

Number 4 - May 20, 2013

Scouting Watch

Bridalwreath spirea is now blooming throughout the state. Refer to last week's newsletter article on this important phenology plant for information on susceptible insect pests. (*Phil Nixon*)

Emerald Ash Borer

Emerald ash borer continues to spread through the state. During the last year, it was first found in the Dixon, Galesburg, Kewanee, and Ogle County areas in north central and northwest Illinois. These were expected with the infestation in nearby Peru found in 2007. Similarly, infestations in Champaign and Livingston County are near established infestations. Only that found in a railroad yard area in Decatur represents a disjunct infestation. Hopefully, these represent a reduction in the spread of this pest on firewood, but it is too early to tell.

Now is an excellent time to treat for emerald ash borer. All three of the recommended systemic insecticides move into the leaves within just a few days after application. Adults feed on the edges of ash leaves soon after emergence. Mortality of these leaf-feeding beetles is a major mechanism of control and research indicates that this may be the only meaningful control achieved with imidacloprid. Uptake of systemic insecticides is quickest at this time of year as transpiration is most active in young leaves with sufficient soil moisture.

Adult emergence is typically expected in central Illinois during the first week of June and would be expected in late May in the southern Illinois infested areas of Effingham and Salem. However, we are currently about one week behind a typical spring, so there is probably an extra week to apply controls unless we experience unseasonably warm weather in the next couple of weeks. Emergence in northern Illinois is not expected until mid-June and may be a week later this year due to the late spring.

Arborists, landscapers, and other professionals can apply emamectin benzoate (Tree-age) as a trunk injection, imidacloprid (Merit, Imicide, IMA-jet, Xytect, and others) at the highest labeled rate as a soil and trunk injection and soil drench, and dinotefuran (Safari) as a trunk spray. Do not apply imidacloprid as a drench into mulch or other dead organic matter because it adsorbs onto these materials, making it unavailable for root uptake.

Applications of imidacloprid and dinotefuran should be made annually except that emamectin benzoate needs to be applied only every two to three years. Control is more effective on smaller trees, those with a trunk diameter of less than two feet, but consistent, effective

control has been achieved with emamectin benzoate on trees up to 44 inches dbh . Application is recommended to trees within 15 miles of a known infestation. Even infested trees showing dieback survive and show signs of recovery in the form of normal stem and leaf growth with the above insecticide recommendations if the dieback is not too severe.

Additional information on emerald ash borer life cycle, scouting, and damage is available on our reproducible fact sheet at http://ipm.illinois.edu/landturf/insects/ab_fact_sheet.pdf. (Phil Nixon)

Ticks

Ticks are more numerous this year than usual. Probably, the frequent spring rains in much of the state have provided the high moisture and subsequent humidity that ticks need. Ticks are large, flattened mites that feed as parasites on mammals, birds, and reptiles. They hatch from eggs into six-legged larvae that locate hosts and feed before dropping off the host and molting into eight-legged nymphs. Nymphs locate hosts, feed, and drop off to molt into eight-legged adults. Adults also locate hosts on which to feed. Males may stay on the host, mating with females coming there to feed. Females engorge on blood to several times their original size, drop off the host, and lay hundreds of eggs. With each tick having to find three hosts in its lifetime, many ticks starve before reproducing, although ticks can survive for long periods without food.

American dog ticks, commonly known as wood ticks, are the most common in Illi-

nois. 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. These ticks transmit Rocky Mountain spotted fever, a virus found here but most common in North Carolina and nearby areas. In Illinois, they also carry ehrlichiosis, producing symptoms similar to Lyme disease.

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. Larvae are about the size of the period at the end of a sentence, and nymphs are pinhead-sized. Adults are about 1/8 inch in diameter, roundish, and brown; females have a white spot in the middle of the back.

Blacklegged ticks, including the deer tick subspecies, also 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. Deer tick larvae feed on white-footed mice, picking up Lyme disease, which can be transmitted to people by the nymphal and adult ticks. In the southern United States, the blacklegged subspecies feed mainly on lizards and birds as immatures and thus do not carry Lyme disease.

Ticks are numerous in areas of tall grass, where humidity is high and hosts common. Mowing greatly reduces tick numbers. When walking or working in areas of tall grass or other areas with ticks, apply a repellent containing about 30% DEET, such as Off or Cutters, or picaridin, sold as Cutter Advanced, to the lower legs and pants legs. If ticks are numerous in mowed areas, spraying carbaryl, sold as Sevin, gives season-long control.

If a tick is attached, grasp the head with tweezers where the mouthparts enter the skin, pulling slowly and consistently. 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*)

Registered Herbicides Recommended Over Non-Conventional Weed Killing Mixes Touted Online

Weed control can be expensive. Times are tough and folks are always looking for ways to save money. Weeds continue to grow not seeming to care about your wallet or your budget. Learning to live with them and spending nothing on weed control may not be an option. Couple the need for money savings along with the fear or mistrust of herbicides and pesticides in general and the result is people willing to put just about anything they can find around the house or workshop on their weeds. And let's not forget the individuals out there who are wary of chemicals pro-

duced by large chemical companies. This is an actual quote from a message board online: "I prefer this recipe to the harsh Roundup formula put out by Monsanto." That's to be debated, but that's another article for another day. Regardless, there are many reasons why do-it-yourself weed killers are so popular. As with anything though, you often get what you pay for.

Recipes for weed killers abound on the internet. It's important to keep in mind that anyone can post anything and make it look believable. All that is needed is a recipe using any of the below listed ingredients, an adjective like AMAZING or BEST, and a pretty picture to draw attention to it. These little gems spread like wildfire on social media. Facebook and Pinterest aren't the only places you can find recipes for alternative weed killers, chat boards are full of passionate discussions on this topic. Popular mixes seem to include one or more of these main ingredients: vinegar, boiling water, bleach, baking soda, alcohol, salt, dish soap, molasses, citrus oil, borax, gasoline, diesel fuel, and even motor oil. There is a certain comfort level associated with these products. They can be found around the home after all. Some of them are even edible!

Unfortunately, the disadvantages of these home remedies often outweigh the advantages. These products don't contain labels with safety or rate information and yet they can still be hazardous to your health. Vinegar can be effective for weed control but only if it is a strong enough grade, which the bottle in your kitchen likely isn't. Vinegar contains acetic acid and acetic acid concentrations over 11% can cause

burns upon skin contact. In fact, eye contact can result in severe burns and permanent corneal injury. This is why reading and following the label is so important. There are now registered herbicidal vinegar products you can buy that have use and safety information there on the label. I wrote about using vinegar as a herbicide a few years ago. You can read my article here: <http://hyg.ipm.illinois.edu/pastpest/200714f.html>.

Although borax may sound like a “natural” weed-control method, it is important to remember that it may still be harmful to children and pets. Mixtures should be kept out of their reach. Registered pesticides have been studied extensively and come with labels that tell you how to protect yourself and others. The borax box tells you how to wash your clothes.

One other important disadvantage is that weed control often is only temporary or partial with only the top growth being affected. Boiling water would certainly be death on green leaves. The roots however are protected. If your weed is a perennial or if it has a deep taproot, you can bet it will grow back. Plus, how safe is it to carry big pans of boiling water out the door to your garden? Everything has a risk and furthermore everything can be toxic...even water. Remember, the dose makes the poison.

Some homemade weed killer ingredients can have a lasting effect on the soil making it so that nothing will grow there for a long time. Depending on the area, that may not be too bad you think. Conventional herbicides are made to break down or dissipate in a timely fash-

ion. Unfortunately, the result is new weed growth but at least the soil is healthy and can promote growth. A problem with using borax is that the boron it contains does not break down or dissipate like conventional weed killers do so repeated or excessive applications can result in bare areas where no vegetation can grow. Similarly, salt can be used for long term weed control. But it destroys the soil structure and it is mobile meaning it can move to nearby areas in your garden resulting in unwanted plant damage.

I knew that diesel is sometimes used for weed control but I had no idea just how common the practice is until a recent phone call led me to do a little search online. The chat board discussions go on and on about it. There is even an eHow.com article on how to use diesel to control grass. For what it's worth, the author has a degree in philosophy and gives no mention of training or experience in weed control. You be the judge. The internet is a powerful and dangerous tool, kids.

Some claim that their recipes or methods are more effective or longer lasting than registered herbicides. What about their environmental impact? Are these products mobile in the soil? Will they end up in the groundwater? Have they been tested for this use? Would EPA approve of these weed control methods or would they instead insist that the contaminated soil must be removed? Gas and diesel are flammable and the smell of diesel can linger for days which neighbors may not appreciate much. I would be remiss if I didn't mention however that there are some herbicide labels that call for the addition of diesel to speed up top kill or increase penetra-

tion. These are often used for brush and stump control. The use is legal *when label directions are followed*. The use of gasoline and diesel fuel alone (without a herbicide) is not recommended. In addition, many herbicides provide residual control that can last much longer than diesel or gas.

Finally, money savings is often what drives the use of these mixtures. But how much are you really saving? When calculating this, be sure to factor in your personal safety, any potential environmental damage, and the expected length of control. Corners should not be cut when it comes to these important factors...even if the recipe does sound AMAZING. (*Michelle Wiesbrook*)

Basil Downy Mildew

The U of I Plant Clinic recently diagnosed a basil sample with downy mildew. Dr. Mohammad Babadoost, University of Illinois Extension plant pathologist, reported that growers had first found downy mildew in Illinois on commercial basil crops in 2009. This disease can be very aggressive and can easily spread via wind-dispersed spores. It is considered to be serious because of the aggressive nature of the pathogen and that basil is considered to be a high value crop in Illinois. The total crop value of commercially grown basil in Illinois alone is approximately \$10 million per year. The gross value of basil is estimated to be about \$10,000 to \$20,000 per acre.

Downy mildew is caused by *Peronospora belbahri*, a fungal-like oomycete or water mold that produces zoospores, which can be spread via wind or water. This

disease pathogen also produces oospores, allowing for long term survival. It is transmitted on seed, infected plant parts, and by wind. It is suspected that this pathogen has moved geographically on contaminated seeds and leaves.

This pathogen is host specific, meaning that it only infects basil (ornamental or culinary). Dr. Babadoost has observed that all green basil appear susceptible; whereas red basil have shown to have some resistance in the field. *P. belbahri* grows best under moderate to warm temperatures, but will also tolerate cooler temperatures. Unlike the downy mildew that affects lettuce and crucifers, basil downy mildew will continue to develop throughout the summer months.

Basil leaves infected with downy mildew will develop diffuse yellowing on the top of the leaf, which often occurs in sections of the leaf delineated by veins because the pathogen cannot grow past major veins in leaves. When spores are produced, a characteristic gray purple, fuzzy growth on the underside of the leaves is evident. The fuzzy growth of spores on the underside of the leaf looks as if soil had been splashed onto the leaf under-surface. The plant may also exhibit curling of lower leaves as well as brown lesions. Blackening of the affected leaf margins occurs as the disease progresses. Symptoms of downy mildew on basil can easily be mistaken for a nutritional deficiency if careful inspection of the underside of leaves is not done.

The management of basil downy mildew includes:

- Planting uninfested or disease-free basil seed -A seed testing procedure is under development.

- Selection of a less susceptible variety
- Good cultural practices to reduce humidity and leaf wetness - Good cultural practices will go a long way in helping to reduce downy mildew disease on basil. Minimizing leaf wetness and reducing humidity will aid in management as the pathogen is favored by moist conditions. This includes planting basil in full sun and where there is good air movement; maximizing plant spacing and using drip irrigation.
- Scout frequently for this pathogen. Infected basil leaves should be removed and destroyed as soon as possible to eliminate the source of inoculum for other plantings. Avoid placing infected plants into the compost pile.
- Application of fungicides - Commercial sweet basil growers will most likely need to rely on fungicides to manage the disease. Applying fungicides frequently and starting before first symptoms will be necessary. Home gardeners should inspect their basil routinely for evidence of disease and rely on cultural management as there are fewer homeowner fungicides available. This pathogen becomes resistant to fungicides fairly rapidly, so fungicide rotations with different modes of action will be necessary.

For more information about downy mildew of basil or impatiens, you can go to the Master Gardener IPM Training modules at the following link: <http://mg.cropsci.illinois.edu/> (Monica David and Stephanie Porter)

Modified Growing Degree Days (Base 50° F, March 1 through May 16)

Station Location	Actual Temp.	Historical Average (11 year)	One-Week Projection	Two-Week Projection
Freeport	261	297	333	412
St. Charles	278	285	344	417
DeKalb	275	328	353	438
Monmouth	317	375	401	488
Peoria	341	409	426	515
Champaign	373	411	463	559
Springfield	398	461	499	603
Brownstown	418	514	521	631
Belleville	437	540	544	657
Rend Lake	492	588	604	725
Carbondale	476	557	582	696
Dixon Springs	490	605	601	721

Insect development is temperature dependent. We can use [degree days](#) to help predict insect emergence and activity. In warm years, insects emerge earlier, like we experienced last spring. Degree day accumulations remain slightly behind, but high temperatures this last week have begun to get us closer to being on track with the historical average. 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 University of Illinois Department of Crop Sciences and the Illinois Water Survey). (Kelly Estes)

Know Your Invasives: Learn to Identify Locally Invasive Plants

During a time of year when gardens are being planted, crops are being cultivated, and yards are being adorned with flowers, it is ever so important to be able to recognize what plants are invasive.

What are invasive plants?

Invasive plants are nonnative species that colonize a new area (intentionally or unintentionally) whose introduction does or is likely to cause economic or environmental harm or harm to human health. These plants are able to gain an ecological edge in these environments since the insects, diseases, and foraging animals that would have normally kept it in check in its native range, are not present in its new habitat.

Why are they important?

Sometime exotic plants from other parts of the world can be welcomed, manageable additions to our gardens, but that is not always the case. Invasives can disrupt habitats. Some do so aggressively and can quickly overtake large areas, replacing native species. Others may only colonize a small area, but take years to eradicate.

How you can help.

- Verify that the plants you are buying for your yard or garden are not invasive.
- Replace invasive plants in your garden with non-invasive alternatives (More information can be found at Landscape Alternatives for Invasive Plants of the Midwest- <http://mipn.org/MIPN%20redraft2.pdf> and Invasive Plants of the Chicago Region with Planting Alternatives - <http://www.chicagobotanic.org/research/conservation/invasive/chicago/>).

- Information is also available on the I PLANT website from University of Illinois Extension (http://extension.illinois.edu/IPLANT/plant_select/native.htm)
- Volunteer at your local park, refuge, or wildlife area to help remove invasive species.
- Help educate others about the threat of invasive species.
- Visit the Illinois Invasive Species Awareness Month web page to learn more about what you can do (<http://www.invasive.org/illinois/WhatYouCanDo.html>) (Kelly Estes)

Ash Anthracnose

This spring has presented us with extended periods of cool, wet weather. These conditions, when present during leaf expansion, often result in outbreaks of anthracnose. However, the plant clinic has received only a few reports of anthracnose occurring within the state. In fact, I received my first anthracnose (on ash) email of the year, earlier this week. Specifics of Ash anthracnose will be addressed in this article.

Ash anthracnose appears at about the same time we would expect to see spring frost damage. Unfortunately, anthracnose symptoms are similar to and often mistaken for frost damage. Symptoms tend to be more severe towards the bottom of affected trees, where moisture remains for longer periods of time. Symptoms include water-soaked spots that eventually enlarge and coalesce to form blotches. The spots quickly transition to a greenish brown. As leaves fully develop, and tissues dry, the spots and lesions tend to turn a tan color. In

general, there may be some small (quarter-inch) spots, but usually the dead tissue appears as blotches that spread from the edge toward the midrib of a leaflet. Leaf distortion and defoliation are also commonly observed. The fungus can also infect the leaf petioles, resulting in defoliation without apparent infection of the leaf blades. In such cases, closer inspection usually reveals anthracnose lesions on the petioles.

Some important things to remember about anthracnose:

- The injury caused by anthracnose is mostly considered to be cosmetic. Anthracnose may contribute to plant stress, but is not known to kill trees.
- Disease severity will vary from year to year and is highly dependent on weather conditions. This disease infects newly emerging leaves in cool, wet weather. In years in which severe

infection and defoliation occur, the tree will produce a second flush of growth. This commonly occurs in warmer and drier weather, where new infections are less likely to occur.

- Fungicides are not recommended for this disease. The damage is mostly cosmetic and usually doesn't justify the cost of treatment. Additionally, fungicides are preventative treatments that protect new growth. They will not cure infections on current leaves.
- Treatments should focus on reducing overall tree stress, with sound cultural practices. Provide water in periods of extended, dry weather. Fertilize in the fall.

For More information on Ash Anthracnose consult [RPD No. 621 Anthracnose Diseases of Shade Trees](#)

(Travis Cleveland)