Pest Update (January 21, 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.

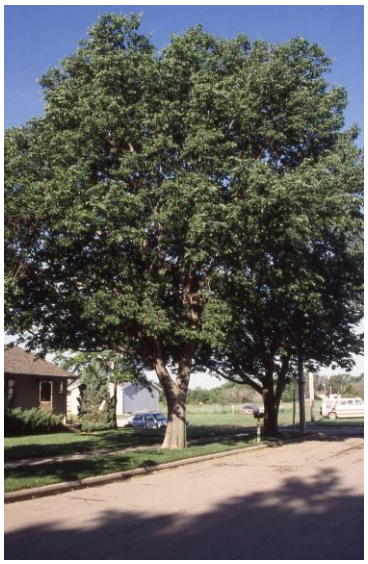
Timely Topics

Now is the time to place your order in for trees. I see many of the conservation districts have their lists out for landowners to order trees for spring. Ash, due to the looming threat of emerald ash borer to our state, is now absent from many of these lists and landowners are looking for possible substitutes for this tree in their belts. One ash is still a possibility and it is being offered by some of the districts. This tree is the Manchurian ash (*Fraxinus mandshurica*). This ash species is native to the same region of Asia as the emerald ash borer and since

the two have a close evolutionary history, the borer is not a serious threat to the tree. However, the borer will attack Manchurian ashes which are stressed and this ash species is not as drought tolerant as our native green ash. If Manchurian ash is planted on drought soils it may be vulnerable to emerald ash borer whenever it arrives in that particular location. Manchurian ash is hardy to USDA Hardiness Zone 3b, adapted to slightly alkaline soils and Windbreak Suitability Groups 1, 1K, 2, 2K, 3, 4, 4C and 5.

I have also seen American linden, also known as basswood (*Tilia americana*) placed in belts instead of ash, but linden is not adapted to windy, dry sites, common sites for windbreaks. It is a fine "town tree" for most communities on the east side of the Missouri River and also in the communities of Rapid City, Sturgis and Spearfish but the few you can find in towns such as Lemmon and Murdo do not appear to be thriving. The tree is hardy to USDA Plant Hardiness Zone 3b (but not windy sites), adapted to slightly alkaline soils and Windbreak Suitability Groups 1 and 3.

The two trees commonly looked upon as ash substitutes are hackberry (*Celtis occidentalis*) and Harbin pear (*Pyrus ussuriensis*). Hackberry is a relatively fast-growing, hardy tree that is adapted to much of the state. It is native to South Dakota expect north of the Cheyenne to the Missouri River, though I have seen fine trees growing in this area and they line the bank along the south side of the Cheyenne. While this tree is typically a bottomland species, similar to green ash, it also performs well on drier sites but not nearly as droughty as those ash can tolerate. There are two concerns with hackberry. First, it is susceptible to a number of pest problems, though most are more cosmetic, such as hackberry nipple gall, rather than being a serious threat to the tree's health. Hackberries also require training (pruning) for the first few years after planting as they tend to develop low canopies with long branches. I have seen them grow *out*, more than *up*, if they are not pruned to a single stem. However once corrected, hackberries can reach heights and spreads similar to those attained by green ashes. There are two common cultivars, 'Oahe' selected from a tree near Gettysburg, SD that has performed well in windbreaks and 'Prairie Harvest', a Minnesota selection that appears to be slightly hardier. Hackberry is hardy to USDA Plant Hardiness Zone 3b, adapted to slightly alkaline soils and Windbreak Suitability Groups 1, 1K, 3, 4, 4C and 5.



The other tree, Harbin pear, also known Ussurian pear, does not reach the same height as ash. Most of our mature Harbin pears are only 25 to 35 feet tall (with

an equal spread) but they can be an ash replacement in certain situations. The tree is very hardy and is adapted to a wide range of soil pHs and textures. However, it does not tolerate saline soils. Since it is a pear, the tree will be covered with white flowers in the spring. I have seen belts that are almost a ribbon of white in early May. There will also be small, hard, pears in the fall. These small, somewhat rounded, fruits can be used for jams and jellies, but best to let the fruit go through a few frosts first. There is also a wide range of flavors, from mild to bitter, so you may have to taste-test a row to find a tree or two that provides palatable fruit. There are a number of cultivars but the one most commonly used in windbreaks is 'McDermand'. Harbin pear is hardy to USDA Plant Hardiness Zone 3b, adapted to slightly alkaline soils and Windbreak Suitability Groups 1, 3 and 5.

E-samples

Bark stripping is commonly seen at this time of year on a wide range of trees species. Usually the culprit is not seen, tree owners often are at a loss as to who is responsible for the damage to the tree. There are four wildlife species that do most of the damage to trees and they each have slightly different type of damage. Deer will browse branch tips and rub the bark off young trees but this damage is generally limited to the lower 4 or 5 feet of the trunk. Rabbit feeding is even lower on the trunks except during winters with high, solid snow drifts. I have seen the canopies of small apple trees browsed by rabbits if the drifts are covering all but the tops of these trees. Voles will also feed on the trees but only on the portion below the snowline and usually this damage is limited to the lower branches of cedars (junipers)

However, if the damage is higher in the canopy then the damage is caused by porcupines or squirrels. Porcupines feed on tree bark and seem to prefer the tender branches in the upper most part of the canopy. They also feed on the adjacent trunk to these branches. Porcupine damage occurs on ponderosa pines in the Black Hills, commonly trees that are between 10 and 20 feet tall. The porcupines will feed around the stem and one or two of the branch whorls girding the top of these trees. The teeth marks are larger than ones made by squirrels (larger

than 1/8-inch while squirrels are usually about 1/16-inch) and the marks can go into the sapwood as porcupines may chew deeper into the tree than squirrels. They also feed on a wide range of hardwood trees though basswood, elms and maples seem to be favorites.

Squirrels are another common culprit for bark gnawing and stripping. Bark strips or chunks can often be found lying on the snow or ground beneath the tree, sometimes there are almost piles of bark as the feeding can be extensive. This is a key difference between feeding by porcupines and squirrels. Trees gnawed on by squirrels will usually have the ground beneath them littered with narrow, about 1/2-inch wide, strips of bark. This is usually not the case with porcupines as they consume the bark. While bark is an essential part of a porcupine's diet, no one knows why squirrels gnaw and strip the bark off trees. They may be fulfilling some nutritional need in their diet though some authorities believe this feeding is done mostly by pregnant squirrels that are late in their term (I guess a pickle substitute).

Samples received/site visits

Perkin County **What is the problem with these Austrian pines?**

These trees are infested with the foliage disease Dothistroma needle blight. This is a common disease of Austrian pines, though not as common as Diplodia tip blight. A major difference between the two diseases is that Dothistroma affects the needles while Diplodia the shoots. A common symptom pattern to Dothistroma is banding of the needle while with Diplodia the needles are usually stunted and turn tan, brown or gray. There are other disorders and diseases that can cause similar symptoms to Dothistroma so it is easy to confuse. Management of the disease involves copper fungicides applied as the new growth expands (mid-May) and repeated in late June. Ponderosa and Austrian pines should also receive a third application in mid-July, particularly if the summer is wet.

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