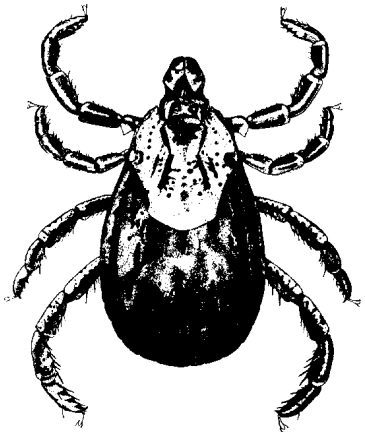
RUTGERS COOPERATIVE EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION $1.50 JUNE 19, 1997



American dog tick

INSIDE

June is Peak Tick Season

Deborah Smith-Fiola, Ocean County Agricultural Agent

Last summer's mild weather allowed for optimal survival and host finding for the northern deer tick (now known as the black legged tick), the vector of Lyme disease.

Because of the 2-year life cycle of this tick, last year's larvae have overwintered to molt into the nymph stage, which has peak activity in late May and June. The majority of all Lyme disease cases are the result of the bite of a nymph, usually this time of year.

The deer tick nymph is the size of a poppy seed. It has a black head and a black dorsal shield behind its head. The abdomen is creamy white and translucent before it feeds - after a blood meal, the abdomen darkens and swells. It takes 3 to 4 days for a nymph to finish feeding on an animal and completely engorge with blood — whereupon it swells to the size of a sesame seed, and drops off the host. This is how deer tick populations spread: they hitch a ride on an animal host such as a bird, feed for a few days, then drop off wherever that bird may have flown.

Research shows that 85% or more deer tick nymphs are found in the woods, typically in 4 - 6 inch high vegetation. This location offers the likelihood of finding a small animal to feed upon. Ticks don't fly, jump, or fall from trees. They find a host by crawling up low vegetation and *waiting* for an animal to walk by — then they grasp onto the skin/clothing, and crawl up. Knowing this, beware of walking in tall grass or the shrubby undergrowth in the woods. Widen trails to 6 feet or more to avoid brushing against vegetation. Some homesites will clear cut the shrubby understory layer of the adjacent forest to somewhat reduce the tick potential by mowing or bushhogging - but this has to be repeated annually (or else regrowth occurs along with increased wildlife and increased ticks!)

Not every tick carries Lyme disease. In order to transmit the disease as they feed, nymphs need to pick up the disease when they were a larva from an infected animal. The infection rate thus varies annually, typically from 10% to 25-30%. (Note that adult ticks have a higher infection rate [up to 45% in Hunterdon County last year]). Even if infected, research shows that the deer tick still must feed at least 24 hours to transmit the disease bacteria from its body to yours. Translated: this means that approximately one out of four ticks may be infected and able to transmit Lyme disease - if it feeds more than a day. So the trick is to *remove ticks as soon as possible*!

SEE TICKS ON NEXT PAGE

Plant Diagnostic Laboratory Highlights

Richard J. Buckley, Coordinator, Plant Diagnostic Laboratory

◆ Turf

Once summer-like temperatures begin turf becomes the big story in the Plant Diagnostic Laboratory. The fungus *Pythium* is beginning to activate. **Pythium blight** was identified on a sample from a Camden County golf course. **Pythium crown and root rot** was diagnosed in samples from Morris County and the Bronx, New York. **Dollar spot** and **brown patch** were diagnosed on turf from an Ocean County pitch and putt. **Anthracnose**, caused by the fungus *Colletotrichum graminicola*, is also beginning to show up on annual bluegrass and bentgrass golf greens. **Anthracnose** was found on samples from Atlantic, Essex, and Ocean counties. High populations of **annual bluegrass weevils** were found in golf turf from Essex, Monmouth, and Passaic counties, and from a Long Island course.

With the transition between spring and summer, cool weather diseases continue to remain active. **Take-all**, caused by the fungus *Gaeumannomyces graminis*, was confirmed in samples of bentgrass from Monmouth and Essex counties. Samples of **yellow patch** were submitted from Middlesex, Morris, and Camden counties, as well as two courses in Hershey, Pennsylvania. **Pink snow mold** was diagnosed on turf from Staten Island.

In landscape turf, **necrotic ring spot** was diagnosed on a sample from Connecticut. **Leaf spot and melting out** is active in Kentucky bluegrass at this time. The injury to the turf is the result of earlier season infections. **Leaf spot** samples have been submitted from Monmouth County turf managers and residential clients.

◆ Landscape

Environmental and cultural stress continue to be a major cause of problems in landscape plantings. Several yew and white pine samples were diagnosed with **wet feet**. An ornamental pear suffered from **transplant shock**. **Freezing temperatures** injured the leaves of maple, sourwood, and oak. Dieback, caused by the lingering effects of two **drought** years this decade, was diagnosed on several maple and oak samples.

Shade tree anthracnose has been quite damaging in New Jersey this spring. The laboratory continues to receive samples of maple, sycamore, and ash with the disease. The fungus *Phomopsis* caused cankers on paulownia and crab apple in a Cumberland County landscape. The trees were probably predisposed to attack by **drought** and **winter injury**. **Juniper tip blight**, caused by the fungus *Kabatina*, was identified on juniper from a Camden County landscape.

Maple bladder gall, caused by a mite, was identified on leaves of maple. The sample came from a landscape planting in Bergen County. Samples of rhododendron and dogwood with **Greedy scale** and **dogwood scale**, respectively, were submitted from a Bergen County landscape and tree service. **Juniper scale** was found on juniper samples from Camden County.

◆ Nursery and Greenhouse

A small Union County nursery grower submitted rhododendron with **Ovulinia petal blight**. **Juniper tip blight**, caused by the fungus *Phomopsis*, was active on several varieties of juniper in a Burlington County nursery. A **leaf spot**, caused by the fungus *Ramularia*, was found on persimmon in a Passaic County nursery.

◆ Identifications

Insect identifications this period include **cigarette**, **common carpet**, and **long-horned beetles**. Weed identifications include **orchard grass**, **red sorrel**, **evening primrose**, **curley dock**, and **cress**. An **American elm** and a **cherry plum** were identified for a Middlesex County resident. ❑

Ticks from previous page

Remove ticks only with tweezers. Bent, 'needle-nose' tweezers are preferred. Other methods, including using your fingers, petroleum jelly, a hot match, etc. may traumatize a tick - and a traumatized tick is likely to regurgitate its gut contents, which may include the Lyme disease bacteria. Grasp the tick under the head, and S-L-O-W-L-Y and firmly pull it out. Disinfect the wound with antiseptic. Save the live tick for identification (put it in a sealed container with a moist cotton ball in a cool spot). The Rutgers Plant Diagnostic Lab (908-932-9140), many county extension offices, the State Health Dept. and NJ Labs (a private company in New Brunswick) all identify ticks (the latter two for a charge which includes determining if infected).

Lyme disease symptoms include: a migratory rash (2" or more in diameter; appearing on 60% of victims, usually noticed 2-3 days after a bite); fatigue, memory loss, joint pain and inflammation, headache, difficulty concentrating, and flu-like symptoms. Symptoms may progress to mimic other, more severe diseases. See a doctor! Deer ticks and other ticks are now known to transmit other, less common diseases. Ehrlichiosis (HGE), has been identified since 1984, and was diagnosed in 8 people in New Jersey last year, with 2 deaths. Suspect ehrlichiosis if you have Lyme-like symptoms (fever, fatigue, chills, headache, muscle pain) early in the day, but by evening symptoms are severe, to the point of entering the hospital.

For more information, see your doctor and/or call your county agent for the free RCE bulletin, "Prevent Tick Bites, Prevent Lyme Disease." ❑

Diseases of Turfgrass

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

✔ **General: Leafspot and melting-out** is still quite noticeable on Kentucky bluegrass throughout the State. Many lawns have experienced severe thinning and are now prone to weed invasion. Although it's too late to spray for **leafspot and melting-out** now, infested areas should start to recover since the causal agent *(Helminthosporium = Drechslera)* only infects turf during cool, damp weather. **Take-all patch** is still very active on greens, tees and fairways at this time. **Stripe smut, cool season brown patch, brown patch, dollar spot, red thread,** and **necrotic ring spot** are also prevalent. **Dollar spot** sprays should now be in place. Refer to recent issues of this newsletter for complete disease control information.

✔ **Brown Patch:** This disease, caused by the fungus *Rhizoctonia solani*, continues to be reported on tees, greens, and home lawns due to the warm, humid weather. For best results, avoid heavy applications of nitrogen fertilizers during hot weather, water in the early morning hours, and spray turf with Chipco 26019, Cleary 3336, Curalan, Daconil, Eagle, Fungo, Heritage, mancozeb, Manicure, Prostar, Sentinel, Thalonil, or Touche per manufacturer's recommendations.

✔ **Dollar Spot:** The 1997 **dollar spot** season has arrived. This disease, caused by the fungus *Sclerotinia homoeocarpa*, was observed on greens and tees last week (June 13-15). To prevent **dollar spot** from causing damage on susceptible turf again this year, maintain adequate nitrogen fertility, water in the early morning hours, reduce thatch, avoid the sole use of any fungicide for prolonged periods of time (to reduce the possibility of fungicide resistance), and apply Banner, Bayleton, Chipco 26019, Curalan, Daconil, Eagle, mancozeb, Manicure, Rubigan, Sentinel, Thalonil, Touche, or Vorlan. Repeat fungicide applications as needed through late-October.

✔ **Fairy Rings:** This disease, caused by a group of fungi known as *basidiomycetes*, is starting to show up on golf greens and home lawns at this time. Symptoms typically appear as continuous or interrupted rings of dark-green turf. Mushrooms, which are often associated with this disease, usually develop only in the mid-spring and fall months. Although chemicals have been relatively ineffective against these fungi in the past, Prostar has shown promise in university tests. For now, maintain adequate fertility and soil moisture to mask symptom expression. Spiking affected turf prior to irrigation should enhance water movement into the soil profile.

✔ **Pythium Blight:** We will start to see **pythium blight** soon on golf and landscape turf with a return to hot, humid weather. **Pythium** thrives in low or poorly drained areas, especially when the night temperatures are above 70°F. For best results, improve drainage, water in the early morning hours, avoid over fertilization, and apply Aliette, Banol, Heritage, Koban, mancozeb, Prodigy, Subdue, or Terrazole, according to the manufacturer's recommendations. ❑

Insects of Turfgrass

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

✔ **White grubs:** The **white grubs** in your turf are the immature stage of several species of scarab beetles which include **Japanese beetle**, **oriental beetle**, **masked chafer**, **green June beetle**, and **European chafers**. At this time annual **white grubs** are entering their pupal stage and should be emerging from the soil as adults soon. The pupal stage is a "resting" stage of beetles that does not feed. Adult beetle activity usually occurs late June through July. In the past, **Japanese beetles** have been the most abundant species found in turf. Now it seems that **oriental beetle** and **chafers** are more abundant than **Japanese beetle** grubs. Remember, if you are using adult beetle activity to predict grub problems later in the summer, the behaviors of the different beetle species is variable. **Japanese and green June beetle** adults are active during the day and are quite noticeable, so visual monitoring is possible. However, **masked and European chafers** are active at night and a black light trap would be a more affective method of monitoring. **Oriental beetle** adults are the most difficult to monitor because they are active at dusk and often go unnoticed. 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. Most chemical controls should be applied around this time. However, the imidacloprid product (Merit) is a systemic insecticide that must be applied early in order to be active in the turf by mid-August. The label recommends application between mid-April and mid-August. The manufacturer (Bayer) suggests that a mid-May application is optimal. If you have a location that has had historical problems with **white grubs** and you did not use imidacloprid last year, you may want to consider this as a control option.

✔ **Chinch bugs:** The adult and nymph stages of **chinch bugs** are active at this time. This insect has multiple generations a year. Damage is most often noticed and severe August through September.

See Chinch bugs on next page

CHINCH BUGS FROM PREVIOUS PAGE

However, as the hot weather of July approaches you should monitor chinch bug populations to determine if control measures are necessary. Controls should be applied before **chinch bugs** cause significant damage to the turf. **Chinch bugs** suck the sap from the crowns and stems of the turf. Patches of turf gradually yellow and then turn brown and die. Damage resembles drought injury or sun scald. Turf does not usually recover. **Chinch bugs** are more likely to be a problem in turf with a thick thatch in full sunlight. Monitoring for adults and nymphs should be done on the edge of brown patches where populations are most active. Visual monitoring is difficult since chinch bugs are very tiny (adults approx. 1/8"). A floatation method should be used. Push a hollowed out coffee can down into the soil 2-3" and fill it with water. Wait about 5 minutes and count the number of **chinch bugs** that float to the surface. Usually 12 or more **chinch bugs** per 9" diameter coffee can may cause significant damage. Remember to monitor for naturally occurring beneficials such as big-eyed bugs. Cool, wet springs promote the spread of *Beauvaria*, a fungus that attacks chinch bugs (white cottony growth on **chinch bug**). Use endophyte resistant turf varieties to reduce **chinch bug** outbreaks. If chemical controls are warranted use bendiocarb, carbaryl, chlorpyrifos, ethoprop, or pyrethroids (Scimitar or Mavrik), according to label directions.

✔ **Sod webworm: Sod webworm** larvae (caterpillars) and adults (moths) are active at this time. You may not notice them because the adults and caterpillars are active at night. Adults do not cause damage. Caterpillars are found in silken tunnels they build by webbing leaf and soil particles together in the thatch layer. Young caterpillars damage turf by chewing on leaves and stems. Older caterpillars chew off leaf blades just above the thatch layer and pull blades into their tunnels where they eat them. Feeding injury appears as irregular brown patches of closely cut grass, similar to mower scalping. Damage is most severe on newer lawns, in sunny locations, and later in the summer (August and September). Adult populations can be monitored with a black light trap, or in the evening shine headlights over the lawn and walk across the lawn to disturb moths. Watch for moths that fly low to the ground and in a zig-zag pattern. Caterpillars can be monitored by visually searching the thatch for silk tunnels, frass, and caterpillars, or to make monitoring easier, use an irritant flush (1 Tbsp. of liquid dish soap/gal. of water poured over 1 sq. yd) to force caterpillars to the surface. **Sod webworm** control should include adequate fertilization and irrigation and raise the mowing height to increase turf vigor and tolerance. *Bacillus thuringiensis* will give good control of *young* caterpillar pests and is less harmful to the many naturally occurring beneficials that attack sod webworm. Conserve is a new biorational

SEE WEBWORMS ON PAGE 5

The Rhododendron Tip Gall Midge

Deborah Smith-Fiola, Ocean County Agricultural Agent

Many landscapers expressed their frustration in May upon seeing the succulent green new growth of rhododendrons become curled, stunted, and distorted. Although the damage can appear to be caused by drifting herbicides, it may really be the work of the Rhododendron gall midge (*Clinodiplosis rhododendri).*

This tiny fly (<1/16th of an inch) is a native pest. It overwinters in the soil, with adults emerging when plants are in full bloom. Eggs are laid on the undersurface of the leaves as soon as they emerge from the bud, but before they expand. Newly hatched larvae immediately begin to feed on foliage within the protected area of the inner leaf edge. Larvae appear as small, white to orange maggots that grow to about 1/4 inch.

Symptoms of larval feeding include inward rolling of the edges of foliage, twisted leaves, discoloration (greenish yellow), and foliar distortion. The edges of attacked leaves become brown. New growth attacked in the bud stage often dies if heavily attacked. Once leaves have matured (by June), it is easy to see the feeding damage.

After feeding for only 7 days or so, the larvae drop to the ground. Pupation occurs near the soil surface in another week or so, and new adults emerge within 2 weeks. Usually 3 generations can occur per year; but under proper environmental conditions (warm temperatures and water) up to 5 generations can occur. Rainfall or overhead irrigation is necessary for larvae to wash out of the leaves and reach the soil to pupate.

To manage the tip gall midge, monitor plants which had this problem in the past, and remove damaged, deformed leaves as soon as they are noticed. The first generation is active from 192-363 Growing Degree Days, when the redbud and ruby horse chestnut are in bloom (PPI). Roll back the leaf edges to look for the white/orange larvae (they will be present until leaves are about 1 inch long). Research from Connecticut (J. Hanula) shows that the first growth flush is usually around 20% infested, while the second and third growth flushes may reach 95% infestation. Thus, early detection and treatment to reduce midges on the first growth flush is critical in reducing future damage.

Contact insecticides are *not* the best control for this pest. Since no effective method currently exists for monitoring for the tiny adult stage (prior to egg laying), such sprays would be applied either too early or too late. The larval stage is protected from contact insecticides within the curled rhododendron leaf. A systemic insecticide such as Orthene, applied at budbreak, is a more feasible control option; use for high populations only. ❑

(Source: Abbey, T. Amer. Nurs, 9-15-96)

Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged near normal. Extremes were 92 degrees at Toms River on the 12th and 41 degrees at Charlotteburg on the 16th. Weekly rainfall averaged 0.02 inches North, 0.53 inches Central, and 0.24 inches South. The heaviest 24 hour total was 0.94 inches at Trenton on the 13th to 14th. Estimated soil moisture, in percent of field capacity, this past week averaged 75 percent North, 68 percent Central and 53 percent South. Four inch soil temperatures averaged 65 degrees North, 66 degrees Central and 65 degrees South.

Weather Summary for the Week Ending 8 a.m. Monday 6/16/97

	RAINFALL			TEMPERATURE				GDD BASE50		MON
WEATHER STATIONS	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	.00	10.58	-2.86	89	45	69.	1	448	-154	61
CANOE BROOK	.09	11.56	-3.04	91	46	70.	2	584	18	70
CHARLOTTEBURG	.00	13.88	-.74	88	41	67.	2	393	-32	65
FLEMINGTON	.06	12.50	-1.40	88	44	67.	-2	447	-143	74
LONG VALLEY	.00	13.04	-1.88	87	44	67.	1	395	-83	65
NEWTON	.00	10.96	-2.16	86	41	66.	-1	302	-185	70
FREEHOLD	MISSING									
LONG BRANCH	.70	14.12	.20	89	47	71.	2	543	-67	70
NEW BRUNSWICK	.62	15.28	1.83	90	46	70.	0	565	-148	82
PEMBERTON	.16	13.17	-.02	91	45	70.	0	701	-1	44
TOMS RIVER	.25	12.62	-1.04	92	42	69.	1	541	-66	55
TRENTON	.94	14.77	2.31	91	45	69.	-2	563	-195	80
CAPE MAY COURT HOUSE	.46	12.45	.37	87	43	69.	0	588	-89	45
DOWNSTOWN	.10	12.38	.00	88	42	69.	-2	593	-187	55
GLASSBORO	.14	14.91	1.62	88	51	72.	1	659	-101	44
HAMMONTON	.10	13.22	.28	89	40	69.	-2	578	-173	46
POMONA	.55	13.76	1.88	88	44	69.	-1	589	-94	61
SEABROOK	.10	13.34	1.67	88	49	72.	1	663	-123	47
ATLANTIC CITY MARINA	.23	9.65	-1.63	89	50	69.	1	577	-50	39
WOODSTOWN	.27	13.34	.14	87	43	70	NA	683	NA	NA

WES KLINE — GDD BASE 40 PINEY HOLLOW

This Week 207 (Ending 06/16/97)

Webworms from page 4

control that gives very good control of caterpillar pests and should be commercially available this coming month. Entomopathogenic nematodes will also provide control. Use endophyte resistant turf varieties to reduce sod webworm outbreaks. Chemical controls, when warranted, should be applied late in the afternoon. Do not water or mow area for 1 to 3 days. Chemicals include bendiocarb, carbaryl, chlorpyrifos, trichlorfon, isazophos, pyrethroids (Scimitar or Mavrik) and should be applied according to label directions.

✔ **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. The next "window of opportunity" for controlling **billbugs** is when older larvae drop out of stems to feed on the crowns of the turf (between 925 and 1035 $DD_{base\ 50}$). This should be happening soon. 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 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), diazinon (not on golf courses or sod farms), ethoprop (Mocap), fonophos (Crusade), or isofenphos (Oftanol). If infestations are not too high, damage may be masked with adequate irrigation and fertilization. ❑

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Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The user is reponsible 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.

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