

Pest Update (April 17, 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.

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Plant Development

Our spring came to a standstill as the state experienced another (and hopefully the last) snow storm. The bomb cyclone as it was called left some areas of the state with almost 30 inches of snow. The warmer and wetter weather this week is rapidly turning the snow to water and sump pumps appear to be working overtime in many communities.

Treatments to do soon

There are probably two major foliage and fruit diseases of apples in our area, apple scab and cedar-apple rust. These diseases result in leaf discoloration, olive-drab blotches for apple scab and orange spots for cedar-apple rust.



Apple scab infected leaves become discolored by midsummer and if the infection is severe may fall by August. The fruit may also develop scabby lesions. The late winter-early spring control for scab begins with raking up and burning or otherwise destroying all the fallen apple leaves within a few hundred feet of the trees. Apple scab overwinters on the fallen leaves and during the wet spring weather spores are released from these fallen

leaves to infect the newly developing leaves. This raking and burning has limited value, and is not a substitute for fungicide applications, but can help with management, particularly for isolated trees. Even mowing right now (if the snow is off the lawn) to break down the fallen leaves can help with the deterioration of the tissue.



Cedar-apple rust control begins with the removal of infected “cedars”, more properly referred to as junipers, near the apple trees. This disease needs to alternate between two hosts, the apple (or crabapple) and junipers. Removing one of the hosts is a means of breaking the disease cycle. Rocky Mountain junipers and eastern redcedars with the small hard “apples” surrounding twigs (these are the fruiting bodies to the fungus) should

be removed before spring. However, as with leaf raking for apple scab, removing the cedars may have limited value as all the infected trees within several hundred feet need to be removed and this will still not prevent infection from more distance trees, up to a mile away, so fungicide applications will still be needed.

Fungicide treatments for apple cultivars susceptible to apple scab, start with the first application applied as the buds are *just* beginning to expand, less than a 1/2-inch of leaf showing. Cedar-apple rust fungicide applications start when the new leaves are about one week old, though treating the expanding leaf can also be beneficial. **These first applications are critical to the successful management of these diseases and if missed cannot be made up with applications later in the spring and summer.**

The most common fungicides used for preventative treatments of apple scab have Captan or Mycolobutanil listed as the active ingredient. If the apple scab treatment is for an ornamental crabapple, one in which the fruit will not be harvested,

Chlorothalonil, commonly sold as *Daconil* may be used. *Captan* is the most common fungicide included in multi-purpose fruit tree sprays such as *Gordon's Liquid Fruit Tree Spray*. Captan is effective on apple scab, but not cedar-apple rust. Myclobutanil, sold as *Spectracide Immunox Multi-Purpose Fungicide Spray* is probably the most commonly available fungicide that is effective on both these diseases. However, an important note is the *Spectricide Immunox plus* is not listed for apples as it contains an insecticide, Lambda-cyhalothrin, so be sure to buy the correct product.

Applications of the fungicide are made about 7 to 10 days apart from the green tip stage until after petal fall, the weather usually turns a little drier then and a 10-14 day interval can be used until the end of June when applications generally stop.

Timely Topics

Emerald ash borer homeowner and commercial workshops



The window to begin treatments to protect high-value ash trees from emerald ash borer is coming up soon. The City of Sioux Falls, South Dakota Department of Agriculture, South Dakota Extension Service and the South Dakota Arborist Association have teamed together to provide homeowners with information on how to identify an ash trees, the tell-tale signs of an infested ash, and what treatments are available to protect trees.

The homeowner workshops will be held at the Sioux Falls Extension Regional Center at 2001 East 8th Avenue. The first will be offered **Thursday April 18**, from 6:30 to 8:00 pm and the second, **Saturday, May 4** from 9 to 10:30 am. These sessions will cover how to identify infested trees, what treatment options are available and what are the best replacement trees.

We will also be sponsoring two workshops for commercial applicators. This is an opportunity for commercial pesticide applicators to learn how to use the many systems available for injecting trees with demonstrations by Arbor-Jet, Arbor-System, Rainbow and Warne Chemical (Chem-jet). The morning portion of the workshop will how to treat trees and which ash are the best candidates for treatment. This is a great opportunity for those already offering



emerald ash borer treatments in the area to refine their skills and companies that are thinking about beginning to offer this service.

These workshops will be held at Laurel Oak Park, 3401 East 49th Street, Sioux Falls. They will begin at 9:30 am by the Picnic Shelter and run for about two hours. The workshop will be held on **Tuesday, April 23** and repeated on **Tuesday May 7**.

City workshop on protocol for treating EAB in Sioux Falls

Immediately following these commercial injection workshops from 1 to 3 pm there will be City of Sioux Falls program on protocol for licensed arborists to follow when treating trees in the city. This program will be presented by Duane Stall, Forestry Supervisor, Bryan Peterson, Urban Forestry Specialist, Bret Winterfeld, GIS Specialist and John Ball, SD Forest Health Specialist. Arborists that are licensed to work in Sioux Falls are encouraged to attend this afternoon session. The afternoon session will provide a new and improved mobile app for arborists to record trees that are being treated in Sioux Falls.

Reporting EAB treatments is required by the Director of Parks and Recreation. There will be a tutorial for those that want to use this mobile app. Other reporting options will be discussed. To help manage the advancement of EAB, the City is providing tags to the arborists to be used when treating trees. General information will be shared on how and where to tag trees. At the end of the session tags will be available to pick up for this year's use. We have an opportunity to make this year's field season smoother than last year and we need your cooperation in keeping this insect at a manageable level.

The **Tuesday, April 23**, program will be held at the Downtown Library Room A, 200 N Dakota Ave, Sioux Falls. This program will also be repeated on **Tuesday, May 7** but at a different location, City Center Room 110, 231 N Dakota Ave, Sioux Falls.

Herbicide carryover: caution when planting new windbreaks

The planting season will be upon us in another month or two so now is a good time to remind producers and planters to be aware of herbicide carryover. Every year we have a few new tree belts fail or do poorly because of high residue concentrations of herbicides in the soil. The most common herbicide carryover issues in South Dakota are with Atrazine (Atrazine) and Picloram (Tordon^R).



Eastern redcedar seedlings killed by atrazine applied 2 years earlier.

Why residue can be a problem in one planting and not another can be related to when the herbicide was applied the year before (spring or summer), the amount of precipitation that growing season, soil texture, and soil pH. The later the application is made during a growing season the more likely the residue may cause injury the following year. Rainfall and soil texture influence persistence with a low rainfall and clay loam soil combination resulting in longer

persistence of harmful residues as the chemical does not leach quickly.

Soil organic matter and clay also increases soil absorption because of their chemical reactivity. This binding does reduce the potential amount that might be taken up by the plant, but also results in more persistence so may harm plants in future planting. Soil pH also plays a role and the more alkaline the soils (above 7.3) the longer an herbicide may persist in the soil. The chemical break-down of an herbicide occurs when it reacts with soil water and the rate decreases with higher pH. Microbial breakdown is also slower in alkaline soils due to lower populations in these environments. Microbial breakdown is fastest in slightly acid soils that are warm and well-aerated.

The soils where herbicides persist the longest are those that are clay loams to clay with a soil organic content greater than 3 percent and a pH greater than 7.5. The soils that will have the shortest carryover are sandy soils with low soil organic matter (2 or less) and are slightly acid (pH less than 6.8). South Dakota has more in the former than the latter.

Atrazine is commonly used on corn while picloram is often used on pastures. Atrazine and picloram have half-lives (the time for half the dissipation of an amount of active ingredient) of about two to three months which can double if the soils are clay with high organic matter (and freezing weather does not count). These two herbicides can have residue concentration too high for planting tree seedlings the following year particularly during dry years and I have seen carryover of atrazine for two years in clay soils and three for picloram.

Conifers seem to be the most sensitive and you might see the seedling hackberry doing just fine and the adjacent cedar row completely brown. Do not plant trees the year following an application of either herbicide and even avoid the second year if the herbicide was made during the summer and the soils are clay loams.

Here are some common herbicides and the active ingredient (or the active ingredient of most concern) and the time to wait before planting woody plants.

The previous crop was soybean

<u>Active ingredient</u>	<u>Products</u>	<u>Time since application</u>
Clomazone	Command	1 year
Coransulam	FirstRate	3 years
Fomesafen	Agent, Battle Star, Flexstar, Reflex	1-2 years
Imazamox	Raptor, Vulture	2 years
Imazethapyr	Pursuit, Praxis, Thunder	3-4 years
Sulfentrazone	Authority, Broadax, Spartan	2-3 years

The previous crop was corn

<u>Active ingredient</u>	<u>Products</u>	<u>Time since application</u>
Atrazine	Atrazine	2 years
Fluentsulam + clopyalid	Hornet, Stanza	2 years
Imazethapyr	Lightning	3-4 years

It was a pasture

<u>Active ingredient</u>	<u>Products</u>	<u>Time since application</u>
Aminopyralid	Milestone, Oversight	2 years ¹
Picloram	Tordon	3 years

¹for sensitive trees: black locust, honeylocust, Kentucky coffeetree, redbud, Siberian peashrub, many conifers

E-samples



This might be the most interesting sample for 2019! I had a horticultural professional notice these “bumps” on crabapple trees being sold at a chain store in Sioux Falls. He wondered if they were a scale insect but had never seen one like this before. These were not scales, but *snails*. The Animal and Plant Health Inspection Service in Pierre had them sent for identification and they were *Calcisuccinea luteola*, a species native to the southern US.

Fortunately for us not a concern as a new exotic threat, but unfortunately for them (the snails) as they did not appear to survive our cold.

Samples received/Site visits

Lawrence County (discolored pine)

Why is this pine turning color?



I received this picture and a follow-up sample. The sample only showed some saprophytes, fungi living on dying tissue but not responsible for the condition. I probably will have to visit the tree, but I suspect the problem is weather-related. We see pines turning color in late winter out in the Black Hills when the air temperature warms so the needles begin to transpire but the trunk and soils are cold, so water uptake is restricted. This water deficit in the needles results in the foliage turning a red to brown.

Often the needles will turn green once the soils warm but not always. Sometimes the needles are killed. If the buds are still soft and flexible, the tree may recover. I will plan a stop.

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