

Spring is coming...

With air temperatures this month dropping across the commonwealth, including a recorded -32°F in Madison County on February 20th. This comes pretty close to the lowest temperature ever recorded in Kentucky, -37°F on January 19th, 1994 in Shelbyville. I believe we all deserve some consistent warmer weather and less snow.

Common Questions...

Each newsletter will include common questions received by members of the Nursery Crops Team.

Q: Did the extremely cold weather kill my plants?

A: *Honestly, this depends on the plant species and what microclimate they are in. In some cases, the snow cover will have helped protect some plants. Don't act too soon, you may not know until late spring or early summer when these plants start becoming stressed.*

Nursery Crops Team

Winston Dunwell
Extension Professor
270.365.7541 x209

Dewayne Ingram
Extension Professor
859.257.8903

Carey Grable
Extension Associate
Western Kentucky
270.365.7541 x279

Joshua Knight
Extension Associate
Central/Eastern Kentucky
859.257.1273

<https://nursery-crop-extension.ca.uky.edu/>



The grayish white waxy covers of female Japanese maple scale insects on holly.

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Close-up of a female beneath its cover. Note the purple color at this life stage.

Japanese Maple Scale

Host Plants: Red maple, Japanese maple, Kousa dogwood, Euonymus, Privet, Crabapple, Cotoneaster, Japanese zelkova, Holly, Ornamental pears

Description

Japanese Maple Scale (JMS) is a small, oystershell-shaped armored scale. The waxy coating over the body is white, but the female, eggs and crawlers (immature stage) are lavender.

Feeding and Damage

Unlike soft-scale insects, JMS does not feed on the phloem (plant vascular tissue). Instead, it feeds directly on plant storage cells, causing the cells to rupture and collapse. Damage is often not as severe as with other scale pests, but populations can grow to extremely high levels, causing both branch dieback and plant death. The loss of saleable plants and rejected shipments appears to be this pest's greatest threat to the U.S. nursery industry.

Scouting

JMS can be challenging to detect. The small, white adults are difficult to see and often blend in with light-colored bark or lenticels, especially when infestation levels are low. On shrubs and multi-stem trees, focus initial scouting at the base of the plant from the soil line to approximately 8 inches above the soil line. On standard-form trees, look on the trunk and scaffold branches, in particular at the branch collar. ***JMS is easier to see in the dormant season when foliage is not hindering the view and the waxy coating appears brighter.***

Thorough applications of horticultural or superior oil during the dormant period in late winter are an important component of achieving successful control.

Scale Insects

Last month, we touched briefly on the large, diverse group of insects called "Scale Insects" (superfamily *Coccoidea*). Though they vary widely in their appearance, they all secrete a waxy coating for defense, causing them to resemble reptile or fish scales and giving them their name. Most scale insects are plant parasites, feeding on sap from the plant, though particular species of scale are specific to particular hosts or plant groups. Scales are often controlled by the use of horticultural oils that suffocate them, systemic pesticides which poison the sap, or using parasitoid wasps and *Coccinellid* beetles.



Fletcher scale

Fletcher scale

Host Plants: Arborvitae, Thuja, Yew, Juniper, Cypress, Cupressus, Hemlock.

Description

Eggs hatch into oval, flat, amber to yellow first instar nymphs called crawlers. Adult females are yellowish brown to tan, almost hemispherical, and about 2-4 mm in diameter. Males are unknown for this species.

Damage

This pest can reduce the health of an infested plant by removing plant fluids. This soft scale insect secretes an abundance of honeydew (sticky, sugar-rich material). In addition, heavily infested plants may become unsightly by a heavy crust of black sooty mold that develops on the honeydew. Heavily infested yews may have chlorotic (yellow) needles or drop them prematurely.

Other Scale Insects in KY

Cottony Maple Scale, Juniper Scale, Lecanium Scale, Magnolia Scale, Obscure Scale, Taxus Mealybug, Tuliptree Scale, Walnut Scale.... More information about each can be found here:

<http://www2.ca.uky.edu/entomology/entfacts/scaleinsectsmenu.asp>



Close-up of euonymus scale on euonymus

Euonymus scale

Host Plants: Euonymus, English ivy, Hibiscus, Holly, Honey-suckle, Lilac, Pachysandra

Symptoms and Diagnosis

Light infestations produce yellow or whitish spots on the upper surfaces of leaves. The scales are typically concentrated along the stems and lower leaf veins of the plant. In the case of heavy infestations, plants look water stressed, leaves develop yellow spots and fall off, and twigs and limbs may die. Plants may become bare by midsummer.

Scales are small (less than 1/8 inch long), and with close examination you can see the white, longitudinal ridges of the males and the dark oystershell shaped females. A scale cover will remain on the plant after the insect has matured or died. These covers are an identification sign, but they should be checked to see whether the scales are alive or dead. This can be determined by sliding your thumb over the scales. If alive, the crushed scales will be wet from body fluids. If dead, the scale cover will be hollow and fall off.

Management

Horticultural oils kill by suffocation or after penetrating overwintering stages in the dormant season. Scales tend to thrive on stressed plants. Following a recommended fertility program and watering regime will promote plant health. However, over-fertilization favors scale buildup. Severely prune back heavily infested branches.



Oystershell scale infestation of poplar

Oystershell scale

Host Plants: Lilac, Ash, Dogwood, Maple, Poplar, Willow, and many others

Description

The waxy cover of mature specimens is about 2.5 mm long, grayish brown, and noticeably convex, resembling miniature oyster shells. Tiny white eggs are found beneath the waxy cover of the female. The crawler stage of this scale insect is pale yellow and less than 1 mm long. Adult males often have one pair of wings.

Damage

Plants are injured by this scale insect when it removes plant fluid from non-vascular cells with its piercing-sucking mouthparts. Eventually, branches become encrusted with this armored scale. Twig or branch dieback is common when infestation occurs. Occasionally, a tree or shrub will die as the result of a severe infestation if it is not effectively managed.

Management

Prune and destroy heavily infested twigs and branches. The vulnerable life stage called a crawler is active from late May through early June. Crawlers may be effectively managed with the application of a registered insecticide formulation made according to label directions from late May through early June. A registered formulation of horticultural oil applied at a growing season rate according to label directions against the crawler stage will conserve natural enemies of this armored scale insect.

There are many tiny wasp parasitoids, some lady beetles, and predatory mites that feed on life stages of this scale insect. Activity by these beneficial organisms is usually more apparent when a severe population of this pest has developed on a plant.

The University of Kentucky's **Nursery Crop Extension Research Team** is based out of two locations across the bluegrass to better serve our producers.

The **University of Kentucky Research and Education Center (UKREC)** in **Princeton** serves western Kentucky producers while our facilities and personnel on main campus in **Lexington** serve central and eastern Kentucky producers.

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Contact Us

Western Kentucky

UK Research & Education Center
1205 Hopkinsville Street
P.O. Box 496
Princeton, KY 42445
270-365-7541

Central / Eastern Kentucky

UK Main Campus
Horticulture Department
N-318 Ag. Science Center North
859-257-1273

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<https://nursery-crop-extension.ca.uky.edu/>

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