

# Pest Update (January 18-25, 2017)

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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 particular 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.

## Timely Topics

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## Timely Topics

**Should trees and shrubs be watered during warm winter weather?** A common sight in spring is greening lawns and browning evergreens. The browning is due to the tissue desiccating from a combination of warm, air temperatures causing water to transpire from the foliage and cold or frozen soils preventing a replacement of this moisture. Considering the temperatures we are experiencing across much of the state this week, this may not seem like an

issue. However, for some West River communities, particularly those on the fringe of the Black Hills, periods of warm winter days are common. And don't expect to see the injury until spring. It takes a couple of weeks of warm weather for the symptoms to become apparent. Once spring come I will start getting calls about browning evergreen, but by then it's too late to do much about it.



The watering should have started last labor Day. The best means of reducing winter browning is watering during the fall, not just before the soils freeze or during the winter. Water loss is minimal during days with air temperatures less than 40°F and essentially stops when the temperatures dip much below 32°F, even for evergreens with foliage exposed to sunlight. Furthermore, water movement up stems during winter days with air temperatures

slightly above freezing is extremely slow. Finally, soil temperatures also influence root permeability and water uptake at 33°F may be only a fifth of that at soil temperatures near 60° to 70°F. Interestingly, much of the water transpired by trees during warm winter days originates from water stored in the sapwood rather than the soil. The warm days can thaw some of this frozen water and makes it available for transpiration. However, bark is a good insulator and it takes a few days of warm weather for the sapwood to thaw.

The point is that water needs for woody plants in winter are generally minimal and additional watering may not be necessary. However, while supplemental watering will not harm the tree, it may be detrimental to the lawn beneath the tree. If the water does not infiltrate into the soil and instead forms a layer of ice over the turf. A few weeks of icy is sufficient to suffocate a lawn.



**Now is the time to look at some cherries to plant this coming spring.**

One way to pass the time on a cold winter day is to research what to plant this spring in the home landscape or field windbreak. The conservation districts are sending out their order form at this time of year and I have seen a lot of great choices among their wide selections. I will mention two in this *Update* and expand on the topic in the next issue.

Many districts are offering fruit trees and two that I particular like are the cherries developed as part of the Romance series from the University of Saskatchewan

fruit breeding program. While really most a sour than a sweet cherry, since they have moderately high concentrations of citric acid but you can eat these right off



the tree. The cherries are also dark red, almost a black so are closer in appearance to sweet cherries and can be eating fresh or used in a pie. The two cultivars I have seen listed are 'Carmine Jewel' and 'Crimson Passion'. 'Carmine Jewel' fruit is a little tarter, while 'Crimson Passion' is sweeter, but does not bear consistently every year. These tree mature at about 6 feet and require little care other than attention to site at planting. Cherries do not like "wet feet"

so demand a well-drained soil. The two major pests are birds and the spotted wing drosophila.

Birds like the fruit as much as people do so netting is almost an absolute prerequisite for fruit, otherwise all you'll see are a lot of stalks rather than cherries. The spotted wing drosophila is a small fruit fly that inserts its eggs into ripened fruit. The larvae hatch out in a few days and can quickly turn the fruit into mush. Distribution of this insect is spotty across the state and even within a county so some growers may not experience any problem with this insect while a neighbor only a few miles away has all their cherries (and raspberries, strawberries) infested. While there are treatments for this insect, I also recommend pruning cherry trees to reduce the cool, shaded spots in the canopy that the insect seems to prefer for resting and egg-laying sites.

## E-samples



**Squirrels at work.** Squirrels have been busy chewing away on tree trunks and branches during those relatively warm winter days between our deep freezes. The damage appears to be worse in eastern South Dakota and adjacent Minnesota and the most likely culprit is the eastern gray squirrel. This small rodent can strip the bark completely around a small trunk or branches in a few days. Oftentimes these injured stems or branches will flag in the spring (yellow, wilting leaves) and then die back. Why squirrels feed on the tissue is not known for certain, but they do tend to feed most when the sugars are concentrated in the soft inner bark during the winter and spring. The one thing we do know is they seem to like maple and elms in the winter and spring and



oaks and walnuts in the fall. There is not much that can be done to discourage them from feeding on a particular tree. They seem to prefer some to others, even of the same species. Some maples and elms are just tasty I guess.

If the tree is isolated so the squirrels cannot jump to it, a metal barrier, the cones often sold to keep squirrels from reaching bird feeders, can prevent squirrels from reaching the branches (but remove it come spring to keep from girdling the stem). There are also repellants on the market but effectiveness is spotty at best. A .32 caliber round ball works great in a long rifle and this is one of our few pests that can be made into great chowder! However, if anyone is considering shooting or trapping these rodents be sure to check the game laws in your state. Generally these are considered small game and a small game license is required as well as observing a season. Also you are likely to attract the attention of your neighbors and local police department when firing into the canopy of the tree in your front yard so this is not the treatment of choice in urban areas.

As an interesting trivia point, the eastern gray squirrel, a North American native, is a pest we exported to Great Britain back in the 1870s. There it has become a greater pest and is responsible for the destruction of oak and beech forests.



**Black knot** (*Apiosporina morbosa*) is very noticeable in trees now that the leaves are gone. This is a fungus that infection results in woody swellings, the knots, on branches and trunks of cherries. The disease can also occur on plums though is far less common on these hosts. The disease begins as a slight swelling of a newly infected twig. The twig may also have a faint color change, more of an olive green. The end of the first year, or sometimes not

until the second year of infection, the swelling becomes an enlarged black knot. This knot sometimes has a white covering to it and this is actually a fungus living on a fungus, the mycoparasitic fungus (*Trichothecium roseum*).

Many trees have some resistance to this disease so it is common to see it on three cherry trees in a belt and no knots in any of the other trees. The simplest solution here is to just remove the highly susceptible ones and replant. However if the disease is showing up in much of the belt your options become more time-consuming. First prune out and destroy all the knots on the trees and those found on any trees within several hundred yards of the belt. This pruning must be accomplished before the beginning of March and the clipping destroyed, not merely left on the ground beneath the trees. The pruning will take two years to complete as the first year infections, the slight swelling of the twig, is not clearly visible and you often do not see them until the knot forms the second year.

After all the winter sanitation pruning is completed, and only if the sanitation pruning is done, the producer can consider spraying with a fungicide to protect the plants from becoming infected again. The most common fungicide used contains chlorothalonil as the active ingredient (and labeled for use on cherries). Lime sulfur was once the most common fungicide but it is no longer available to homeowners (the registration was voluntarily pulled back in 2008 due to the caustic nature of the chemical). The first application is made at bud break and treatments are continued every two weeks until the new shoots have hardened off or the weather turns dry (usually about mid-June). This is a fairly long time period for treating and the treatment must be applied every year to continue the protection. Some producers chose just to prune and spray every five or so years and look at suppressing the disease rather than attempting to eliminate it.

## Samples received/site visits

Charles Mix County



not the newest ones. The other unusual symptom is only the tips of many of these cast needles is discolored and there is almost an even, abrupt line of injured tissue in these needles. This symptom pattern usually points to an abiotic origin so I will have to get back to you after further investigation.

**What is wrong with these spruce?**

This is a bit unusual in that the youngest foliage, the needles formed in 2016, are dropping. Most of our serious needlecast diseases result in casting of the second-year needles,



Turner County

**Is this black knot on this hawthorn?**

Great question and sample as quince rust and black knot are often confused. First, hawthorn does not become infected with black knot. This disease is confined to the genus *Prunus*, cherries and plums. Quince rust (*Gymnosporangium clavipes*) infection on hawthorn (*Crataegus*) also results in blackened knots, but these usually do not reach the same size as black knot. The white in the quince rust knots is not a mycoparasitic fungus, but the fruiting structures of fungus.

The disease often results in distorted fruit and discolored foliage but sometimes the infection can result in twig galls (closely related cedar-hawthorn rust can result in similar galls). These twig galls eventually girdle the twig which results in twig dying back. A belt of infested saplings may remain as stunted, distorted shrubs rather than forming trees. The treatment for this disease is similar to the treatment for that of black knot but with an important difference. Quince rust,



sometimes called cedar-quince rust, spreads back and forth between “cedars”, really eastern redcedars and Rocky Mountain junipers, and hawthorns (and juneberries, quince, pear and apples among a few other deciduous plants). So all the infected junipers within several hundred yards need to be removed. The infected junipers will have small spindle-like swellings on their twigs (not to be confused with the woody globular swellings that form from

cedar-apple rust infections). Finding the junipers with these galls can be a difficult and time consuming task.

Fungicide applications can also be a part of the treatment, but for quince rust fungicides containing myclobutanil as the active ingredient should be applied as the leaves unfold and repeat three more times at 10 day intervals. This treatment may have to be applied several years in a row to suppress the disease.

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