

Number 2 - May 7, 2018

Modified Growing Degree Days (Base 50°F, March 1 through May 3)

Station Location	Actual Total	Historical Average (11 year)	One- Week Projection	Two-Week Projection
Freeport	134	173	199	268
St. Charles	145	169	206	271
DeKalb	131	194	201	276
Monmouth	181	228	256	339
Peoria	190	255	270	356
Champaign	191	254	272	361
Springfield	241	288	329	428
Perry	259	284	339	429
Brownstown	238	334	331	432
Belleville	255	254	250	455
Rend Lake	274	388	378	489
Carbondale	263	374	359	461
Dixon Springs	319	410	530	

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)

Invasive Plant Phenology Report

The University of Illinois Extension Forestry produces a monthly invasive plant phenology report that gives information

on the development of invasive plants across Illinois, informing readers about what is in bloom, leafing out, setting seed, senescing in different regions of the state.

Feel free to add to the knowledge by letting us know what the invasive plants are doing in your area by commenting on this post.

Compiled by Christopher Evans, Extension Forestry and Research Specialist with the Department of Natural Resources, this University of Illinois Extension Technical Forestry Bulletin series provides monthly reports on the development of invasive plant species in Illinois. Reports are summarized by region and produced from field observations collected between the 8th and 14th of each month.

Phenology is the study of seasonal natural phenomena. This observational project tracks the phenology of invasive plant species in Illinois throughout the growing season, noting when plants initiate growth, start flowering, ripen seeds, become dormant, etc. Data on the phenology of invasive plants is critical information for the development of effective management programs.

The report can be read in its entirety here:

<https://uofi.box.com/s/yezkrio19v6a53uwjrim7p5646bisel8> *(Kelly Estes)*

Broadleaf Weed Control in Turf

We've waited a long time to see the flowers of dandelion. We wondered if spring would ever arrive. Now that it's here and the yellow blooms are bountiful (in some areas quite bountiful), you might be thinking that it's time to change that lawn or field of yellow back to a nice, uniform green. Actively growing dandelions and other broadleaf weeds can be controlled and prevented with proper practices.

Weed invasions can be minimized through proper turfgrass management. Consider use, site, and budget when selecting an appropriate turfgrass. Follow correct selection with appropriate mowing, watering, fertilizing, and cultivating; all can lead to a dense, healthy turf. Reduced weed populations result because weeds have difficulty becoming established in healthy, competitive turf.

In areas where broadleaf weeds are already a problem, mow frequently to prevent seed-head production; and after properly identifying the problem weed species, initiate controls. For assistance with identification, consult with your local University of Illinois Extension office or the booklet, "Identifying Weeds in Midwestern Turf and Landscapes" available at: <https://pubsplus.illinois.edu/product/identifying-weeds-in-midwestern-turf-and-landscapes>. Learning the weed's life cycle and preferred growing conditions can greatly assist with control efforts. Perhaps growing conditions can be altered to be less favorable. Mechanical removal of weeds by hand-pulling or hoeing can eliminate small numbers of weeds easily. Be sure to remove as much of the root system as possible to reduce

regrowth of perennials. Persistence may be needed but will be rewarded.

Proper cultural practices can greatly reduce weed populations. However, if weed problems persist, herbicides can be used.

Postemergence herbicides can provide effective control, and now is an opportune time to apply, as many weeds are actively growing. Individual herbicides or combinations of herbicides are available. Be sure to read, understand, and follow the label directions for proper use of these chemicals. If mishandled or misapplied, these herbicides may damage or kill many desirable ornamental or edible plants in the landscape or nearby garden. Check the label for specific guidance on where the product can or cannot be applied and for rain-free period (rain-fast) information. Follow these general recommendations when using postemergence broadleaf products.

1. Apply these herbicides when environmental conditions are appropriate for control.
 - a. Watch wind speeds to avoid drift. Often, early mornings are less windy than later in the day. A gentle, blowing breeze of 3 to 10 mph is recommended. Be sure the wind is blowing away from sensitive areas.
 - b. Apply these herbicides when air temperatures are between 55 degrees and 85 degrees F.
 - c. Adequate soil moisture is important to maintain growth and translocation of herbicides throughout the entire weed.
 - d. Do not apply when precipitation is expected within 24 hours.

2. Don't mow for a few days before or after application, thereby allowing maximum leaf surface for interception and absorption of the herbicides.
3. When possible, to reduce unnecessary pesticide use, make spot applications rather than treating large areas.
4. Apply these herbicides to new turfgrass seedlings only after they have been mowed three or four times unless label directions read otherwise. Wait at least 30 days after application before seeding into areas treated with postemergence broadleaf herbicides.
5. Many broadleaf weeds such as dandelion and ground ivy can also be treated effectively during active growth in autumn. Do not ignore treatment during this time when broadleaf weeds are a turf problem. In fact, autumn is an excellent time to apply these herbicides, as weeds are busy preparing for winter by moving excess carbohydrates to the roots. This can aid translocation. The cooler temperatures of autumn allow for use of ester formulations because there is less risk of vapor drift. Amine formulations should be used instead when air temperatures are warmer. Finally, cool season turfgrasses are actively growing in autumn and more quickly fill in bare areas left by dying weeds.

In research conducted over several years at the University of Illinois Landscape Horticulture Research Center, several herbicides provided effective postemergence control of common broadleaf weeds such as white clover, dandelions, and plantains. These herbicides are 2,4-D + MCPP + dicamba; triclopyr + clopyralid; and 2,4-D + triclopyr. For additional information regarding other chemical weed controls or other weeds, see the 2014 Commercial Landscape and Turfgrass Pest Manage-

ment Handbook. Information about common postemergence herbicides follows. Trade names are given as examples only and should not be considered endorsements of any kind.

2,4-D; MCPP (mecoprop); MCPA; and 2,4-DP (dichlorprop): These herbicides are in the phenoxy acid family. In this group, 2,4-D is the oldest and most widely used. It is effective on taprooted weeds such as dandelion and broadleaf plantain; but, by itself, 2,4-D does not control white clover, chickweed, purslane, ground ivy, or violets very well. Ester forms of 2,4-D are recommended for wild garlic and onion control. MCPA is very similar to 2,4-D but does not control the broad spectrum of weeds that 2,4-D controls. If chickweed or white clover is a problem, MCPP is a recommended control. Dichlorprop is combined with other broadleaf herbicides; control of henbit, knotweed, and spurge is usually improved when it is combined with 2,4-D.

dicamba (Banvel, Vanquish): Dicamba, a benzoic acid, works similarly to the phenoxy acid group and is effective against knotweed, purslane, and spurge but does not control buckhorn or broadleaf plantains well. Dicamba is relatively mobile in the soil.

triclopyr (Turflon Ester Ultra): Less broad-spectrum than the commonly used combination of 2,4-D + MCPP + dicamba, triclopyr is very active against ground ivy and oxalis.

fluroxypyr (Tailspin, Spotlight): Similar in activity to triclopyr. Can be effective on ground ivy, dandelion, and white clover.

clopyralid (Lontrel): For use on non-residential turf, clopyralid is very active against white clover and thistle.

quinclorac (Drive XLR8): An unusual product, as quinclorac is active against white clover, veronica, dandelion, and crabgrass.

chlorsulfuron (Telar XP): Labeled for use on unimproved industrial turf, this formulation is not to be used on lawns. It controls a broad spectrum of weeds.

carfentrazone-ethyl (Quicksilver T&O, Speed Zone, Power Zone): With 2,4-D + MCPP + dicamba in Speed Zone; with MCPA + MCPP + dicamba in Power Zone; labeled a “reduced risk” herbicide by EPA; disrupts chlorophyll synthesis; increases speed of activity compared to traditional postemergence broadleaf herbicides.

pyraflufen (Octane): Controls chickweed, dandelion, and white clover. It can be used in newly seeded areas that are not under stress.

topramezone (Pylex): This newer product has a bleaching effect on susceptible species such as carpetweed, chickweed, and clover.

penoxsulam (LockUp): This low use product can be used to control many broadleaf weeds including white clover.

Many postemergence combination products are manufactured to increase the spectrum of weed control. Included in this group are

2,4-D + MCPP + dicamba (Trimec, Triplet, others)

2,4-D + MCPP + 2,4-DP (Tri-Ester, Triamine)

MCPA + MCPP + dicamba (Tri-Power)

Several preemergence herbicides can be applied to control broadleaf weeds in turf. It is not too late to use these herbicides for controlling such species as prostrate spurge that require warmer soil temperatures (even up into the low 90s) to germinate. Keep in mind that these herbicides must be applied prior to germination to be effective. Existing weeds can be controlled using the methods previously discussed. General recommendations can be made when using these products in turf.

1. Conduct any cultivation practices based on label directions; when in doubt, core-aerify or dethatch before herbicide application.
2. Water following application according to the herbicide label direction.
3. To lengthen the period of weed control, make a second application of the herbicide at a later date. Follow the specific label directions for rates and timing.
4. Consult individual preemergence herbicide labels for the specific waiting period between herbicide application and overseeding or reestablishment. Avoid applying a preemergence herbicide immediately before installing sod.

Various preemergence herbicides are available for controlling broadleaf weeds:

dithiopyr (Dimension): According to the label, this herbicide controls chickweed, henbit, purslane, sparges, and yellow woodsorrel when applied before weed emergence.

isoxaben (Gallery): According to the label, this herbicide controls many weeds, including dandelion (see label for recommendations). It has no postemergence activity, so control existing weeds with post emergence spray.

pendimethalin (Pendulum): According to the label, this herbicide controls chickweed, henbit, knotweed, prostrate spurge, purslane, and yellow woodsorrel when applied before weed emergence.

prodiamine (Barricade): According to the label, this herbicide controls common chickweed, henbit, knotweed, prostrate spurge, purslane, and yellow woodsorrel when applied before weed emergence.

(Michelle Wiesbrook and Tom Voigt)

Hold Off Pruning Oaks and Elms

We prune trees with a variety of goals in mind. These goals include improving appearance and structure, reducing potential hazards, and promoting tree health. Pruning may be an acceptable way to control an existing insect or disease problem without using pesticides. Pruning can also increase light penetration and airflow through a tree's canopy, thus making the conditions less favorable for fungal disease. However, for some tree species, pruning at the wrong time of year may actually promote certain diseases. Oak Wilt and Dutch Elm Disease (DED) are examples of two devastating fungal diseases that are more likely to occur on host trees pruned early in the growing season. Fresh pruning wounds attract the insect vectors that transmit these diseases. Once in the

tree, both diseases are capable of rapidly killing their host tree, often in a matter of weeks. We can help prevent the spread both diseases by postponing maintenance pruning on at-risk trees until the dormant season. Avoid pruning elm and oak trees, especially the red oak group, from April to October. In Illinois, oak wilt is at the highest risk of spreading during April, May, and June. While the risk of infections via pruning wounds may decrease by mid-July, those erring on the side of caution should choose to postpone any pruning until dormancy.

Of course, there are exceptions to every rule. Storm damaged trees should be promptly pruned to eliminate hazardous conditions and to facilitate wound closure. For DED infected elms, the fungus can sometimes be eradicated from and tree by pruning out the diseased limb or limbs. Pruning has the highest chance of success when the less than 5% of the crown shows symptoms of infection. While not recommended for routine pruning, wound dressings and latex-based paints have shown some effectiveness in reducing the potential for oak wilt transmission when applied immediately to a fresh wound. The products are believed to reduce the attractiveness of the wound to the insect vector and/or prevent the entry of oak wilt fungal spores into the vascular system of the wounded tree. *(Travis Cleveland)*

Nutrient Issues

We have been seeing a number of plants with symptoms of nutrient issues at the Plant Clinic so far this spring. Most of these have come from plants that were started early in basements and greenhouses. Symptoms such as interveinal

chlorosis (yellowing) or necrosis (brown tissue death) can often indicate a nutrient problem. In strawberries, a red or brown diffuse discoloration and necrosis across the leaves can also indicate a nutrient deficiency.

There are several potential causes of these nutrient issues. The first, most obvious possibility, is that the soil or potting medium the plants are rooted in is deficient in an essential nutrient. Most commercial potting mixes contain sufficient nutrients for most plants, though this does not remove the need for fertilizing through the season. Soil testing on a regular basis can be helpful for gardens with heavy demands (a high-production vegetable garden, for example) while more infrequent testing is usually sufficient for areas that need less input (often perennials and easy-care annuals).

Another potential cause of nutrient deficiency is if the soil pH is too far from neutral (7.0). While some plants require more acidic conditions, most plants grow well in soils with a pH of 6.0-7.0. If the soil is too acidic (low pH) or too alkaline or basic (high pH), nutrients may be bound to soil particles and be unavailable to the plant. For this reason, we always suggest a simple soil pH test when nutrient issues are suspected since there is no benefit to adding a nutrient to a soil if the underlying problem is that the nutrient cannot be used by the plant. The pH will have to be adjusted before adding any additional nutrients (and often simply adjusting the pH is enough by itself!).

The last common cause of nutrient deficiency symptoms is root dysfunction. This can include root rots, root damage, girdling roots, or anything that could disrupt the ability of the plant to uptake nu-

trients from the soil. This may be associated with wilting since the plant may also have a difficult time absorbing water, but not always. We recommend carefully inspecting plants before installation to ensure a healthy root system. If a plant is pot-bound and the roots are beginning to grow in circle, cut the circling roots. If a root has started to girdle the base of the plant, cut the root (or return the plant if you notice this issue at planting).

Keep in mind that nutrient toxicity resulting in too much of a specific nutrient can also cause plant injury. This is another reason why we recommend testing the soil before adding large amounts of fertilizer, especially if the fertilizer is heavy in one or two specific nutrients. For most situations, a fairly balanced, complete fertilizer will be sufficient barring any of the problems discussed above. (*Diane Plewa*)

Pet Conscious Grub Control

It may be difficult to find articles specifically discussing pet safety in lawn care. In many cases, this is because products that meet human standards are also safe for pets. Many products are safe for cats and dogs when they are applied according to the labeled instructions, so it is important to read the product label before you purchase a product and again before you apply that product. Check the **Precautionary Statements** section of the label, if the product has any precautions specifically related to humans or domestic animals, they will be listed here and they will often describe the concern.

Most product labels also provide a **re-entry interval**. This statement, listed in the Directions for Use section of the la-

bel under Non-Agricultural Use Requirements, will let you know how long to keep people and pets out of an area after a treatment has been applied. The re-entry interval statement can also be influenced by the product formulation. If the product label does not provide a re-entry interval, National Pesticide Information Center (NPIC) recommends that products with granular formulations that are spread over turfgrass should be thoroughly watered-in then allowed to dry and insecticides sprayed onto turfgrass should be allowed to dry before people or pets re-enter the treated area. If it rains within a few days of application, NPIC recommends keeping pets off the lawn until it dries again.

While product labels may have a statement about domestic animal safety, it is also important to know that some pets may react differently to certain products than others. According to NPIC and veterinary journals, pyrethroids and pyrethrins are not safe for cats. However, pyrethroids and pyrethrins are not very effective in treating grubs and they are unlikely to be in products that target grubs. Many other household products contain these active ingredients so it is worth checking the ingredients list in the Product Information section on any label if you have cats or if neighborhood cats may be passing through treated areas. This is also why veterinarians often remind their clients not to treat cats with flea and tick treatments labeled for dogs. One easy trick for identifying a pyrethroid is to look for “-thrin” or “-ate” endings on the ingredient list.

Scouting

Scouting is the most important step in determining whether a treatment is necessary or economical. August is the

best time to scout for grubs because young grubs are hatching and beginning to feed on grass roots. To scout for grubs, choose a location in the turfgrass that is near pavement and away from trees. Cut a 1 sq.ft. patch of turfgrass and roll it back to expose the grubs underneath. If you count 10 – 12 grubs or more in those patches, you have enough insects to cause significant injury and can apply a treatment to the turfgrass.

Chemical Controls

Merit® is the trade name for a neonicotinoid insecticide called imidacloprid. When this product is applied as labeled, it has low toxicity. The label indicates that people and pets should not re-enter the treated turfgrass until the product has dried. This is a systemic insecticide, meaning it is taken up by plants and can remain active inside them for some time. Because of this, it has the potential to harm pollinators visiting treated plants. It is recommended that neonicotinoids not be applied to or near flowering plants (including clover and weeds) to prevent pollinator exposure.

Dylox® the the trade name for trichlorfon. This product has low toxicity to people and pets. It can be purchased as a granular formulation that must be incorporated, watered-in and allowed to dry before people and pets can re-enter treated turfgrass.

Acelepryn® is the trade name for chlorantraniliprole. This product has no signal word, indicating very low toxicity to people and domestic animals. This product can be applied as either a spray or granular formulation. The label for spray applications indicates that people and pets should be kept off treated turfgrass until the spray has dried. The label for the

granular formulation does not provide a re-entry time for non-agricultural use, so it is recommended that people and pets keep off the treated turfgrass until the granules have been watered-in and allowed to dry completely.

If you or your clients are specifically looking for treatments without synthetic chemical active ingredients, there are options for biological control and cultural control.

Biological Controls

GrubGone!® is a microbial product that can be an effective option in controlling white grubs. The active ingredient in this product is Bt galleriae (*Bacillus thuringiensis galleriae*), a soil microbe that targets beetle larvae. This product has low toxicity to people and pets. The label indicates that people and pets should not re-enter treated turfgrass until the dust has settled after application.

Milky spore powder is another type of microbial control that can be used to control Japanese beetle grubs. This product is not effective in controlling other species of grubs. If the damage in the turf is caused by chafers or June beetles, milky spore will not be an effective tool. This product has low toxicity to people and pets. It does not provide a specific re-entry interval after application, so it is recommended that people and pets keep off treated turfgrass until the dust has settled after application.

Cultural Controls

One product-free strategy, is to make turfgrass less attractive by reducing irrigation during July and Aug. At this time, adult beetles are actively mating a depositing eggs and well-irrigated turfgrass is

the most attractive location for egg-laying. This is the safest and cheapest option but may result in some browning from lack of water during the hottest part of the summer. (*Sarah Hughson*)

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