

Number 6 - June 5, 2017

Why are Yew so sad?

Yew plants are fairly pest-free once established into a landscape, and can be a wonderful addition to the right area. However we've seen a number of yew samples at the Plant Clinic in the last few weeks. Most of them come with pictures or descriptions of plants with needles turning bright yellow, then browning and eventually falling from the plant. When examined under the microscope, no pathogens or insect pests are found. Instead, corky bumps or blisters are observed, usually on the underside of the needle. These can be seen with the naked eye, though they may appear as spots.

This is a classic symptom of edema (oedema), a condition where more water is retained in the plant than can be used by the plant, resulting in damage to the needle tissue. Other plants can be affected by edema, but yew plants are particularly prone to this abiotic condition. We've had a few clients who mentioned they were concerned about edema and had improved drainage in the area with pea gravel and drains before installing the plants. While these measures should improve drainage, the fact that we still found evidence of extensive damage due to edema indicates that it wasn't enough for the yew.

Management usually consists of decreasing irrigation, increasing drainage, and trying to maintain plant vitality via fertilizing and pruning out dead wood during dry weather. Replacing the yew with more water-

tolerant plants is another option for stubbornly soggy areas. (*Diane Plewa*)

Phil Nixon Retires

In 1980, Phil Nixon joined the University of Illinois Cooperative Extension Service (the name back then), and worked as an Area Extension Entomologist in the Oak Brook office covering the nine north-eastern Illinois counties until 1987. Phil then moved to Urbana and became an Extension Entomologist, housed in various buildings throughout the campus in the intervening years, but as an integral part of the Pesticide Applicator Training (P.A.T., the name back then) Program. Over the next 30 years, Phil has provided leadership to the Pesticide Safety Education Program (the current PSEP).

Phil retired at the end of May, 2017.

During the past 37 years, Phil has provided statewide leadership in pesticide education training, being part of the first group of extension advisers creating two-day workshops in the Chicagoland area. When he moved to campus, he worked with other specialists in creating a statewide system to provide pesticide education training for commercial applicators and operators, setting up programs, handling registrations, and creating, writing and editing manuals and workbooks for the many training subjects from Turfgrass to Ornamentals to Aquatics to

Mosquitoes and most of the others. Phil helped to create the first separate Private and General Standards Manuals.

Throughout the state, Phil is noted for his vast knowledge of turfgrass and ornamental insects, providing leadership to the professional industry, Extension educators, and training more than 1000 Master Gardeners and Master Naturalists. He has received eight University of Illinois awards and one EPA award in recognition of his achievements.

For the past 25 years, Phil has been the lead editor on the weekly *Home, Yard and Garden* newsletter, as well as the coordinator and contributor to the *IL Commercial Landscape and Turfgrass Pest Management Guide* and the various incarnations of the *Pest Management for Home Landscape* guide.

When asked about the changes he's noticed over the last three-plus decades, Phil has responded about the change in technology and the use of computers in daily life. He's seen pesticides come and go, including diazinon, chlordane, and many of the organo-phosphates and chlorinated hydrocarbons. He's seen the introduction of various insects into the state including Gypsy moth, Asian Longhorn beetle, emerald ash borer, German yellowjacket, and marmorated stinkbug. On the other hand, "killer bees" never materialized in the state.

Readers of this newsletter need not worry. Phil has graciously agreed to continue to write for the newsletter through the end of this year's issues.

We wish Phil years of enjoyment with his fish, dinosaurs, bonsai, and other hobbies in his retirement. (*David Robson*)

Waterlogged Plants

It's no secret that much of Illinois has received excessive spring rains, which has resulted in waterlogged soils and flooding. It is important to understand what is happening to plants growing in these conditions and what to expect later. I look at this as "a wait-and-see situation." Many herbaceous plants are experiencing injury symptoms now. Visible injury symptoms on trees and shrubs may not occur for a year or more.

Injury symptoms, which vary according to several factors, include slower shoot and root growth, leaf yellowing, leaf twisting, leaf drop, root death, increased susceptibility to attack by insects and disease, absence of fruiting, and death.

The main reason injury occurs is related to oxygen availability in the soil. In flooded or waterlogged soils, roots are robbed of oxygen. When roots can't "breathe," they can't provide necessary nutrients to upper plant parts.

Although survival is directly related to a species tolerance of waterlogged soils, other factors are important including the soil type; the time, duration, and depth of the water; the state of the floodwater; and the age and size of woody plants. Plants that are native to wetter habitats typically do better in wet situations.

Tolerant species such as bald cypress, littleleaf linden, red twig dogwood, mulberry, silver maple, and willow can live on sites in which the soil is saturated for indefinite periods during the growing season.

Moderately tolerant species such as green ash, hawthorns, honey locust, pin oak, red

maple, river birch, sweetgum, and sycamore can stand soggy soil for a few weeks to several months during the growing season, but die if waterlogging persists or reoccurs for several consecutive years.

Weakly tolerant species such as American holly, balsam fir, black walnut, bur oak, catalpa, hackberry, Douglas fir, eastern cottonwood, and red oak can stand relatively short periods of soil saturation - a few days to a few weeks - during the growing season but die if waterlogging persists for longer periods.

Intolerant species such as American beech, black locust, crabapples, eastern hemlock, flowering dogwood, paper birch, pines, redbud, spruces, sugar maple, tuliptree, white oak, and yews die if subjected to short periods of 1 or 2 weeks of soil saturation during the growing season.

Unfortunately, little can be done to prevent damage to plants growing in waterlogged soils. If a woody plant shows injury symptoms, such as leaf drop, do not immediately replace it. Some plants will show initial injury symptoms and then recover. Many woody and herbaceous plants, including turf areas, will not recover. Be patient. Whether your plants are simply waterlogged or actually growing in flood areas, it will take a while to see the full extent of plant damage. (*Rhonda Ferree*)

Ticks

Deer tick, the northern subspecies of the blacklegged tick, spreads Lyme disease, perhaps the fastest rising, most under-reported serious disease in the U.S. There have been an estimated 300,000 cases of

Lyme disease annually in the U.S. in recent years. June is the month most likely to get Lyme disease from the bite of a tick nymph. It is important to protect yourself and workers from these giant mites.

One of the major mortality factors in ticks is losing water, so they survive better in moist conditions. The increased rainfall this spring may have increased their numbers. There has been an apparent increase in tick numbers this spring.

Lyme disease, which is transmitted by the deer tick subspecies of the blacklegged tick from native mice, occurs primarily in the northern two-thirds of Illinois. Reported cases in the state have climbed steadily from 35 in 2000 to 287 in 2015. Babesiosis, a parasitic infection of red blood cells is also spread by the blacklegged tick. Powassan virus is also spread from rodents by the blacklegged tick. There have been no cases of Powassan virus reported in Illinois, although 36 cases have been reported in the Midwest, primarily in the northern half of Wisconsin and northeastern Minnesota. Anaplasmosis, previously known as Ehrlichiosis, is a disease with symptoms very similar to those of Lyme disease, is transmitted by the American dog tick and is primarily found in southern Illinois. Rocky Mountain spotted fever is also transmitted by the American dog tick. There was a case of Bourbon virus in eastern Kansas in 2014 with no vector identified, other viruses related to it are spread by ticks and insects.

In recent years, deer ticks have become more common in Illinois, with some areas having numbers as high as states that have higher incidences of Lyme disease, such as Wisconsin and Minnesota. With this increase in numbers, it is expected

that Lyme disease will continue to increase in the state.

Blacklegged ticks feed on people as larvae, nymphs, and adults. Larvae are tiny, about the size of the period at the end of a sentence; nymphs are pinhead-sized. Both tend to migrate up the legs and feed in the groin area. Adult blacklegged ticks are teardrop-shaped, reddish brown, and about 1/8 inch long. The deer tick subspecies is found mainly in the northern half of the United States. In the southern United States, the blacklegged subspecies feeds mainly on lizards and birds as immatures and thus do not carry Lyme disease.

Deer tick larvae feed on native mice, picking up Lyme disease, which can be transmitted to people by the tick nymphs and adults. June is when deer tick nymphs are most abundant. The pinhead-sized nymphs are common in forested areas with abundant leaf litter, being the same habitat as native mice that are their primary host.

American dog ticks, commonly known as wood ticks, are the most common in Illinois. They feed as larvae and nymphs on small mammals, only attacking humans when adult. Adults are reddish brown, 3/16 inch long. Females have a silver shield behind the head; males have silver, wiggly lines down the back. In Illinois, these ticks transmit Rocky Mountain spotted fever as well as Anaplasmosis.

Lone star ticks feed on humans and other mammals as larvae, nymphs, and adults. Larvae and nymphs are commonly called seed ticks because of their size. Walking through an area of newly hatched larvae may result in hundreds attacking your legs. Adults are about 1/8

inch in diameter, roundish, and brown; females have a white spot in the middle of the back. Lone star ticks have been implicated in the spread of Heartland virus, cases of which have been detected in Missouri and Tennessee. Lone star tick used to be common in the southern one-third of Illinois and not found in the northern third of the state. It is now common throughout the state.

Ticks are most common in wooded areas and those with tall grass, but they can be associated with any vegetation, particularly in southern Illinois where ticks are more numerous. Landscapers should protect themselves from ticks with repellents containing DEET or picaridin which are sold in major brands such as Off and Cutters. Lemongrass oil repellent is sold as EcoSmart Insect Repellent.

All three of the above repellents are effective, lasting over an hour per application, and commonly several hours. Herbal repellents commonly are not effective for more than 20 minutes, and many have not been tested for safe use. Repellents containing 20-30% DEET are the most effective in repellency and longevity. Higher concentrations of DEET do not last as long, probably because the lotion components in lower concentration products reduce evaporation.

There are also permethrin (Permanone) containing clothes treatments that will kill ticks on clothing. Wear light-colored clothes so that it is easier to see ticks crawling on them. Wearing long pants with the cuffs tucked into boots reduces the likelihood of ticks crawling up the legs.

If a tick is attached, grasp the head area with tweezers where the mouthparts enter the skin, pulling slowly and con-

sistently. The tick will release its mouthparts and come loose. Do not handle the tick. Other methods such as heat and nail polish commonly kill the tick, resulting in locked mouthparts that remain in the wound to cause infection. A tick typically feeds for 24 hours before releasing disease organisms; remove ticks promptly when you find them. *(Phil Nixon)*

Mimosa Webworm

Mimosa webworm is susceptible to control at this time in southern Illinois. Spraying the foliage of attacked trees with *Bacillus thuringiensis kurstaki* (Dipel, Thuricide), spinosad (Conserve), or labeled pyrethroid insecticide at this time should provide control. Treatment will be successful in central and northern Illinois in about two weeks.

Mimosa webworm heavily attacks silktree or mimosa, *Albizia julibrissin*, in southern Illinois. It is common for much of the foliage of silktrees to be brown and heavily webbed together in late summer. It also attacks honey locust throughout the state, but is only occasionally numerous enough to cause obvious aesthetic damage. When numerous, the foliage of a third or more of honey locusts will be brown in late summer.

Mimosa webworm has two generations per year in Illinois. Larvae and pupae overwinter in bark crevices and other protected locations, emerging as adult moths in spring. Larvae are greenish or brownish, slender caterpillars slightly more than one-half-inch long when fully grown. They wiggle vigorously and crawl quickly when disturbed. They web leaflets together, feeding on the webbed

leaflets, causing them to turn brown. Mature larvae pupate and emerge as moths to lay a second generation of eggs on leaves damaged by the first generation larvae. This second generation is colonial, with the numerous larvae webbing entire compound leaves together, causing the damage to be very obvious.

Controlling the first generation larvae usually prevents the large, damaging, second generation. Scout by looking for small numbers of leaflets webbed together on silktree and two to three leaflets webbed together on honey locust. Large numbers of these webbed leaflets containing first generation larvae warrant control. In the northern two-thirds of the state, trees close to buildings are more likely to be attacked. Larvae that crawl under siding and shingles of heated buildings are more likely to survive cold winters. In southern Illinois, larvae usually survive the winter without depending on warmer sites. *(Phil Nixon)*

Modified Growing Degree Days (Base 50°F, March 1 through June 1)

Station Location	Actual Total	Historical Average (11 year)	One-Week Projection	Two-Week Projection
Freeport	501	472	598	727
St. Charles	496	447	587	707
DeKalb	522	518	625	759
Monmouth	717	573	825	962
Peoria	816	610	928	1068
Champaign	728	627	845	992
Springfield	926	698	1050	1202
Perry	910	653	1023	1165
Brownstown	983	760	1112	1268
Belleville	1014	795	1143	1289
Rend Lake	1085	857	1224	1388
Carbondale	1023	812	1155	1309
Dixon Springs	1123	872	1260	1417

Insect development is temperature dependent. We can use [degree days](#) to help predict insect emergence and activity. Home, Yard, and Garden readers can use

the links below with the degree day accumulations above to determine what insect pests could be active in their area.

[GDD of Landscape Pests](#)

[GDD of Conifer Pests](#)

Degree day accumulations calculated using the [Illinois IPM Degree-Day Calculator](#) (a project by the Department of Crop Sciences at the University of Illinois and the Illinois Water Survey).

(Kelly Estes)