Pest Update (March 31, 2021)

Vol. 19, no. 7

John Ball, Forest Health Specialist SD Department of Agriculture, Extension Forester SD Cooperative Extension

Email: john.ball@sdstate.edu
Phone: office 605-688-4737, cell 605-695-2503
Samples sent to: John Ball
Agronomy, Horticulture and Plant Science Department
rm 314, Berg Agricultural Hall, Box 2207A
South Dakota State University
Brookings, SD 57007-0996

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.

Available on the net at:
http://sdda.sd.gov/conservation-forestry/forest-health/tree-pest-alerts/

Plant development for the growing season

Spring has finally arrived and it's coming in warm and dry. We are above average in growing degree days (GDD) across the state. Almost a third more in some parts of southeastern South Dakota and degree days are also slightly ahead in the Black Hills.

I took this picture of red maple flower buds just beginning to open. This event occurs at about 75-80 GDD (base 50) and that is right where we are at in Sioux Falls. Last year we were at about 50 GDD!

We seem to be about a week or two ahead of last year. If this trend continues, expect everything to begin popping earlier this spring, both plants and pests. But we know South Dakota does not have predictable weather and we could still see snow!

Timely Topics

Emerald ash borer update

Our branch sampling is showing that many of the J-shaped larvae in their winter cells are now beginning to develop into pupae. This is the final stage before adult emergence. We are a little ahead of last year and if this trend continues, we may see adult emergence beginning at the end of May rather than early June.

Sampling will continue until adult emergence begins. Emergence is a key event we want to be able to predict. Once adults begin emergence, if infested wood moves around Sioux Falls, Canton or within their counties, adults can be transported to new areas of town or new communities.

Tree injections can begin at the time ash leaf out, usually mid-May. If the tree is injected between then and mid-June, the treatment will kill the new adults before they lay eggs. While treatments are often focused on killing larvae beneath the bark – which has a much longer treatment window – early season treatments can pull double duty; killing adults before they lay eggs and then killing any larvae hatching from eggs (These egg would be from adults that did not feed on the leaves of the treated tree before laying eggs. The more trees treated in an area, say several city blocks, the less chance of any eggs).

A new shrub to consider: seven-son flower.

I mentioned this shrub last issue as having some possibilities for landscapes in the southeastern part of the state (and maybe Rapid City and Pierre). The picture I showed in the last *Update* was a March photograph of the shrubs in Sioux Falls (not this picture!).

Tim, the Urban and Community Forestry Coordinator in Kansas, saw the article and sent some pictures showing the seven-son flower in bloom. One is included on the previous page. Nice flowers! While the shrub is probably not hardy much north of Sioux Falls, it is another choice for adventuresome gardeners in the southern part of our state who want to increase the plant diversity in the ornamental landscape.

Pine engraver beetles – do not delay treatments!

The Black Hills have been very dry this spring and the expanding populations of all three engraver beetles, *Ips* (pine, 5-spinded and 6-spined) are going to take full advantage of the moisture-stressed trees. The first generations of these beetles will be flying very soon, and any protective sprays need to be put on before they fly.

Generally, these bark beetles are content to attack down trees and fresh slash piles but during drought they can move to live trees. The attacks, while often not as deadly as its larger cousin the mountain pine beetle (*Dendroctonus ponderosae*), can still cause branch dieback and even death of infested trees. Fortunately, droughts do not last long, a few years or so, and once the rains return the beetles move back to downed trees and slash. This is not going to be another decade long mountain pine beetle epidemic.

But pines will be vulnerable to engraver beetles this year. High value trees need to be sprayed with sufficient pressure so that the entire canopy, the trunk and branches, are covered with the pesticide. This is a task best left to commercial spray companies that have the equipment and experience to do the job right. There are many local spray companies in the Black Hills that know how to treat pines, and many started treating in March (the pesticide will last on the bark all season). You need to on their list now (if not already!)

E-samples

Gall on Black Hills spruce shoots

I received a picture (next page) of these growths on the shoots of a Black Hills spruce out in the Black Hills. The sender had already done some investigating and asked if this gall was from the Cooley spruce gall adelgid (*Adelges cooleyi*). Close, but it looks closer to the eastern spruce gall adelgid (*A. abietis*). This is another European pest that was brought in more than a century ago and now has spread throughout much of the country, at least to the Rocky Mountains.

We have both in the state. The Cooley spruce galls appear at the tips of the shoots and are most common on Colorado spruce (*Picea pungens*). The eastern spruce gall appears near the tips of the shoots and oon white spruce AKA Black Hills spruce (*P. glauca*) and Norway spruce (*P. abies*). I usually find the eastern spruce galls on white spruce in the Black Hills forest.

The immature female is in the overwinter stage right now, and she will mature and lay eggs in a cotton candy-like material when the buds start to expand. Once the eggs hatch, the young nymphs will feed at the base of the expanding shoot causing the shoot tissue to become distorted and encompass the insects. They feed and develop in these chambers and the shoot becomes almost pineapple-like. The galls dry and opens in August, releasing the mature insects which fly to the shoot tips, usually of the same tree, to overwinter.

The galls are usually not tree killer, but they can be treated with a dormant oil just as the bud scales are expanding (be sure to spray when it is above freezing and read and follow the label - misapplications of oils can damage needles).

Squirrels on hackberry

The squirrels seem have finished browsing the maples and elm and have moved to hackberries (*Celtis occidentalis*). Earlier *Update* articles this winter discussed possible reasons for the tree injury but with hackberries I see it almost every year. It does not matter if the previous season was wet or dry. This is a picture of a squirrel apparently taking a break from its hackberry snack.

Usually, they browse on the upper sides of the branches, chewing all the way down to the sweet (by squirrel standards) inner bark. They seem to have their favorite trees and there are hackberries that they feed on every year while ignoring the ones next to them! These partially girdled branches often leaf out just fine but if squirrels have chewed almost around a portion of a branch, the distal end may show yellowing and wilting leaves.

Samples received/Site visits

Faulk County **Dying spruce**

I received pictures and a sample of a Colorado spruce branch. The shoot growth last year was normal but the previous year's growth had already shed its needles. This is not normal as a healthy spruce should retain its needles for five years or more.

I found pine needle scale (*Chionaspis pinifoliae*) and spruce bud scale (*Physokermes* spp) but neither population was dense enough to cause the decline of the lower branches. We were not able to find any signs of the needlecast diseases. The most likely cause is cystopsora canker *(Leucocytospora kunzei*).

This canker disease is common on spruce, especially those stressed by drought, and the most common symptom is the lower branches shedding needles, from the inside out, and eventually dying. If you inspect these declining branches closely you can usually find bluish-white resin blisters that also look like bird droppings. The best treatment is water if the drought continues and prune out the dying branches.

Lincoln County **Winterburn on balsam fir**

Balsam fir (*Abies balsamea*) is a tree of the north woods, not the hot, dry, windy prairies. This fir is presenting severe symptoms of winterburn. The trees looked fine in February but during March turned reddish brown. The shoots are still alive and bendable. The problem appears to be limited to the needles.

The most like cause for this abrupt color change is trees that were dry before winter, then as the spring air temperatures entered the 50^{o}F, the soils were still too cold for the trees to pull up any water. No treatment currently other than patience. Sometimes the color will return in April but if the needles are still discolored in May, removal of the tree is the best option. Usually red means dead, so most like the tree is lost. If the foliage is only yellow, it sometimes recovers

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

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