

THE PURDUE LANDSCAPE REPORT

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Early Fall Color – A Symptom of Stress

(John Bonkowski, jbonkows@purdue.edu)

Many trees are planted for their beautiful fall color, especially in locations where the climate provides reliable autumn weather. I have said this multiple times during extension talks and conversations with submitters to the PPDL, but I seem to have not experienced a ‘normal’ fall since moving to Indiana with how erratic the weather has been from year to year. Depending on weather conditions, such as high heat and drought, colors may develop early or may be duller for specific varieties than expected.



However, individual trees that begin to show fall colors earlier than expected (August, September, even early October) may be shouting out a proverbial cry for help. Plants will often show yellow or red foliage coloration during periods of stress, so this may occur at any point during spring, summer, or fall. Individual trees may also show fall coloration earlier than others of their species in the same area. Now is the time to keep an eye out for this kind of early fall color as it can give you a heads-up on issues you can expect next year.

When examining a tree with early fall color, I would recommend checking the following:

- Is there a root flare?

<https://www.purduelandscapereport.org/article/another-case-of-mortality-from-planting-trees-too-deep/>

- If not – tree could be planted too deep or the soil grade may have been changed
- Is there any obvious damage to the trunk, root flare, or surface roots?
 - If so, there could internal decay that is not obvious and could be contributing to stress
- Are there any girdling roots?
 - If present, they could be affecting the vascular system and strangling the tree
- Is the rootzone mulched?
 - If not, the tree could be under stress from earlier drought, or weed and grass competition.
 - If so, make sure it is not mounded against the trunk of the tree
- Does the soil appear compacted? Was there construction near the tree within the last 5 years?
 - Compaction leads to issues with water, nutrient, and even oxygen availability to the roots and could lead to general decline

<https://www.purduelandscapereport.org/article/stem-girdling-roots/>

It is important to know the host species, but with the sheer volume of plant material available for sale in the nursery trade, it is even more important to know the cultivar that you are planting so you know what you might expect coming into the fall.

Can I Plant Trees in the Fall?

(Ben McCallister, bmccalli@purdue.edu)

When I was a kid, if you'd asked me what my favorite season was it would always immediately be summer. No school, time for playing

outdoors, swimming, hiking, and late nights playing flashlight tag. Now, if I ranked the seasons from worst to best, they'd be Summer in last, followed by Winter (yes, I choose winter over summer), and a tie between Spring and Fall. With the best temperatures, a mix of sun and rain/snow, and an explosion of colors from new blooms in the spring to the reds, yellows, and oranges of leaves before they drop in the fall, Spring and Fall are by far my favorite times of the year. Well, we are nearly to the autumnal equinox with temperatures beginning to drop and the onset of some fall showers as I write this article. With Fall on the doorstep, I've received a repeated question recently, "Is it ok to plant a tree in the Fall?"



Figure 1. Fall tree planting

The short answer to this question is, "Yes!" If you want to add some new tree canopy to your yard, then pick your spot, choose the appropriate species, call #811 before you dig, and get that shovel out. Fall has some excellent reasons to plant trees, two of which I've already mentioned, cooler temps and autumn rains. While Autumn tends to be the driest time of the growing season, evapotranspiration rates are generally lower than during the summer season. These

conditions reduce heat and water stress on trees (but are not an excuse to not mulch and water your new tree). Another good reason to plant in the fall as opposed to Spring is that instead of amping up for growing, trees are powering down and putting resources into root growth and storage. This means better establishment for the root system and a head start on protection for next year's summer heat and drought.

There are some points to take into consideration, though. Again, make sure to properly water and mulch your new trees. They need an average of 5 gallons a week per inch of stem diameter if weekly rain isn't providing around 1" of water. Be aware of when the first freeze is expected. You want to make sure your new trees have at least 6 weeks in the ground before the first freeze/frost and can stop watering after the first freeze. Also, for tree selection/protection, avoid broad leafed evergreen trees as they can be damaged by cold desiccation and wrap the trunks of your new trees to protect them from sunscald and animal damage like rubbing from bucks during the rut.

If you keep these points in mind and continue caring for your tree for the next 2-5 years you should have a successful planting. If you have any questions feel free to contact me at bmccalli@purdue.edu or you can find an ISA Certified Arborist at the following link [Find an Arborist](#).

New Invasive Predator of Honeybees

(Bob Bruner, rfbruner@purdue.edu), (Tom Creswell, creswell@purdue.edu) & (Cliff Sadof, csadof@purdue.edu)

A new invasive insect of concern has been identified in the state of Georgia. In August of

2023, Georgia's Department of Agriculture, along with the USDA, confirmed the presence of the yellow-legged hornet, *Vespa velutina*, outside of the city of Savannah. To date, this is the only confirmed identification of this insect in the United States; it has already established in Europe, the Middle East, and parts of Asia outside of its native range. *V. velutina* is a native of the subtropical and tropical regions of southeast Asia, and it is not yet clear how it arrived in North America. Much like the northern giant hornet, previously known as the Asian giant hornet or 'murder hornet', this insect will attack honeybee hives in search of food and represents a potential danger to the beekeeping industry.



Figure 1. Yellow-Leg Hornet. Image Credit: Allan Smith-Pardo, Invasive Hornets, USDA APHIS PPQ, Bugwood.org

Yellow-legged hornets are predators and will regularly attack honeybees to provide food for their young, though it is possible they could attack other, similar species. Since honeybees concentrate their numbers in hives with a lot of in-and-out traffic, they provide an excellent opportunity for the hornets to hunt and provide food for their young. The hornets are effectively ambush predators, waiting in front of hive entrances and capturing workers with their legs as they leave the hive. The hornets then dismember the bees, returning to their young with only the thorax, which contains the largest amount of protein. However, it is believed that

yellow-legged hornets only represent a lethal threat to weaker hives that are already experiencing problems; it is also too early to tell how already-existing honeybee issues, such as mite and disease issues, will interact with the presence of this insect.

The yellow-legged hornet, much like other members of Order Hymenoptera, is a social insect. They create oval or egg-shaped nests in trees that can house as many as 6,000 individuals. Colonies are composed of a foundress and her young, who become the workers within the colony. Female hornets will overwinter within tree hollows, leaf litter, or other environmentally stable locations, and once spring arrives, they start their own colony and give birth to new workers who care for young and hunt.

As with any new invasive species, it is critical to successfully identify it and differentiate it from other species of wasps and hornets that we experience in the Midwest. At a glance, the yellow-legged hornet is barely discernable from European hornets, yellowjackets, and similar insects; they possess aerodynamic shapes with

heavy yellow and black color patterns like many of their cousins. The most easily identified trait is their namesake: the legs of this insect tend to be black closer to the body, with the lower half of the leg bright yellow. The segments of the abdomen follow a similar pattern, with those segments closer to the center of the body being dominated by black, steadily becoming more yellow as you reach the tip of the abdomen. The yellow-legged hornet is also approximately an inch in length, with reproductive individuals sometimes reaching an inch and a half.

While remaining observant will be critical to reporting any invasive species, there are a few things to keep in mind about the yellow-legged hornet. This insect has only been found in one location in Georgia; no other states have any sightings or confirmed reports of this insect.

There is also no evidence the insect has established a population in Georgia, there is only one confirmed sighting. The best course of action for now is to be vigilant and report any potential sightings by calling 1-866-NOEXOTIC, or you can contact our local Purdue Extension educator for assistance.

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