Pest Update (January 10, 2019)

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Note: samples containing living tissue may only be accepted from South Dakota. Please do not send samples of dying plants or insects from other states. If you live outside of South Dakota and have a question, instead 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/

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 and 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.

Plant Development

We are in a nice thaw this week and it may continue for another week or two. Most woody plants have not yet fulfilled their chilling requirements – the duration of cold weather they must be exposed to as a threshold for spring growth – so there is no concern the plants will think it is spring. However, the warm weather out in the Black Hills is leaving some dry soils (and plants) and folks with small evergreens may want to consider watering if the soils are not frozen.

Timely Topics

The elongate hemlock scale (*Fiorinia externa*) was introduced in the last *Pest Update* – the final one for 2018 (more biology information on EHS can be found in that article). This Asian pest was first detected in New York in 1908 and slowly spread out until about the 1970s when it quickly extended its range to 14 states along the east coast of the United States and inward to Ohio. The scale was first discovered in North Carolina in 1993 and became a problem in Christmas tree plantations by the 2000s.

The discovery of the insect in Wisconsin and Minnesota during the Christmas holiday was from wreaths and other decorative greenery, though not on Christmas trees. The source for this material is believed to be North Carolina so the material was found at chain stores rather than local garden centers that often source material from regional suppliers.

The insect was found on wreaths and decorative greenery – the holiday balls made of evergreen branches – in South Dakota just before New Year's. Some of the material had as many as three or four scales on a single needle. EHS is only found on the underside of the needles. Mature female scales are covered with a waxy, translucent material – it appears that you can almost look through the shell – and has an elongated body that is parallel-sided and fits along the rows of stomata in the needle.

Adult female scale on needles from a wreath sold in South Dakota.

The scale is a problem on Canadian hemlock (*Tsuga canadensis*) and seems to be spreading faster than the other exotic threat to hemlocks, the hemlock woolly adelgid (*Adelges tsugae*) – not a good time to be a hemlock.

This is not the only host for scale. They are also found on firs (*Abies*) and this was the greenery shipped into the region. Firs, such as Frasier fir (*Abies fraseri*) make excellent wreaths and other holiday decorations as the soft, bright green needles have excellent branch retention.

We do not have many hemlocks in the state and even firs are relatively rare so if these two genera were the only host, it would be more of a curiosity than a serious

threat. Unfortunately, it also infests spruce (*Picea*) which apparently makes a better host then its namesake, hemlock.

The insect has not become a major pest out East on spruce so perhaps it might only be just one more sucking insect on spruce that we occasionally see. The insect, however, has the potential to be a problem as firs that are heavily infested can have the needles become discolored and shed prematurely which leaves a stunted and weakened tree.

At this time, the best approach is to dispose of any wreaths or decorative greenery in city or county landfills – when the material is buried or chipped/burned - rather than just tossed on the backyard compost pile. The eggs beneath the female scales can still hatch this spring and the young move to nearby trees.

E-samples

The thin appearance and loss of lower needles on the center tree are common symptoms of diplodia tip blight.

I had a series of pictures sent to me of mature ponderosa pines (*Pinus ponderosa*) that are beginning to decline. The trees are in eastern South Dakota and are about 50 years old. While I have not yet visited the trees, nor collected samples, two key steps in diagnosing tree problems, the symptoms presented by these trees looks like diplodia tip blight (*Diplodia pinea*, formerly *Sphaeropsis sapinea*). The disease is common on mature ponderosa pines in eastern SD and in trees within the communities surrounding the Black Hills.

The most common symptoms are stunted new shoots with short, brown to yellow needles. These needles soon die, turn gray and hang from the shoots for a season before falling. This leaves the tree appearing thin and opened with the loss of the older needles. The disease is mostly seen on the lower branches and sometimes the very top of the tree is the only part that remains unaffected. Trees also vary in their susceptibility, so it is common to see one symptomatic tree, such as the pictured above, and the nearby trees appearing fine.

The appearance of the disease is often stress-related. Mechanical stresses, hail, can result in the expression of symptoms but so can drought and old age. We often see the disease appearing in areas of the Black Hills that had a hail storm

within the past year and we are seeing in the eastern part of the state due to the drought conditions a few years ago and the predominance of old pines.

Treatments consist of two application of a fungicide labelled for this disease. The first treatment is applied as a canopy spray about the beginning of May while the buds are just beginning to swell on the pines. A second application is made about two or three weeks later. Fungicides that contain propiconazole or thiophanate-methyl seem to be the best at arresting the develop of the disease symptoms.

Samples received/Site visits

Minnehaha County **These are from some pines. One is a completely dead tree, two others look sickly.**

These are Scotch pine (*Pinus sylvestris*). We are seeing a lot of pine wilt disease in the area and this may be the reason for the decline of these trees. However, the note also mentioned the trees were in a low spot that held water this summer and these trees were sometimes standing in water for a few days (Minnehaha County had above-normal precipitation this year). Scotch pines, as with all pines, has a very low tolerance of “wet feet.” The lack of soil oxygen may be the reason for the decline.

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