

Number 6 – May 31, 2016

Modified Growing Degree Days (Base 50°F, March 1 through May 26)

Station Location	Actual Total	Historical Average (11 year)	One-Week Projection	Two-Week Projection
Freeport	466	412	551	656
St. Charles	435	392	513	611
DeKalb	477	454	569	679
Monmouth	568	506	663	778
Peoria	577	542	674	793
Champaign	598	554	701	826
Springfield	689	619	800	931
Perry	667	582	768	889
Brownstown	637	677	754	890
Belleville	858	708	978	1112
Rend Lake	855	765	982	1128
Carbondale	809	724	931	1069
Dixon Springs	832	781	958	1100

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)

Oak Leaf Blister

Oak leaf blister symptoms are starting to become noticeable on oak trees. This dis-

ease is caused by the fungal pathogen, *Taphrina caerulescens*. Although all oaks are susceptible, red and black oaks are among the most affected by this foliar disease. White oaks are rarely infected.

Symptoms begin as circular, raised spots on the upper surface of the leaf, as seen in the pictures. Symptoms continue to develop become more distinctive, and appear as scattered blister-like, puckered, or raised areas on the leaves. Symptomatic tissues are often thickened and have light green color which transitions to reddish-brown as the season progresses. Severely diseased leaves may drop prematurely.

The pathogen survives over the winter in buds and on twigs. Infection occurs early in the spring during cool, moist weather, as the buds start to swell and open. Expanded leaves are not susceptible. Damage to trees in Illinois is mostly aesthetic and the disease is generally not considered to be a significant landscape problem. Management should focus on promoting oak tree vigor through pruning, watering, and fertilization. Though not usually warranted or recommended, several fungicides are labeled to control oak leaf blister. These products are only effective if applied as a dormant application to buds and twigs.

For more information on this disease of oaks, visit our [Report on Plant Disease](#).
(Travis Cleveland)

Hosta Leaf Spots

We've had a few samples, and several sightings of fungal leaf spots on hosta this season. There are a number of different common fungal pathogens that can cause unsightly lesions on hosta, though they rarely pose a threat to an otherwise healthy plant.

Anthracnose is a common fungal disease of many deciduous plants. We've already seen a lot of ash and sycamore trees affected with anthracnose this year. The causal pathogens are not the same, but they are related and thrive under similar environmental conditions. Hosta anthracnose shows up as large, irregular, brown lesions on the leaves. The centers of older lesions may fall out, giving the leaves a tattered appearance. The disease is favored by moisture and warm temperatures.

Other common fungal foliar pathogens, including *Cercospora*, *Botrytis*, *Alternaria*, and *Fusarium* can also cause foliar leaf spots on hosta. The majority of these fungi cause similar symptoms – brown, round or oval lesions, sometimes with a yellow or dark purple margin or halo.

These foliar diseases are managed using similar techniques. Space plants appropriately when installing and divide plants as needed to avoid overcrowding. Heavily affected leaves should be removed from the environment. Water early in the day, and water at ground level if possible to avoid splashing water on the leaves. While fungicides will not repair damaged leaves, they can provide protection against continued infection. Look for fungicides containing the following active ingredients: copper sulfate, sulfur, tebu-

conazole, triticonazole, trifloxystrobin, azoxystrobin, kresoxim-methyl, or pyraclostrobin labeled for use on hosta against foliar fungal infections. Repeat applications may be necessary. Always follow label instructions. (*Diane Plewa*)

Lecanium Scale

Lecanium scale, more properly European fruit lecanium, *Parthenolecanium corni*, continues to build populations throughout the state. Along with borers, a couple of scale insects, scurfy scale and lecanium scale, take advantage of stressed trees. The severe drought of 2012 followed by another drought in the second half of the 2013 growing season caused severe root loss from which trees are still trying to survive. We continue to see increased borer and lecanium scale attack. We have not seen increased scurfy scale infestations. This white scale that prefers tree trunks is most likely to be seen in nurseries.

Despite its name, European fruit lecanium is native to North America. Oak lecanium and Fletcher scale are closely related, identical to European fruit lecanium, and may be the same species. For this reason, they are commonly referred to as the *Parthenolecanium corni* complex. Oak lecanium feeds on oak; Fletcher scale feeds on arborvitae, juniper, and yew. Besides fruit trees, European fruit lecanium hosts include maple, crabapple, hazel, and many deciduous trees and shrubs.

Mature lecanium scale females look like reddish to dark brown turtle shells or army helmets one-eighth to one-quarter inch in diameter on the twigs and branches of many trees. Female scale

mature in the spring and lay white eggs under the scale covers that hatch into pink crawlers. These first stage nymphs remain under the old female shell for several days before emerging to seek feeding sites.

The crawlers settle on the leaves where they molt and remain for much of the growing season, returning to the twigs and branches before leaf fall in autumn. Nymphs overwinter on the twigs and branches, molting into adults after feeding in the spring. Males are sometimes produced in the spring to mate with the females, but commonly no males are produced and females reproduce through parthenogenesis, eggs develop and hatch without fertilization.

Lecanium scale are soft scales. Soft scales' outside body walls become thick and hard, remaining as a "shell" after the female dies and the underside soft body parts shrivel and dry up. Their very long mouthparts penetrate bark to feed directly from phloem vessels. Much of the water and some of the carbohydrates are consumed, resulting in large amounts of concentrated sap called honeydew being exuded from the anus.

This honeydew is sticky and supports a sooty mold that coats leaves, branches, sidewalks and vehicles parked under attacked trees. Sticky sidewalks or black branches and leaves are clues to scout closer for soft scale. Armored scale such as oystershell, pine needle, and euonymus scale suck out individual cell contents and do not exude honeydew. Armored scales excrete a protective waxy covering over their soft bodies.

Clientele sometimes ask why it is raining under their lecanium scale infested tree

and not elsewhere. Their reactions are interesting when they learn that what they think is rain is bug poop (honeydew). There are a few interesting jokes that circulate about people mistaking excretions for rain, but I will not repeat them.

Being a native species, lecanium scale is attacked by numerous natural enemies including lady beetles and parasitic wasps. When scale populations increase, natural enemy numbers follow. Usually after about three years of noticeably high numbers, lecanium scale numbers crash due to natural enemy control. Drought or other factors reducing tree health apparently initiates subsequent scale population increases.

Heavily attacked branches with lecanium scale frequently die, but some heavily attacked branches survive, making it unclear the cause of the dieback. Because stressed trees typically have more lecanium scale, the dieback may be more from environmental stress than the scale. However, the scale feeding surely adds stress and thus reduces the ability of the tree to recover from drought or other stress. For that reason, scale control is suggested.

Because lecanium and other soft scale tap phloem vessels for food, they are susceptible to systemic insecticides. Application of imidacloprid (Merit and others) or dinotefuran (Safari) is effective in controlling lecanium during the growing season. The overwintering female nymphs are also susceptible to dormant oil spray, and this is generally the most effective way to control this scale.

Crawler sprays are also effective. Spraying the trees with insecticidal soap, summer spray oil, bifenthrin (Onyx),

cyfluthrin (Tempo) or acephate (Orthene) at crawler emergence and again two weeks later will provide control. Acephate, being systemic through the leaves, is particularly effective on settled scale. Crawlers emerge when Queen Anne's lace is in bloom, usually in mid-June in central Illinois. This will generally be two weeks earlier in southern Illinois and two weeks later in northern Illinois. (Phil Nixon)

Bagworm

Bagworms will be hatching in southern Illinois at this time. They will hatch in central Illinois by mid-June and in northern Illinois a week or two later. Upon hatching, young caterpillars crawl out of their mother's bag where the eggs were laid and crawl upward. They get to the top of the tree and spin out silk, creating a long streamer that catches in the wind, carrying the young bagworm to new hosts.

After a couple of weeks of doing little feeding and lots of ballooning, they settle down to feed in earnest. Bagworms are about one-quarter inch long with typical bags when they start feeding. Ballooning bagworms are smaller and either have no bags or conical ones that look somewhat like brown hats.

They feed from the top of the tree down, the result of still using that drive to climb to the top of wherever they find themselves. They prefer to feed on ar-

borvitae, Eastern red cedar, other junipers, and spruce. They also feed on deciduous trees including crabapple, maple, and oak. Feeding on deciduous trees is less common as one moves north through Illinois, being common in southern Illinois, frequent in central Illinois, and scarce in northern Illinois. They are by nature polyphagous, feeding on many kinds of trees and shrubs. After all, when you are blown where the wind takes you, you better be able to eat whatever you land on.

Early bagworm feeding damage will appear as scarifying of the needle or leaf epidermis with internal mesophyll tissue eaten. Damaged foliage is lighter green at first and then whitish to brownish as the exposed and damaged cells die. As the bagworms get older and bigger, they eat entire leaves.

Scout for early scarifying damage at the top of susceptible hosts. It should show up in mid-June to early July, being earlier in southern Illinois and successively later as one goes north. If you wait until ballooning ends, one insecticide application will be effective. Sprays of *Bacillus thuringiensis* kurstaki (Dipel, Thuricide, others) and spinosad (Conserve) are effective and selective, causing less damage to pollinators and other non-pest insects. They are also organic. Other effective insecticides include cyfluthrin (Tempo), permethrin (Astro), acetamiprid (TriStar), indoxcarb (Provaunt), and chlorantroniliprole (Acelepryn). (Phil Nixon)