



Tree Pest Alert



January 5-12, 2022

Volume 20, Number 1

In This Issue

Plant Development.....	1
Treatments to begin now.....	1
Timely topic.....	1
Emerald ash borer update.....	1
Why maple is not a recommended tree.....	2
E-samples.....	2
Oystershell scale.....	2
Sap rot fungus on cherry.....	2
Samples received/site visits.....	2
Edmunds County (dying dogwoods).....	2
Minnehaha County (Another Agrilus in ash).....	3

Samples

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Note: samples containing living tissue may only be accepted from South Dakota. Please do not send samples of plants or insects from other states. If you live outside of South Dakota and have a question, please send a digital picture of the pest or problem.

Any treatment recommendations, including those identifying specific pesticides, are for the convenience of the reader. Pesticides mentioned in this publication are generally those that are most commonly available to the public in South Dakota and the inclusion of a product shall not be taken as an endorsement or the exclusion a criticism regarding effectiveness. Please read and follow all label instructions as the label is the final authority for a product's use on a pest or plant. Products requiring a commercial pesticide license are occasionally mentioned if there are limited options available. These products will be identified as such, but it is the reader's responsibility to determine if they can legally apply any products identified in this publication.

Reviewed by Master Gardeners: Bess Pallares, Carrie Moore, and Dawnee Lebeau

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This publication made possible through a grant from the USDA Forest Service.

Plant development for the growing season

We are at the time of year where subzero temperatures are common. While these bitter cold snaps are annoying to people, and sometimes deadly if caught out in them, it is not a problem for most of our trees and shrubs.

January is when woody plants achieve their deepest cold tolerance, and many can survive -30°F without any injury. There are also shrubs, such as redbud dogwood and trees, the Siberian larch, that can tolerate -60°F at this time of year.

Most of our “winter” injury happens during autumn and spring when we have a sudden cold snap. Temperatures that dip in the teens can damage plant tissue at these times of year as the plants have not yet completely hardened (autumn) or already lost some of their hardiness (spring).

Treatments to Begin Now

The only treatment applied to our trees and shrubs during midwinter is usually rabbit repellent to keep the bunnies from chewing our shrubs to the ground or girdling the trunk of shrubs and small trees.



As a reminder, the most effective deterrent (other than fencing) is Plantskydd based on a study published in *Human-Wildlife Interaction* (Spring 2014 issue 8(1): 113-122). The active ingredient in this produce is dried blood and works on fear, rather than bad taste or as an irritant. Other studies have shown the effectiveness of most repellents being about a month so expect to make several more applications before spring.

Timely Topics

Emerald ash borer update

All the larvae collecting last week were the J-shaped forms in their overwintering chambers deep within the sapwood. There are probably some younger larvae present in trees but not enough to appear in our sampling. The J-shaped larvae are least sensitive to cold weather and the recent below-zero temperatures were not cold enough to cause much mortality. We need a few days of 30°F to significantly drop the larval population.

Why maple is not a recommended tree

I had a recent email saying customers did not want to plant maple as they heard there was a problem with them. The question was what was the threat?

Maples do suffer from a multitude of pests and problems from chlorosis on alkaline soils (Freeman, red and silver maples) to verticillium wilts (mostly Norway maple). These are not so prevalent that they would preclude planting these trees.

The reason for going on a “maple diet” is that we already have too many maples in the landscape. Communities that are inventorying their ash population are finding almost an equal number of maples. Some communities have more than 30 percent of their street trees composed of one or more species of maple.

The Asian longhorned beetle which infests maples is already in the United States. This insect may arrive in South Dakota at some point, but it seems to be spreading slowly. A greater concern is another, yet unknown borer from Asia that can impact maples as emerald ash borer has done to ash. Planting too many of any tree genera (e.g., maples, oaks elms), no matter their ornamental benefits, can lead to another catastrophic loss from an insect.

E-samples

Oystershell scale on aspen

A landowner noticed these hard, grayish bumps on an aspen tree and wondered what they were. These are adult female oystershell scales (*Lepidosaphes ulmi*). The scales are about 1/8-inch long, gray and the general shape of an oyster shell. The scales remain on the bark long after mom dies so populations seem larger than what they are.



The young crawlers hatch in the spring and crawl out from beneath their dead mom. They walk around a bit until they find a place to settle and begin sucking the sap out of the branch or trunk. The females develop a hard shell and the eggs are laid beneath the shell before winter. The adult males are gnat-like, often missed, and are few (and unimportant - mom can lay eggs without them).

Treatment is usually a summer horticultural oil applied once the crawlers hatch, about 400 growing degree days (GDD base 50), after common lilac blooms and smokebush is just starting to flower.

There is also a closely related scale called the aspen scale (*Quadraspidiotus gigas*). It is like the oystershell scale but is circular and gray with a yellow center – like a fried egg.

Sap rot fungus on cherry

These whitish patches are the spore-bearing structures for a sap rot fungus. The fungus is not responsible for the death of this cherry branch, instead they quickly become established in branches after they die. These fungi feed on the sapwood, the outer part of the wood where water is transported. They decay the wood from the outside of the branch inward and the branch falls after snow loading (or wind during the summer).



Dead and dying branches are common on mature cherry trees in South Dakota. The lifespan of these trees is measured in a few decades, not centuries. They usually begin to decline by year 30 and self-prune as branches begin to die, become infected, and fall.

Samples received/Site visits

Edmunds County, Dying dogwoods

This was one of those difficult calls; multiple plantings of redosier dogwoods (*Cornus sericea*) that died last summer. It is usually easier to determine the problem when you have dying plants. Once they are dead, and dead for some time, it becomes much more of a challenge.

The tissue that might help to solve the puzzle sometimes has degraded and disappeared. The remaining tissue is

often infected with fungi and other micro-organisms that feed on dead tissue. Figuring out the problem is like putting a puzzle together, with some pieces missing and pieces from other puzzles mixed in the box.



Redosier dogwood is a common ornamental shrub and is frequently used in windbreaks. This dogwood is native across much of northern North America including South Dakota. It is not uniformly found throughout this region or our state.

Redosier dogwood is native to wetlands and performs best on poorly drained soils with abundant nitrogen. A cattail marsh is a common site for finding these shrubs thriving. Redosier dogwood also requires a cool climate and is high temperature limited in the southern part of its range. Wet, cool sites are ideal for this shrub. Hot, dry sites are death traps.

It does well in windbreaks on well-drained soils if supplemental irrigation is provided at least for a few years after establishment. I find stem cankers on dogwoods during extended drought periods. The shrub is susceptible to several canker diseases including *Botryosphaeria* canker (*Botryosphaeria dothidea*). No signs of any canker disease were found on the stems of the plants sampled.

The ground was frozen which made it difficult to extract much of the root system. The canes often snapped off at the soil line and the tissue at the base was rotted, more so than the cane above.

The most likely cause of death was the high late spring and early summer temperatures in the area during 2021. The temperature reached 103°F on June 5 and stayed in the high 90s until June 10 when it reached another 100°F.

An air temperature of 100°F can be raised another 10°F above fabric. This is approaching the lethal range of 116°F. Combine seedlings that are not yet established, high temperatures, low precipitation, and a species that is not tolerant of hot, dry conditions and you have a fatal cocktail.

Redosier dogwood is a useful windbreak shrub and adapted to windbreak suitability groups 1 and 2. They can also be used on group 3 and 4 soils but may require

supplemental irrigation; the growth is not as good. I have some on 5 or even 6 soils that are thriving, but these become more an exception. Regardless of soils, extremely hot temperatures shortly after planting – and when the soils are dry – is a killer for this water-loving shrub.

Minnehaha County, Another *Agrilus* in ash

Emerald ash borer is an *Agrilus* species (*Agrilus planipennis*) but there is also a native *Agrilus* that attacks ash in South Dakota, *A. subcinctus* (no common name). The reason this insect is not a threat to ash is because it's a native species and ash are only susceptible to attack when they are already dying or dead.



It is also much smaller than the emerald ash borer so is found in dead and dying twigs (usually less than 1/3-inch in diameter), rather than branches and trunk as does emerald ash borer. The larvae are like emerald ash borer (though the abdominal segments are oval rather than bell-shaped) and the adults also emerge from D-shaped holes, but the larvae and the D-shaped holes are much smaller than emerald ash borer, about one-third the size.

The adult was captured last summer in a pan trap set in a dying ash to collect emerald ash borer parasitoids. We have been going through the collection now and found it. It was easy to separate from emerald ash borer as the adult is much smaller and the wing covers have these lighter hairs in patches.