Pest Update (January 7, 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.

Timely Topics

It's time for a review on buying firewood

The cold weather is generating lots of firewood sells. Many homeowners did not start the cold season with an adequate supply of wood and are now purchasing firewood from local dealers, newspaper ad and the internet. Here are a few tips if you

are buying large quantities of firewood for heating your home this winter.

What are the best trees for firewood?

Tree species differ in wood heat value as well as the flame color, fragrance and sparks. Crabapple and apple have one of the prettiest flames and maple one of the smokiest, while cottonwood goes to ash fairly quickly. Pine and spruce produce a lot of sparks. Apple has a nice fragrance but other woods, such as catalpa and slippery elm, can even have an odor. The most important factor for many homeowners is not the color of the flame or fragrance but the heat generated so here is the ranking of firewood in million British Thermal Units[1] (BTUs) per cord of seasoned wood. It takes about 100 to 150 million BTU of energy to heat the average home.

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 should expect to pay much more for oak firewood. 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.

How is firewood sold?

You should always buy firewood by the cord or as a fraction of a cord. A cord is a stack of split wood that is 4 feet wide, 4 feet high and 8 feet long. This is about 128 cubic feet and, after removing the air spaces, about 70 to 80 cubic feet of solid wood. If you buy firewood by the cord you are purchasing a known quantity of wood. If you buy by the pick-up load or face cord, you getting a range of possibilities and it will be difficult to make comparisons among seller. Most pick-ups with a 6-foot bed hold a fourth or fifth of a cord while an 8-foot bed may hold a third to nearly a half if stacked high enough. A face cord usually contains about one-fourth a cord but this can vary among sellers. You can find pick-up loads of wood being advertised for around $100 while a cord may cost $300 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 five times more wood in a cord.

Are there any other factors to consider when purchasing firewood?

There are two other considerations. First, it is important to buy seasoned firewood**.** This is wood that has been split. stored off the ground and protected from the elements for about six to nine months. After this time it will have moisture content of less than 28 percent so it should burn long and hot rather than steam and smoke in the fireplace.

Second, 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 50 million ash trees across the Midwest and East, is from out-of-state firewood. Ash firewood from Minnesotaa and Iowa, both state that have emerald ash borer populations, is being marketed to homeowners in South Dakota. 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

I received this picture of severe rabbit damage on hundreds of mature trees. Apparently the rabbits are feeding on Amur maples, crabapples and even eastern redcedars. This is the most severe report I have received so far this winter on rabbit damage to trees. We experience most of our rabbit damage in late winter when the rabbits have depleted most of their other food sources and the snow is still covering much of the ground. I rarely see this much damage so early in the season. Other than hunting or trapping there is not a lot

that can be done to prevent damage in windbreaks. Repellents can be useful but are not always effective. The repellents work either by odor or taste. The odor repellents that contain ammonium soaps of fatty acids are not that effective when dealing with large populations of rabbits and limited food choices. Even the odor repellents that contain putrescent egg solids, which are very effective with deer, may have only limited success with rabbits. The taste repellents can also be ineffective; many of the bitter ones apparently are not detected by the rabbit's taste buds. The taste repellent that seem to work the best are ones containing capsaicin which is a throat irritant and discourages further feeding.

Samples received/site visits

Marshall County **What is attacking and killing our Liberty elms?**

'American Liberty' elms often shorted to Liberty elms are clones of American elm that have been promoted by the Elm Research Institute for their tolerance to Dutch elm disease. However, these sanme trees are highly susceptible to a disease called elm yellows. This disease results in the elm branches dying back and eventually the entire tree dies. Elm yellow is not common in South Dakota but has been reported in the northeastern part of the state. I cannot tell if elm yellows was responsible for the decline of this elm from the sample. The bark and wood sent in do have the emergence holes and galleries of the banded elm bark beetle. This insect was first found in South Dakota about a decade ago and generally feeds on Siberian elms but does attack American elms, particularly if they are stressed by pathogens or drought. Since only one of the trees is dead, the best recommendation may be to treat the trunks in May with an insecticide containing either permethrin or carbaryl and labelled for bark beetle control to prevent attacks on the other elms. If any of the other elms begin to decline next summer, please contact me for a site visit.

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