **dollar spot**, **copper spot**, and **red thread** are also quite prevalent on golf and landscape turf at this time. Since all three diseases are stimulated by environmental and cultural stress, maintain optimum turf vigor (i.e., provide adequate soil fertility and soil moisture) to reduce disease severity. Refer to recent issues of this newsletter for complete disease control recommendations.

Anthraxnose

This disease, caused by the fungus *Colletotrichum graminicola*, has been quite prevalent on annual bluegrass, fine fescue, perennial ryegrass, and Kentucky bluegrass recently. The fungus typically attacks turf growing under low soil fertility and/or heat and drought stress. Low cutting height can also enhance symptom development. To identify **anthraxnose** in the field, look for small black fruiting bodies with protruding black spines. For best results, increase turf vigor with light applications of nitrogen, maintain adequate irrigation, reduce thatch, and raise the cutting height (whenever possible). On a preventive basis, apply Banner, Bayleton, Cleary 3336, Daconil, Heritage, Manicure, Rubigan, Sentinel, or Thalonil per manufacturer's recommendations. Once the disease develops, however, apply a tank mix of Bayleton 25DF (2 oz/1000 ft²) + Daconil 2787 4F (10 to 12 fl oz/1000 ft²) or a tank mix of Cleary 3336 50W (4 to 6 oz/1000 ft²) + Daconil 2787 4F (10 to 12 fl oz./1000 ft²) for best results.

Slime mold

Although not actually a disease, there have been recent inquiries regarding the appearance of tan to black colored clumps on turf, flower beds, and home gardens. In many cases, this material has been reported to occur virtually overnight on plant stems, grass blades, soil mounds, or other vertical objects. Upon close examination, these mysterious structures have been identified as clumps of the common **slime mold** fungus *Fuligo*. *Fuligo* is not injurious to plants and will soon disappear on its own. It can be easily dispersed with a rake or steady stream of water, if desired. No fungicides are recommended.

Summer Patch

This disease, caused by the root-infecting fungus *Magnaporthe poae*, is prevalent on annual bluegrass, Kentucky bluegrass, and fine fescue turf throughout the state. For those turf managers who are on a preventive spray program, now is the time to apply the third and

perhaps final fungicide application for the control of **summer patch**. For optimum results, apply Banner 1.24 MC (4 fl oz product/1000 ft²), Rubigan 1AS (4 fl oz product/1000 ft²), Bayleton 25DF (4.0 oz product/1000 ft²), or Heritage 50WG (0.4 oz product/1000 ft²) in 4 to 5 gal of water/1000 ft². If fungicides cannot be applied with this much water, irrigate them into the thatch immediately with 1/16 to 1/8 inch of water. Aerification and improved drainage will also aid in disease suppression. Soil pH should be maintained at or slightly below 6.0 for best results.

Turf Field Day

The date for this year's **Golf and Fine" Turf Research Field Day** has been set for August 6, 1998 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. The day will conclude with a barbecue dinner at 5 p.m. The **"Lawn and Landscape" Turf Research Field Day** will be held on August 5, 1998 at Hort Farm II, Ryders Lane, North Brunswick, NJ. Registration will commence at 8:00 a.m. (rain or shine). Research tours will start at 9:00 a.m., and will conclude at 3:30 p.m. The cost of registration each day is \$20.00 without a meal and \$30.00 with a meal. Recertification credits will be awarded for both days, so mark your calendars now for these worthwhile events. Call Marlene at (732) 932-9400 for further information or directions. □

Deer Fencing Seminars

The Rutgers Snyder Research & Extension Farm, in cooperation with the New Jersey Department of Agriculture and the Division of Fish, Game & Wildlife will be holding a seminar on August 4, 1998 at the Snyder Research & Extension Farm located in Pittstown, NJ and on August 5, 1998 at the Rutgers Agricultural Research & Extension Center located in Bridgeton, NJ.

The seminar will focus on selection and installation of high tensile woven wire fencing (HTWWF). Topics will include: Post and wire selection, post and wire installation (pounding vs. auguring), wire tensioning, etc. University as well as industry personnel will be on hand. HTWWF, when properly installed, can provide 25 plus years of near no-maintenance fencing.

HTWWF will be provided to New Jersey farmers who qualify for the fencing through the Department of Agriculture-Agriculture Economic Recovery and Development Initiative Deer Fencing Program. The trend is developing in the deer fencing industry, moving from high tensile electrified fence, to high tensile woven wire fence, due to better performance and low maintenance cost.

Please call the Snyder Research Farm at (909)730-9419 if you are interested in attending one of the two seminars. □

Diseases of Ornamentals

Ann B. Gould, Ph.D., Ornamental Plant Pathology

China aster

In China aster affected by **Fusarium wilt**, leaves turn yellow, the lower leaves wilt, and the roots decay. In some cases, the underground portion of the stem is coated with a pinkish mass of spores and mycelium. To manage **Fusarium wilt**, discard infected plants, prevent wounding, maintain adequate fertility, use resistant varieties, avoid extremes in soil moisture, and, if possible, replant next year in a new location. Thiophanate-methyl, applied as a soil drench, may provide some control on a preventive basis, but will not cure plants once they become infected.

Stem canker, caused by the fungus *Phomopsis*, also affects China aster. The lower stem of diseased plants exhibit a purple to brown discoloration. Unlike **Fusarium wilt**, however, the roots usually remain healthy. To manage **stem canker**, discard infected plants, prevent wounding, maintain adequate fertility, use resistant varieties, avoid extremes in soil moisture, and replant next year in a new location if possible. Thiophanate-methyl may provide some control (on a preventive basis) as a soil drench, but will not cure plants once they become infected. Add a spreader-sticker to improve spray coverage.

Snapdragon

Leaf rust on snapdragon can be troublesome this time of year. If left untreated, severely infected plants will eventually die. For best results, apply mancozeb at 7- to 10-day intervals; maneb weekly; myclobutanil at 10- to 14-day intervals; propiconazole (see label); OR use triadimefon at 14- to 21-day intervals.

To manage **powdery mildew** on snapdragon, spray Benefit, myclobutanil at 10- to 14-day intervals; thiophanate-methyl at 7- to 14-day intervals; triadimefon at 14-day intervals; OR piperalin plus a spreader-sticker or triforine at 7- to 10-day intervals.

Zinnia

During hot, dry weather, zinnia varieties susceptible to **stem and root rot**, caused by the non-water mold fungi *Fusarium* and *Rhizoctonia*, can rapidly wilt. To control **stem and root rot**, discard wilted plants, avoid soil moisture extremes, and drench remaining stock with fungicides at the intervals specified: Banrot (4 to 8 weeks); Benefit, thiophanate-methyl (2 to 4 weeks); iprodione (14 days); fludioxonil, triflumizole (3 to 4 weeks); OR PCNB at transplant and repeat once in 4 to 6 weeks.

At the first sign of **powdery mildew** on zinnia, the following products may be used: Benefit, fenarimol, myclobutanil (10 to 14 days); chlorothalonil, lime-sulfur, thiophanate-methyl (7 to 14 days); piperalin (see label); triforine (7 to 10 days); propiconazole (see label); triadimefon (14 days); triflumizole, Zyban (=Duosan) (7 days); OR use SunSpray Ultra-Fine Oil at 2- to 4-week intervals (outdoor plants only, conduct a phytotoxicity test on two or three plants of the same variety before treating the entire crop) or Phytan 27 (see label).

NOTE: avoid use of chlorothalonil during bloom where flower injury is unacceptable. □

Calendar of Events

July 22, 1998, 5:00 - 7:00 p.m. - Insect and Disease Control & Management Nursery Twilight Meeting, Marjac Nursery, Groff Road, Monroeville, NJ. Contact Marjac Nursery at 609-358-6535.

August 4, 1998 - Deer Fencing Installation Seminar, Rutgers Snyder Research Farm, Pittstown, NJ. Call Snyder Farm at (908) 730-9419, ext. 11 to register.

August 5, 1998 - Deer Fencing Installation Seminar, Rutgers Agricultural Research & Development Center, Bridgeton, NJ. To register, call Rutgers Snyder Research Farm at (908) 730-9419, ext. 11.

August 5, 1998 - Landscape Turf Research Field Day, Rutgers Turf Research Farm (Ryders Lane), North Brunswick. 8:30 - 3:30. Rain or shine. \$20 w/o lunch, \$30 w/lunch. Call 732-932-9400.

August 6, 1998 - Golf Turf Research Field Day, Rutgers Turf Research Farm (Ryders Lane), North Brunswick, 1:00 - 5:00 p.m. Rain or shine. \$20 w/o supper, \$30 w/ supper. Call 732-932-9400.

August 12-13, 1998 Penn State Turfgrass Field Days, Jos. Valentine Turfgrass Research Center and Landscape Mgmt. Research Center, University Park, PA, \$20. Call 814-863-3475.

August 17, 1998 - IPM Pest Clinic (Turfgrass); Adelphia Research Farm, \$5, 9:30-11:30, Contact RCE of Ocean County at 732-349-1246.

August 19, 1998, 5:00-7:00 p.m. - Weed Control/Production Management Nursery Twilight Meeting, Centerton Nursery then Hopewell Nursery, Bridgeton, NJ, Contact RCE of Gloucester County at 609-863-0110.

August 25, 1998 - IPM Pest Clinic (Ornamentals), Georgian Court College, Lakewood, \$5, 9:30-11:30. Contact RCE of Ocean County at 732-349-1246.

Pesticide Certification Exams: Bergen County (July 28, Aug 25, Sep 22); Burlington County (Aug 4, Sep 1); Cumberland County (Aug 6, Sep 3); Mercer County (Aug 7, Sep 4); Middlesex County (July 16, Aug 13, Sep 17); Morris County (July 22, Aug 20, Sep 23); Union County (July 14, Aug 11, Sep 15). To register call NJDEP Pesticide Control at 609-984- 6614.

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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.