

As our summer heats up, trees will begin to stress due to drought. When other issues are present, trees may be overcome.

Please be diligent in removing dead tissue from your nursery and destroying.

If redbud, check for vascular streaking . If present, sterile prune below damage. Frac 3 or Frac 11 fungicide applications are recommended after pruning.

PHOTO CREDIT: Amy Dismukes



TSU NURSERY NEWS TO USE

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WEED OF THE MONTH: Mugwort (*Artemisia vulgaris*), is an herbaceous perennial broadleaf weed native to Europe and Asia but was introduced to North America by settlers in the 1600s. Although mugwort has purported medicinal properties and can be considered ornamental, the plants are classified as invasive in several states and should not be planted. Mugwort readily invades roadsides, ditches, disturbed fields, and has become a major problem in nursery fields and landscape beds where it rapidly colonizes and crowds out all other plants.

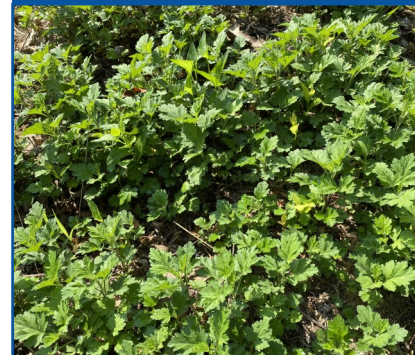
Plants grow 2-4 feet tall with leaves that are dark green on the upper surface and gray underneath, leaf shape also varies from shallowly lobed (lower leaves; resemble *Chrysanthemum*) to deeply dissected (upper leaves). Plants develop inconspicuous white flowers in late summer/early fall with a single plant producing up to 200,000 seeds, but seed viability is low and seeds are not the main method of reproduction.

Mugwort produces an extensive network of rhizomes (shallow underground stems) which spread quickly and make it very difficult to control. Mugwort tolerates low mowing and tillage chops rhizomes which can be carried to other fields creating new infestations. Established mugwort stands are very difficult to control as very few post-emergent herbicides are effective and pre-emergent herbicide control is not an option.

The current control strategy is to treat fallow fields with aminopyralid (7 oz/acre; Milestone® herbicide) plus a surfactant in early summer followed by an application of glyphosate (2 qt / acre) in early fall. Repeat applications will likely be required the next year. Sanitation is the best method to prevent mugwort establishment, so make sure to inspect any new plant liners or soil for mugwort prior to planting. Please contact Dr. Anthony Witcher (awitcher@tnstate.edu) for more information on nursery weed control practices.



PHOTO CREDIT: Dr. Anthony Witcher



PLEASE JOIN US ON AUGUST
25TH AT THE TSU NURSERY
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2022 TNLA FIELD DAY! FOR MORE
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IRON DEFICIENCY is a type of chlorosis resulting from a lack of iron. Lack of iron in a tree may be due to a high iron need, less effective uptake or insufficient usable iron in the soil. Most often, it is related to a high (alkaline) soil pH. When pH exceeds 6.5 – 7.0, available iron decreases. Even though there may be sufficient iron in your soils, a high soil pH causes a chemical reaction that make the iron solid and unavailable to roots, which will remain tied up in the soil unless conditions change.

Iron is essential for the growth and development of trees because it is used by chlorophyll in photosynthesis and the production of food. When iron is deficient, less food is made and the tree suffers. If a tree starts declining, it will be more susceptible to damage from insects or pathogens. Often, secondary invaders will kill severely iron deficient trees.

SYMPTOMS AND DIAGNOSIS. Foliage turns uniformly yellowish-green between the veins, but the veins remain green. Yellowing is most common on new growth. The new growth may be stunted. In severe cases, leaves may necrose (brown and die) and drop. Branches and twigs may experience stunting and dieback, and plants may fail to produce flowers or fruit. Fungal leaf spots are more common on leaves with iron deficiency and tend to make the necrosis appear worse. If the leaf veins remain green on the otherwise yellow leaf, and the chlorosis appears first on the younger or terminal leaves, spreading later to the lower parts of the plant, you can be fairly certain chlorosis is be to lack of iron. Susceptible species include sweet gum, birch, rhododendrons, azaleas, white pine, magnolia, dawn redwood, photinia, holly, hydrangea, arborvitae, boxwood, lilac, maples (red, silver, Amur), oaks (pin, red, swamp white, willow), apple, crabapple and peach.

IPM AND CONTROL. One of the best methods of avoiding iron chlorosis is by planting tolerant trees.

1. Monitor the problem. Weather conditions and extreme changes in soil moisture may cause symptoms of yellowed leaves may disappear as conditions normalize. Persistent chlorosis needs attention.

2. Accurately identify the problem. If nutrient , the issue can be determined with a foliar and soil analysis (pH measurement).

3. Use a foliar feeder. Spraying the foliage with iron sulfate, iron chelate or soluble organic iron complexes will correct temporarily. The “fix” will last only one season and won’t change the underlying deficiencies in the soil.

4. Adjust the soil pH. The best long-range solution for correcting iron chlorosis in soils is to make the soil more acid by lowering the soil pH with the addition of sulfur, aluminum sulfate or iron sulfate. Quicker effects result when the chemical is worked into the soil while being mindful of plant roots. Another method is to use water-soluble materials, which can be injected into the soil with a root feeder.



SECONDARY PESTS ON IRON CHLOROSSED WILLOW OAK

For more information, contact adismuk1@tnstate.edu or awitcher@tnstate.edu.