

SPRUCE SPIDER MITE *Oligonychus ununguis* is a mite pest that infests many different conifer species including spruce. This cool season mite pest is active during the Spring and Fall and declines in population when temperatures reach the 85-90 degree range. The generation time only takes 2-3 weeks from egg to adult and the female can lay 30-40 eggs in her lifetime. This allows for multiple generations per season and rapid buildup in population. The piercing mouth-parts of the mite cause a stippled appearance to the needles as it feeds on the sap. This chlorotic spotting later develops into a rusty or bronzed needle appearance (photo right) as hot and dry weather develops later in the summer months while the mite is dormant. Later this damage will result in premature needle drop. Before beginning treatment it is best to develop a scouting regiment for this mite by looking for signs such as webbing, castings, dead mites, or tiny red eggs. You can also use a light colored sheet of paper and bump the branches onto it to contrast with the tiny mites. During this time of year it is best to wait until cooler weather in the Fall before applying horticulture oil due to the high temperatures and risk of plant injury.



Spruce spider mite damage on spruce USDA

# TSU NURSERY NEWS TO USE

by Phil Haar TSU  
Eastern Region Nursery  
Specialist [phaar@tnstate.edu](mailto:phaar@tnstate.edu)

Granulate Ambrosia Beetles (*Xylosandrus crassiusculus*) are pests of dogwood, redbud, maple, ornamental cherry, Japanese maple, crape myrtle and many fruit trees. Females bore into twigs, branches, or small trunks of live trees. Once inside, the beetles inoculate the tree with ambrosia fungus and lay eggs to produce a brood. Damage can be clearly seen from the sawdust strands exuding from the holes drilled by the female (photo right). In addition to direct damage to the tree, secondary pathogens may find their way inside the holes once the female has bore inside. While typically active in early March, initial flights may occur once temperatures exceed 70°F occurring as early as February. It takes 55 days to complete one generation and the adults overwinter in galleries within the trees. The beetles feed on the ambrosia fungus as they develop so it is difficult to control them once they have made it inside. Due to winter freeze damage, the excess stress on the trees this year has led to many ambrosia beetle attacks. If you suspect your tree may not survive it is best to cut it down and burn it. Best management strategy for controlling ambrosia beetles is to maintain healthy trees and to apply pyrethroids 2 to 3 weeks before beetles are in flight and reapply every 2 weeks. Alternative treatment options for ambrosia beetles are being researched however, at the present time, the most effective treatment currently available is trunk sprays of Perm-Up 3.2EC at the rate of 5 quarts per 100 gallons. Reapplication may be necessary in the case of a weather event.



Boring dust from adult beetles on a cherry tree PHOTOGRAPH BY Johnathan



**WEED OF THE MONTH:** – Morningglory (*Ipomoea spp.*) is a broadleaf vining plant that is a warm season annual. Morningglories are widely distributed across the central and southern United States and thrive in full sun and rich moist soil but are adaptable to a range of conditions. Several species of morningglories are troublesome weeds in agronomic and nursery crops where vines can quickly cover small seedlings or shrubs. Morningglories have numerous vining stems and may grow up to 20 feet long. Leaf shape varies, many species have heart-shaped leaves while others have lance-shaped or deeply lobed leaves. Leaf size also varies but some can grow to 5 inches long. Flowers bloom June through September and come in array of colors including white, pink, purple, red, and orange. Flowers have a distinct funnel shape with attached sepals that act as identifiers for species. Flowers mature into a capsule fruit that is multichambered with 1 seed per chamber and up to 6 seeds per fruit. Morningglory plants can produce up to 500 seeds per year and seeds can remain viable in the soil for years. Plants have a fibrous root system that develops from a slender taproot. Post-emergent herbicides (glyphosate, glufosinate, and diquat) can be used to control morningglory plants, but complete spray coverage is required and care must be taken to prevent spray onto desirable plants. Morningglory seeds have a hard seed coat and are relatively large, only a few pre-emergent herbicides are effective and include flumioxazin, oxyfluorfen, pendimethalin, and simazine. Please contact Dr. Anthony Witcher ([awitcher@tnstate.edu](mailto:awitcher@tnstate.edu)) for more information on nursery weed control practices.

Morningglory (*Ipomoea spp.*) PHOTO CREDIT: DR. ANTHONY WITCHER

## IR-4 Project Grower & Extension Survey

The IR-4 Project conducts a biennial survey for growers and industry professionals to communicate what disease, pest, and weed problems you face that you have a difficult time managing because you do not have sufficient management tools. The biennial grower and extension survey identifies disease, insect, and weed needs throughout the country for greenhouse, nursery growers and landscape managers. The survey results help to identify where new pest management tools are needed. Please complete the anonymous survey at: <https://www.ir4project.org/ehc/ehc-registration-support-research/env-hort-grower-needs-2/#Survey>. The deadline for submitting the survey is September 1.

You can also submit new project requests for 2024/2025 research (<https://www.ir4project.org/ehc/ehc-registration-support-research/env-hort-grower-needs/#Request>). The deadline to receive these requests is August 30.

## Elm Zigzag Sawfly Survey

Elm zigzag sawfly (EZS) is a relatively new exotic pest that recently found its way to North America and was first detected in Canada in 2020 and in the US in 2021. Native to portions of Japan and China, EZS has been detected defoliating the already beleaguered elm species. To date, EZS has been detected in Ontario Canada, Maryland, New York, North Carolina, Pennsylvania, and Virginia. It is believed to be lurking in many yet undetected areas as this rapidly reproducing parthenogenic sawfly can easily move cryptically in its egg and pupal forms and is also a very strong flier in its adult form. Moreover, feeding activity may go unnoticed unless populations build, leading to severe defoliation. European spread of this Asian exotic was alarmingly rapid, and it is expected to have similar spread patterns here in North America.

After a rocky start with access issues involving ESRI Survey123, the east wide EZS detection survey planning committee has decided to open the EZS Survey123 to public access. The decision was due to unforeseen problems encountered creating access accounts. For those of you with ESRI AGOL accounts who have already participated in the digital survey, the format is much the same but gaining access should be much easier!

While scientific knowledge of the species is still emerging, EZS is believed to impact all species of *Ulmus* and perhaps other closely related species. In order to learn more about the biology and spread of this new forest pest, your help is greatly needed! We have developed a short digital detection survey that can be accessed by either a cellphone, touchpad or computer. The intent of this survey is to gather widespread detection information while not taking a great deal of your precious work time. Once up to speed, data collection shouldn't take more than a few minutes. A short tutorial of the survey protocol can be found [HERE](#), and a step-by-step guide to downloading and using the App can be found [HERE](#). Anyone who can adequately identify an elm tree is urged to participate. The larval life stage creates a unique zigzag defoliation pattern on elm leaves, so you don't have to be an entomologist to make a good diagnostic identification.

Please distribute this message to all your cooperators such as extension agents, state and federal departments of agriculture, land conservation groups, master gardeners, urban foresters, arborists, recreation and park folks. The more people looking for this rapidly spreading insect the better! If you have questions or need more information, please contact Paul Merten in the southeastern US at [paul.r.merten@usda.gov](mailto:paul.r.merten@usda.gov), or Craig Larcenaire in the northeastern US at [craig.j.larcenaire@usda.gov](mailto:craig.j.larcenaire@usda.gov).

Please help by distributing this press release to your partners and participating in the survey!

Further extension publications for more information on ambrosia beetle below:

[https://www.tnstate.edu/extension/documents/Ambrosia beetle Factsheet 01312023.pdf](https://www.tnstate.edu/extension/documents/Ambrosia%20beetle%20Factsheet%2001312023.pdf)



472 Cadillac Lane  
McMinnville, TN 37110  
931-668-3023

<http://www.tnstate.edu/agriculture/nrc/>

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