

THE PURDUE LANDSCAPE REPORT

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Landscape Diagnostic Training Opportunities in English and Spanish

(Kyle Daniel, daniel38@purdue.edu)

Multiple Dates & Locations

Indianapolis – Newfields – August 7, 2023

Elkhart – Wellfield Botanic Gardens – August 10, 2023

Evansville – Mesker Park Zoo & Botanic Garden – August 18, 2023

Register here: <https://cvent.me/4zyrLe>



Figure 1. Join us for the Landscape Diagnostic Training at three locations in August.

The Purdue Green Industry team is excited to announce three diagnostic training opportunities around Indiana. This event will feature Purdue Green Industry Specialists (Janna Beckerman (professor and pathology specialist), John Bonkowski

(diagnostician), Tom Creswell (clinical engagement professor and diagnostician), Kyle Daniel (nursery and landscape specialist), Ben McCallister (urban forestry specialist), and Cliff Sadof (professor and entomology specialist) addressing plant problems and their treatments while walking through the landscape. The specialists' process of diagnosing plant problems will be discussed so attendees can be confident in diagnosing plant problems at their clients' properties. This educational opportunity will be focused on landscape problems that commercial green industry professionals will encounter in the 'real-world'.

In addition to an afternoon session in English, the morning sessions will be presented in Spanish with translation assistance by Cliff Sadof and Carlos Reichman, Schuetz Insurance. This is an exceptional opportunity within the Green Industry for industry professionals to learn in their primary language.

Special thanks to the Indiana Nursery and Landscape Association (INLA) for supporting these opportunities. To learn more about the INLA, visit <https://inla1.org/>.

If you require special accommodations to attend this event or have any questions about this event, please email Kyle Daniel – daniel38@purdue.edu.

Capacitación de diagnóstico de paisajismo de la Universidad de Purdue

Múltiples fechas y lugares

Indianápolis – Newfields – 7 agosto 2023

Elkhart – Jardín Botánico de Wellfield – 10 agosto 2023

Evansville – Zoológico y Jardín Botánico de Mesker Park – 18 agosto 2023

Este evento contará con especialistas de la industria de paisajismo de Purdue (Janna Beckerman, John Bonkowski, Tom Creswell, Kyle Daniel, Ben McCallister y Cliff Sadof) que abordarán los problemas de las plantas y sus tratamientos mientras caminan por los jardines. Se discutirá el proceso de los especialistas para diagnosticar los problemas de la planta para que los asistentes puedan estar seguros en el diagnóstico de los problemas de la planta en las propiedades de sus clientes. Estamos limitando el número de asistentes en cada ubicación, así que regístrese ahora para asegurar su lugar.

Debido a la popularidad de este taller, se recomienda encarecidamente el pago con tarjeta de crédito. Los pagos con cheque deben enviarse por correo inmediatamente después del registro.

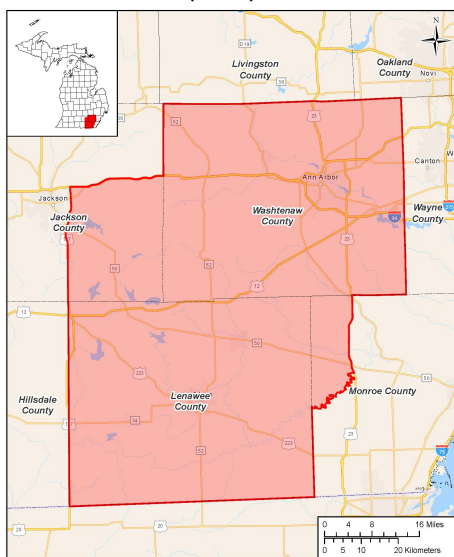
La Universidad de Purdue es una universidad de igualdad de oportunidades / igualdad de acceso / acción afirmativa. Si necesita adaptaciones especiales para asistir a este evento o tiene alguna pregunta sobre este evento, envíe un correo electrónico a Kyle Daniel - daniel38@purdue.edu.

Registro: <https://cvent.me/4zyrLe>

Box tree moth on Indiana's doorstep

(Alicia Kelley, ajkelley@purdue.edu)

Box Tree Moth (BTM) Quarantine Area



Box tree moth quarantine area in Michigan.

The problem

There is another invasive species close to Indiana that landscaping and nursery professionals should look for. Box tree moth (*Cydalima perspectalis*) is native to East Asia, and was first detected in 2021 in New York. Detections in Michigan in 2022 have resulted in a quarantine zone for boxwoods (*Buxus* spp.) in the state. Two counties, Lenawee and Washtenaw, are affected by this quarantine, as well as portions of Monroe and Jackson counties. This pest hasn't been detected in Indiana yet, but the quarantined area is close to Indiana and Ohio. Anyone who works with boxwoods or has any of these plants on their property will want to keep a lookout for this invasive insect.

What to look for

The adults have two color forms, white and brown. The white form has white wings with a brown border and a white body, while the brown form has solid brown wings and body. Both forms have a characteristic white mark in the middle of each forewing.



Adult box tree moths, white form (left) and brown form (right). Note the distinct white marking in the middle of the forewing.

Credit: Szabolcs Sáfián, University of West Hungary, Bugwood.org



Mature box tree moth larvae.

Credit: Didier Descouens

The larval stage of *C. perspectalis* causes extensive feeding damage to boxwoods. They will skeletonize leaves and feed on the bark, which rapidly kills the plant. The larvae are bright yellow-green with two rows of dorsal black spots. Mature larvae have black and dark green stripes as well. They have black heads with a white "Y" shape in the middle. They will also use silk to join leaves together for pupation, so the presence of silk webbing is a sign of this pest.

Check your boxwoods often for feeding damage and the presence of box tree moth. You can report suspected findings at <https://www.eddmaps.org/indiana/>.

Throw Some Shade with a Leaf Blower

(Lee Miller, turfpath@purdue.edu)

Spring in all its wild weather swings, plant growth and flowering glory has arrived, and along with it, the chore of mowing the lawn. Many decry the labor and monotony, but evidently some do enjoy the practice, as a new video game allows one to mow a virtual yard even when rainstorms are thundering outside.

Turfgrass is presumably the most "harvested" crop on the planet, and mowing offers many benefits and unfortunately some detriments. The advantages of mowing include weed reduction (particularly if mowed at 3.5 - 4 inches), aesthetics (who doesn't like stripes?), reduction of noxious pests such as rodents, mosquitoes and ticks (who doesn't like less bites?), and a positive growth effect on the plant itself with higher plant density and greater uniformity. Mowing also comes with its drawbacks, including lower photosynthesis, shallower roots (especially at lower mowing heights), removal of plant nutrients such as nitrogen, and creation of wounds that lose water and can be entry points for disease-causing pathogens.

Shade also adversely affects the health of a lawn similar to mowing, by robbing the plant of energy from photosynthesis. This results in plants with thinner and longer leaves, lower shoot densities, more upright growth and shallower roots. While most attribute shade to looming trees, there is a clear connection to mowing lawns incorrectly that is often overlooked.

When our cool-season lawns are growing voraciously in the cooler temperatures of spring and fall, two aspects to mowing are critical – height and frequency. Mowing lawns to a three-inch and preferably closer to a four-inch mowing height (often the highest setting on consumer lawn mowers) greatly reduces weed incidence and results in a thicker, lusher lawn. In order to keep up with growth, mowing must also be conducted frequently, as much as two times weekly so as not to remove more than 1/3 of the leaf tissue (aka the one-third rule). Whether from time constraints or a period of constant rain, lawns are often not mowed frequently enough, and even with mulching decks clippings are left on the turf surface. These clippings, particularly in wet clumps matted down by the wheels of the lawn mower, then become trees and shade the lawn underneath. Even more problematic, these matted clumps act as a wet blanket to stifle growth and provide a warm, humid environment perfect for disease activity.

Turfgrasses evolved along with grazing animals and in nature, clippings would be collected by the stomachs of hungry beasts. Collecting clippings after mowing is not recommended since it removes free, naturally recycled plant nutrients from the lawn and disposal is problematic. Therefore, a situation of excessive clippings on the lawn surface will happen, even in the best of care. What is done when it does, can determine the density and quality of the lawn.



Two methods are suggested. Mow it again and give it a double cut. If the clippings are excessively wet and clumped, wait a while for the wind to dry out mats so the mulch deck can suck them up and disperse them. For this second cut, the mowing direction should be changed to perpendicular of the original to minimize the pressing down of clippings by mower wheels.

The second method is to employ a piece of equipment that probably should be used anyway... the blower. When mowing,

clippings nearly always inadvertently end up where we don't want them... the road, sidewalk, driveway or porch. Blowing them off pavement and back into the yard pleases the spouse and neighbors, reduces potential for them to get into and act as pollutants in our sewers and waterways, and puts nutrients back in the lawn. After doing this, simply keep on going into the yard. Find the big clumps and disperse them into the lawn canopy with bursts of wind from the blower. With matted down clippings in the ruts of mower tires, give them a little rake and/or wait for them to dry out a bit. Some satisfaction can be realized when a matted clump flies up and explodes to disappear into a bunch of individual leaf blades. Neighbors, however, may be turned from admiration to confusion as you walk the lawn and grin to the whirl of the leaf blower.

Should ash trees still be protected from emerald ash borer?

(Cliff Sadof, csadof@purdue.edu) & (Bob Bruner, rfburner@purdue.edu)

The emerald ash borer (EAB), *Agrilus planennis*, is still one of the most damaging insect pests ever to invade North American forests. Unlike most native boring insects, this beetle can attack and kill relatively healthy ash trees. In Indiana cities we found this insect capable of killing most of the unprotected ash trees within 6 to 10 years. Nearly 20 years after its first detection in Indiana (2004), trees still need to be protected to keep them alive. The benefits of these living ash trees easily justify the cost of monitoring them. We provide answers to common questions people have about the need for continued treatment.

- I have had a tree care specialist treat my ash trees for the last 10 years. What will happen to these trees if I stop this service? If your trees are still healthy, they were probably treated with injections of emamectin benzoate. Initially we recommended treating trees once every 2 years. This was especially helpful during the initial invasion when each newly infested tree was producing hundreds of beetles per year. Now that most of the untreated ash trees are dead in Indiana, there are fewer emerald ash borers to attack the surviving ash trees. Research clearly shows that treating trees once every 3 years is enough to keep ash trees alive. Increasing the time between treatments beyond 3 years will increase the risk of losing your trees.

We recently completed a 10-year study in Indianapolis, where large ash trees were treated at 3-year intervals (2013 and 2016). Although they were well-protected through 2019, we saw a slight increase in damage 4 and 5 years after the last injection (2020 and 2021). By the 6th year trees after the last treatment (2022), trees declined to the point that they were a safety hazard. Overall, spring treatments were more effective than fall treatments.

- Is it worthwhile to continue treating my trees? The simple answer is YES, especially if you think about the costs of the alternatives over time. Consider the following choices:

- *Homeowner tree removal vs treatment.* Suppose you had ash tree that was whose trunk diameter was 30 inches. If you were to have that tree and its stump removed, the cost could easily be \$1800. If an ash tree is near your house or other valuable structure special precautions need to be taken to keep limbs from causing damage. These protective measures add greatly to the labor costs and could easily double the removal costs (\$3600). In contrast, to keep that tree alive, you would have to inject that tree once every three years at a cost of \$300 (assuming the fee is \$10/ diameter inch). In other words, the \$1800 -3600 you pay to remove the trees would provide 18-36 years of enjoying your tree!
- *Homeowner tree replacement vs treatment.* Trees grow slowly. Most add a bit less than a half an inch per year of diameter to the trunk. So, if you add \$500 on top of the removal costs to plant a new tree (\$2300- \$4100), the same money would provide 23 to 42 years of tree enjoyment. Moreover, the tree you planted would only be half the size of the original ash tree in 30 years.

- *Does it make sense for my city to still pay for protecting ash trees on streets and in parks?* When a similar approach is used to compare the costs of tree removal and replacement over time, it is more expensive to remove and replace city ash trees than to protect them. This is especially true for cities that focused protection on the larger ash trees (trunk diameter 12" at chest height) and removed and replaced smaller trees. Our free web based tool, [Purdue's Emerald Ash Borer Cost Calculator](#) helps forest managers use their street tree inventories and local estimates for removal, replanting and treatment costs to various approaches to managing trees over a 25 year period.
- *How can EAB still be in Indiana if all the ash trees are dead? Shouldn't they have starved to death?* Not all the ash trees in Indiana are dead. Although EAB kills most of the ash trees after it arrives, ash saplings are not attacked until stems are about ½- 1 inch in diameter. Annual production of saplings in the ash forest provides a steady supply of ash trees that eventually grow big enough to keep EAB populations alive even after most of the larger trees have been killed. In cities, suburban towns and rural areas, these ash saplings will thrive near ditches and streams. Some of these trees can grow large enough to produce seeds before the borers find and attack them. A very small percentage of white and a substantial number of blue ash trees are also able to survive this initial invasion of EAB. So, unfortunately, EAB is here to stay and will never become extinct.

[North Central Regional Guide to Managing EAB with Insecticides \(3rd ed\)](#)

[Emerald Ash Borer in Indiana](#)

[Emerald Ash Borer Cost Calculator](#)

Plant Picks: Majestic Beauty Tuliptree

(Kyle Daniel, daniel38@purdue.edu)

This series will highlight unique and interesting landscape plants that are not as common in the landscape. Many of these plants aren't readily available at your local nursery or garden center. If you are interested in purchasing one of these plants, I recommend contacting your local nursery or garden center about availability.

Majestic Beauty Tuliptree (*Liriodendron tulipifera* 'Aureo-marginatum')



Figure 1. Majestic beauty tuliptree form. Photo by Kyle Daniel.



Figure 2. The unique variegation of Majestic Beauty tuliptree makes for an excellent specimen tree.



Figure 3. The asymmetric variegated pattern is an interesting conversation piece in the garden.

Zone: 4-9

Expected Mature Size: 40-50 ft. tall x 15-25 ft. wide

This series will begin with unique cultivar of the state tree of Indiana, *Liriodendron tulipifera*. The Majestic Beauty Tuliptree is a bit smaller than the straight species and features a very interesting variegation on the leaves. This cultivar is fairly low maintenance and can thrive in many different types of soils. Though it prefers full sun, it can tolerate partial shade. This makes for an excellent specimen and shade tree for the landscape.

The typical pests and problems are similar to most *Liriodendron tulipifera*. The Purdue Plant Doctor has information on the problems and treatments of tuliptree:

<https://purdueplantdoctor.com/partproblems/tree-206?from=broadleaf>

Resources:

Oregon State University Landscape Plants:
<https://landscapeplants.oregonstate.edu/node/2098>

Missouri Botanical Garden:
<https://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?taxonid=271341>

Women of the Green Industry Featured Speaker: Beth Berry

(Kyle Daniel, daniel38@purdue.edu)

The Women of the Green Industry will be meeting virtually on June 20th and will feature Beth Berry, Vice-President of Sales for Advanced Turf Solutions. She will be providing a tactical strategy for acquiring your dream role in our industry or a roadmap to start your own lawn or landscape business. You can join the meeting at

<https://purdue-edu.zoom.us/j/95932197520?pwd=KysxUHFPsZiOTlwcmFZU3hUSXFpZz09>



Figure 1. Beth Berry, Advanced Turf Solutions, will be speaking on June 20th.

The Women of the Green Industry will be meeting in person after the Purdue Turf and Landscape Field Day on July 18th at 3:30 for a tour at Purdue. If you would like to join the group for a tour, email Kyle Daniel at daniel38@purdue.edu.

The Women of the Green Industry meet on the first Tuesday of every month via Zoom. If you would like keep up with the group's meetings, networking opportunities, and professional development, you can join the group's email list here: <https://lists.purdue.edu/mailman/listinfo/womenofthegreenindustry>.

Presentation:

Jan and a Van; you already have everything you need to start a million-dollar business in the green industry.

For over four decades the lawn and landscape business has been one of the top ranked small businesses to start and grow. Low capital investment, easy access to industry training and certification and the promise of recurring revenue have also

created a market where private equity is acquiring green industry businesses at staggering multiples. So, what makes it an even more attractive business for entrepreneurial female founders?

State and federal minority business grants for WOSB (Women Owned Small Business) often go unawarded because of the lack of candidates in a geographical area.

Our industry offers flexibility, fitness, creative outlets, independence, and a continued growing demand. Fleet, uniforms and service delivery equipment have been significantly optimized for females in the last 5 years to make your start even easier.

Beth Berry has been voted one of the top 40 women in the Green Industry several years in a row and has held leadership roles at the top companies in the industry. In this session Beth provides a tactical strategy for acquiring your dream role in our industry or a roadmap to start your own lawn or landscape business.

About the speaker:

Beth Berry is the Vice President of Sales for Advanced Turf Solutions. Most recently Beth was Business Development and Integrated Partnerships for Real Green Systems, a role she spearheaded for eight years. Beth has injected 30 years' wealth of experience in technology, operational management, regulatory compliance, and commercial sales into green industry product supplier expertise and the all-in-one field management software service. At both Advanced Turf and Real Green, Beth drove the frontline business objectives creating strategic partnerships and unprecedented client engagement. In 2020, Beth leveraged the disruption of the pandemic, swiftly launching a daily live show hosting industry experts and key customers sharing pandemic related business pivots and practices. Additionally, Beth leads an initiative with industry leaders and state and federal legislators to ensure the "legal essential status" designation for the green industry for every state, creating record breaking financial results across Real Green's home services clients.

Prior to RealGreen, Berry was a founding leader of Scotts LawnService, where she managed and mentored 45 call centers and centralized collections. Since the 1990s, Berry has held leadership roles at a host of companies throughout the marketing, service, and SaaS industries, making her a leader in the sector. She is featured in the NYT bestseller *YouUtility* by Jay Baer and has become a regular keynote at major industry events as well as serving on the boards of Project Evergreen, Indiana Professional Lawn and Landscape Association, Women in Landscape Network, National Association of Landscape Professionals, Advisory Council and newly elected board member NALP. In 2020, Berry was named one of the Top 50 Women Leaders in SaaS by Software Report across all industries. In 2022 Beth launched a weekly radio show on Turfs Up "Ahead of the Curb" and in 2023 another weekly podcast "Fingertips on the Laces" for female NFL aficionados.

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