

Number 9 - June 25, 2018

Modified Growing Degree Days (Base 50°F, March 1 through June 21)

Station Location	Actual Total	Historical Average (11 year)	One-Week Projection	Two-Week Projection
Freeport	1040	804	1197	1352
St. Charles	1054	757	1204	1353
DeKalb	1004	863	1165	1322
Monmouth	1249	927	1408	1568
Peoria	1268	975	1435	1605
Champaign	1333	1008	1506	1680
Springfield	1520	1095	1698	1881
Perry	1518	1020	1681	1849
Brownstown	1449	1169	1630	1817
Belleville	1533	1186	1710	1894
Rend Lake	1614	1288	1802	1995
Carbondale	1506	1218	1680	1860
Dixon Springs	1554	1288	1731	1914

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)

Swede Midge a Threat to Illinois Crucifers

The swede midge was confirmed for the first time in Illinois last July in a home-

owner garden in Cook County. This insect is a serious pest of cruciferous plants such as cabbage, cauliflower, and broccoli.

We know very little about its potential distribution in Illinois at this point. Swede midge is widespread in the northeastern U.S. An invasive pest, it is native to Europe and Southeast Asia.

While the greatest damage caused by the swede midge has been on broccoli, there are many potential cruciferous host plants in the Brassicaceae family such as broccoli, Chinese broccoli, Brussels sprouts, cauliflower, Chinese cabbage, and other Asian greens. Non-cultivated plants in this family may also be infested (wild mustard, shepherd's purse, wild radish, field pennycress, and yellow rocket).

It is important to look for larvae on or within the plant tissue feeding near the growing points. Larvae are generally found feeding in groups. They are transparent but become increasingly yellow as they age. Full size larvae are 2-4 mm in length. The larval stage is the only life stage that can damage the plant.

As they feed, larvae produce a secretion that breaks down the plant cell wall allowing the larvae to feed on the liquid contents. This changes the physiology of the plant and results in the formation of swollen, distorted and twisted tissue.

Feeding caused by the swede midge includes leaf puckering, scarring, galls, or other deformities. There are lots of different causes to symptoms such as these, making it difficult to distinguish not only from other related insect species (midges, gnats, and mosquitoes), but also other factors such as mechanical injury from cultivation, herbicide injury, genetic variation of the plant, and heat or cold stress.

Breakdown of swede midge damage on crops

(<http://web.entomology.cornell.edu/shelton/swede-midge/damagecrops.html>):

- Puckered and crinkled leaves
- Leaf puckering can give a drawstring effect
- Swollen tissue of leaf petioles/bases
- Brown scarring at growing point
- Distorted growing points including twisting
- Presence of secondary bacterial rots

Swede midge damage increases:

- as the number of larvae feeding per plant increases
- the earlier in development that the plant is infested (i.e. damage pre head formation is more damaging because it could result in blind heads)
- later in the season as the population builds
- in sheltered areas near hedgerows, buildings, treelines, etc. where populations tend to build

Research from Canada indicates that swede midge adults will emerge continually from the end of May to the end of September. Adults will lay eggs in new growth of host plants and larvae will

feed on plant tissue until they are ready to pupate. Because of the multiple, overlapping generations each year, there is a potential for swede midge activity throughout the growing season.

As mentioned above, we are uncertain if and where other swede midge populations may be in Illinois. Confirmation of Swede midge in new locations will require specimens of adult flies. Samples of infested plants with larvae can be held until flies emerge for identification or traps can be placed to capture adult flies in the growing field. The adult fly is very small, about 1-2 millimeters in length, and requires an experienced entomologist to differentiate them from other related midges.

If you believe you have swede midge present in your fields or gardens, we encourage you to follow the steps from Cornell

(<http://web.entomology.cornell.edu/shelton/swede-midge/monitoring.html>)

detailed on their Scouting for Swede Midge page. If you have questions or think you are dealing with swede midge, please contact Kelly Estes (kcook8@illinois.edu).

Great Resources for Swede Midge can be found at the Swede Midge Information Center for the U.S.

(<http://web.entomology.cornell.edu/shelton/swede-midge/index.html>) (Kelly Estes)

Field Horsetail – A Unique but Aggressive Plant

Field Horsetail (*Equisetum arvense*) is an herbaceous perennial with a bottlebrush appearance. Other names include bottle-

brush, snake-grass, horsepipes, and scouring-rush. This primitive native to North America is mostly leafless yet the cone-bearing stem has been widely used to scour or clean pans, to serve as sandpaper, and to polish metal as horsetail is rich in silica.

Horsetail is typically found growing in wet, sandy, or gravelly soil. It is often found along roadsides and railroads as well as in fields and pastures. This plant can occasionally be found in the landscape – sometimes wanted and sometimes not. In my position, I hear about the latter most often with desperate clients who want it gone. There are nurseries and landscape centers that sell horsetail. This plant can be a striking addition to a landscape. However, it can also take over and spread to neighboring sites.

Horsetail has a distinct appearance. The stems, which grow to 1 foot or more, are green, waxy, erect, hollow, tough, wiry, jointed, grooved, and either fertile or sterile. *Fertile* stems produce terminal fruiting heads and are not branched. This reproductive stage looks like a stovepipe with segments that snap apart. *Sterile* stems in the vegetative stage have lateral branches in whorls around the main stem. They resemble a small evergreen or horsetail. Both stages can be found growing in the same area at the same time, however the reproductive stage is typically found before the vegetative stage.

Leaves are found on sterile stems only. They are in the form of cup-shaped, toothed sheaths at the joints. The fruiting heads are dark brown and are similar in structure to small pinecones. Horsetail reproduces by spores rather than seeds, and rhizomes that bear tubers.

Horsetail can spread impressively fast. Rhizomes are dark brown and can be 300 feet long (Czarapata, 2005)! The rhizome and tuber system of this plant may extend to 6 feet deep with internodes approximately 4 to 5 inches apart. This system then can spread from one rhizome stem to cover an area of 2.5 acres over a six-year period (Cloutier and Watson, 1985)!

Horsetail is a challenging weed to control. Challenging. I have joked with clients that they should simply consider selling the house and moving or pouring concrete over the area. The rhizomes can grow VERY deep. One *could* dig and remove affected soil to at least 6 feet, but that sounds like a big job – still easier than moving I suppose. Because the rhizomes can spread, tillage should be avoided. Many have had good success with repeated cutting or pulling which weakens the plant over time. Also, removing the first stems in early spring about 2 weeks after emergence will help prevent spore spread. Be careful not to compost plant parts to prevent the spread of spores and rhizomes. Some research suggests that goats will feed on horsetail. For small areas, plastic mulch or landscape fabrics can be used. However, the rhizomes have been known to run along the edge of these materials. For long-term control, cutting back on irrigation amounts and improving drainage should help.

Fertility practices should be evaluated. Dolomitic lime is a popular home remedy touted online. However, applying too much magnesium (found in dolomitic lime) can lead to other problems with your site. The soil pH and mineral levels should be determined by a soil test before applying any fertilizer or soil

amendment. There are types of lime available, which do not contain magnesium such as calcitic lime. Still, there seems to be some disagreement in the literature as to whether horsetail prefers acidic soils or slightly basic. Unfortunately, horsetail can be found growing on many different soils.

Also, you could try to encourage growth of other plants to help shade out horsetail as it does not tolerate dense shade. Concrete or metal barriers can be used to keep populations from spreading into neighboring areas. Obviously, if horsetail moves into an area, act quickly and do not allow it to become established.

With horsetail, a chemical control will likely be your best control, even with the lack of leaf tissue and waxy cuticle. Be aware that complete control may take a few years to achieve. Check the product label first to ensure the product is labeled for use in your particular area (lawn, landscape bed, field crops, pasture, rights-of-way, aquatic, etc.). Apply when plants are young and actively growing. Due to variation among species, a herbicide that works well on one population may not work as well on another. Systemic herbicides that move within the plant down to the roots will be best. Herbicidal vinegars are a popular home remedy but are only able to burn down the top growth – if they are strong enough. Active ingredients that have been used with some success include: 2,4-D, halosulfuron, glyphosate, MCPA, triclopyr, diclobenil, chlorsulfuron, and sulfometuron.

Glyphosate is very water soluble and results are mixed for this herbicide on waxy horsetail. Direct injection may be used with products such as Roundup

Pro. The label provides specifics but essentially the herbicide is injected into the hollow stem using a calibrated syringe.

Be sure to protect desirable plants by keeping herbicide away from them. Please read and follow all label directions. (*Michelle Wiesbrook*)

References

- Czarapata, E. 2005. Invasive Plants of the Upper Midwest.
Cloutier, D. and A. Watson. 1985. Growth and regeneration of field horsetail (*Equisetum arvense*). *Weed Science* 33:358-365.
Nordby, D. 2005. Field Horsetail Biology and Control. The Bulletin.
Baker Lime website:
<https://www.bakerlime.com/calcitic-lime-vs-dolomite-lime/>

Potato Leafhopper

Potato leafhoppers (*Empoasca fabae*) are pests in nurseries and landscapes that cause injury by using their piercing-sucking mouthparts to feed on plant fluids. They feed on oak, maple, red mulberry, red bud, cottonwood, birch, apple, dogwood, hawthorn, wafer ash, euonymus, black locust, and cherry, with red maple being a favorite. They can cause aesthetic injury to leaves and heavy feeding can reduce the annual growth of the plant and the growth of new shoots.

When scouting for potato leafhopper, identify areas that have characteristic leafhopper injury, hopper burn, then try to find and identify the insects in or near those locations. Hopper burn can be identified by looking for curling, stunt-

ing and discoloration of leaves. The discoloration can range from a mottled light green color to red and brown. Discoloration may be more apparent on the edges of leaves but can cover the entire leaf. This injury is sometimes confused with herbicide injury like 2, 4-D, or nutrient deficiencies.

Typically the best places to look for potato leafhoppers are on stems and the undersides of leaves. Adults are about 1/8 inch long, wedge-shaped, green insects. When approached, the adults may jump or fly to escape. The nymphs look similar to the adults but lack wings. Potato leafhoppers can be differentiated from other leafhoppers by their movement behavior. All leafhoppers will jump or fly away when you approach, but potato leafhoppers will also walk sideways onto the undersides of leaves.

This species is active throughout the summer so you can continue scouting for leafhoppers and their injury all summer.

Leaf injury is more severe in hot, dry, conditions so our current wet conditions may help plants withstand some injury and treatment may not be needed. When treatment is needed, carbaryl (Sevin), acetamiprid (TriStar), clothianidin (Arena), thiamethoxam (Meridian), and pyrethroids specifically labeled for potato leafhoppers are effective in controlling leafhopper populations. Because this species is active all summer, repeat treatments of carbaryl and pyrethroids may be needed. Be careful not to apply neonicotinoid insecticides to flowering or actively pollinating plants to ensure pollinator safety. (*Sarah Hughson*)

Guignardia Leaf Spot

Boston ivy and Virginia creeper are two reliable vines that are adaptable to a variety of sites and conditions. Both vines are relatively problem-free. However, Guignardia leaf spot will occasionally blemish their foliage. The pathogen that causes Guignardia leaf spot is closely related to the pathogens that cause black rot of grapes and horse-chestnut leaf blotch.

Guignardia leaf spot causes numerous small, tan to reddish-brown lesions on leaf blades. The lesions are roughly circular, but often appear angular where the spots meet the leaf's veins. Killed tissues within the lesions eventually dries and breaks away from the plant leaving numerous ragged holes. It's not uncommon for all the leaves on the vine to be affected. While the sight of so many leaf spots may be alarming, the damage is mostly aesthetic and won't cause long-term injury to the plant.

In most years, the weather is not favorable for severe disease development. This spring's frequent rain events likely contributed leaf spot outbreaks. Since the pathogen primarily overwinters in diseased leaf litter, one common control measure is to rake, remove, and destroy fallen leaves before budbreak in the spring. However, there is little evidence to show that sanitation will significantly reduce infections. Protective control measures are generally not warranted. Several fungicides are labeled to control the related black rot on grape. However, few products are specifically labeled for guignardia leaf spot on Boston ivy and Virginia creeper. (*Travis Cleveland*)