# Pest Update (October 21-28, 2015)

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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. **Walnut samples may not be sent from any location – please provide a picture!**

**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.

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## Timely topics

## It's the season when folks are buying firewood.

**All firewood is not the same.** Tree species differ in the heat value of their wood as well as the color of the flame, fragrance and amount of sparks. Crabapple and apple have one of the most colorful flames and maple one of the smokiest. Cottonwood goes to ash fairly quickly. Pine and spruce produce a lot of sparks while bur oak produces relatively few. Apple is known for its fragrance and some woods, such as catalpa, for their odor when burned. The most important factor for many homeowners is not the color or fragrance but the heat so here is the ranking of fuelwoods in million BTUs per cord of seasoned wood.

| Species | BTUs[1] (million per cord) | smoke | sparks |
|---|---|---|---|
| Bur oak | 25 | Low | Few |
| Mulberry | 25 | Moderate | Many |
| Honeylocust | 24 | Low | Few |
| Sugar maple | 24 | Heavy | None to few |
| Black walnut | 22 | Low | None |
| Apple and Crabapple | 21 | Low | Few |
| Birch | 21 | Moderate | Few |
| Redcedar/Rocky Mt Juniper | 21 | Moderate | Many |
| Green ash | 20 | Low | Few |
| Hackberry | 20 | Low | Few |
| American elm | 19 | Moderate | Few |
| Boxelder | 17 | Moderate | Few |
| Willow | 17 | Low | Few |
| Spruce | 16 | Low | Many |
| Ponderosa pine | 15 | Moderate | Moderate |
| Aspen | 14 | Moderate | None to few |
| Cottonwood | 14 | Moderate | Few |
| Basswood | 13 | Moderate | Few |

[1] BTU stands for British thermal unit, the unit of energy required to increase the temperature of one pound of water from 60 to 61$^{o}$F. A gallon of propane is the equivalent of 100,000 BTU's so a cord of green ash has the heat equivalent of about 200 gallons of propane.

As you can see from the list, oak is going to generate almost twice the heat as basswood or cottonwood so you can expect to pay much more for oak. Sales of 'mixed hardwood' often contain mostly cottonwood with a little ash – it's mostly go'fer wood meaning you are always "going for" more as it burns quickly!

Cottonwoods are best for kindling as they burn readily but to keep the fire going oaks and honeylocust are among the best.

**You should always buy firewood by the cord or as a fraction of a cord.** A cord is a stack of wood 4 feet wide, 4 feet high and 8 feet long, or similar dimensions, that containing 128 cubic feet of space. This will usually mean about 70 to 80 cubic feet of solid wood once the air space between pieces is subtracted. If you buy firewood by the cord you are purchasing a known quantity of wood. If you buy by the pick-up load, you getting a range of possibilities. Most pick-ups with a 6-foot bed hold about a fourth of a cord while an 8-foot bed may hold a third of a cord. You can find pick-up loads of wood being advertised for around $75 to $90 this fall while a cord may cost $200 or even more depending upon the species. A pick-up load may sound like the better bargain since it is cheaper but remember you are getting about three to four times the amount of wood with a cord.

These are prices for the eastern side of the state. There are numerous firewood sellers in the Black Hills selling pine by the cord for about $100. However, pine is not the best wood for burning while lower heat value than oak and maple. It also can produce a lot of sparks. However, it is abundant in the Black Hills so is the main species sold there.

**Be sure to buy seasoned firewood.** This is wood that has been split, stored off the ground and protected from the elements for at least nine months. After this time seasoned wood has a moisture content of less than 28 percent so it should burn long and hot rather than steam and smoke in the fireplace. A quick way to check if the wood is dry is to examine pieces and see if they have cracks and splits. As wood dries, it shrinks so cracks will appear in the end of the split logs.

**Some other trivia facts on firewood.** One in four homes in South Dakota has a fireplace or woodstove, though only about one out of six actually use them. The typical home uses wood as a back-up source of heat or burns for pleasure rather than as their primary source of heat or cooking. They burn about 1.35 cords per year. In South Dakota, woodstoves are more popular than fireplaces as a heating source. The most common hardwood we burn is ash, about 22,000 cords a year, followed by elm at 18,600 cords and cottonwood at 15,000 cords. We also burn about 15,000 cords of pine annually.

**Finally buy any firewood from local sources.** The most likely potential source of emerald ash borer, an invasive insect already responsible for the loss of more than 40 million ash trees across the Midwest, is from out-of-state firewood. Purchasing firewood that has been harvested within the state is one of the best means of preventing the introduction of this insect to our state's forests.

## E-samples

The very fine webbing on the lower trunks of hackberries and other smooth barked trees is a common concern at this time of year but it need not be. The webbing is the work of Psocids, **bark lice**, insects that construct fine silky webbing in which colonies of the insect live (they are also known as "bark cattle" since they feed in herds). They feed on microscopic mold, fungi and lichens (as well as other sources of organic matter) so do not harm the tree. They are merely living on the tree. The webs begin to fall apart around Halloween but may appear again as the insects resume activity in the spring. A high pressure stream of water is sufficient to remove the webbing.

These pictures are from the Conservation District in Beadle County with the question; "What is boring in the boxelder?" First, there are many insects that regard boxelder as home. One that is fairly common is the **maple borer**, *Agrilus masculinus*, a native insect but a close relative to the emerald ash borer (EAB). The maple borer creates a D-shaped exit hole, almost the same size as the one cut by the emerging emerald ash borers. Since boxelder, also known as ash-leaf maple, has a similar appearance to ash trees, I usually get at least two samples a year of someone reporting EAB in the state that turns out to be this maple borer in a boxelder. The maple borer only infested declining boxelders so there are no management recommendation other than remove standing dead trees. If the boxelder is healthy, it can usually tolerate an attack.

Boxelders can also become infested with the flatheaded appletree borer (*Chrysobothris femorata*) as well as a few rounded borers that attack dying or

even dead boxelders. Usually borers in boxelders are an indication of a problem rather than being the problem.

I received this great picture from the Conservation District down in White River of **Juniper broom rust** (*Gymnosporangium nidus-avis*). This is a closely related disease to cedar-apple rust but the symptoms differ. The broom rust causes these witches-broom, a proliferation of short shoots, to occur on branches in the cedar tree. The brooms do not harm the trees and most brooms die out in a year or two but some can survive for a decade or longer. There is no need to treat the disease on the junipers but the brooms can be pruned out if someone does not like the appearance (think of them as ear hairs, no real problem but the looks!). We find the disease on Rocky Mountain juniper (*Juniperus scopulorum*) and eastern redcedar (*J. virginiana*).

The real problem with Juniper broom rust is the disease alternated between the juniper and several broadleaf hosts, most commonly apple, crabapple and junipers. The disease on these hosts causes leaf and shoot blight. I usually do not see this disease on apples or crabapples but I have seen pockets of juneberries in West River draws that are covered with shoot blight from this disease.

## Samples received/site visits

McCook County **A homeowner would like to know what this shrub is called.**

This shrub is known as burning bush (*Euonymus alata*) because of the brilliant red fall color to the leaves. It is one of our best for fall color (and was in last week's *Update*) and the corky twigs also provide winter interest. It is also known as 'rabbit candy' as the bunnies will strip the trunk and branches of the bark during the winter.

Minnehaha County **What is wrong with this apple tree? It produced lots of apples last year and none this year.**

The problem may have been the late frost we experienced this past spring that killing the flowers. I saw many apple tree this year that did not bear a single apple. The other possibility is that this particular apple tree is alternate-bearing. Some apple varieties such as 'Haralson' and 'Haralred' are known for producing a large crop of apples one year and almost none the next. While thinning out the young fruit during the "on" year helps damp this oscillation, it cannot entirely cure

it. If the tree has regularly borne fruit each year until this year I suspect the frost was the cause.

Stanley County **What is wrong with this dwarf burning bush?**

Spray drift is a possibility for the continual dieback, it is a frequent reason for dieback of this species. However, it may also be the bacterial disease called crown gall. I have seen this disease in a few burning bushes in the state. An easy way to check for the disease is to pull some of the soil away from the base of the plant and look for galls, corky nodules, on the roots near the base of the plant. If these are found the problem is crown gall and the best treatment is to remove the plant and not grow burning bush there again.

Stanley County **What is wrong with this creeping juniper? There are three plants and one of them is dying near the center.**

There are two possibilities here, juniper twig blight and/or voles. We saw a lot of vole damage on junipers this past spring and you might check to see if there are gnawing marks near the base of the dying branches. This is a good sign of vole damage. The other possibility is juniper twig blight caused by the phomopsis, a fungal disease. I was able to find the fruiting structures of this fungus on the tips of the branches. Treatments for this disease are timely fungicide applications beginning in May. I will be posting a list of appropriate chemical for this and other diseases next March.

Pipestone, MN FL1500037 **What is wrong with these blue spruce? They were transplanted about 5 years ago as 6 to 8 foot-tall trees. They are dying from the base up.**

This wins the prize for the largest sample submitted this year! The shoot growth on the sample was much reduced for the past several years indicating a stress event. The sample was also covered with the resin blisters of cytospora canker. I rarely see this disease so noticeable on trees this young and then only on trees that were planted on poor sites, either poorly drained and too wet or too dry. There is no chemical control for this disease and it is probably best to just remove the trees.



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