

Pest Update (November 8-15, 2017)

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John Ball, Forest Health Specialist SD Department of Agriculture,
Extension Forester SD Cooperative Extension

Email: john.ball@sdsu.edu

Phone: office 605-688-4737, cell 605-695-2503

Samples sent to: John Ball

Agronomy, Horticulture and Plant Science Department

rm 230, Berg Agricultural Hall, Box 2207A

South Dakota State University

Brookings, SD 57007-0996

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.

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Plant development for the growing season

The cold weather is coming in waves across the state. We have a little cold and then a spell of warm weather. This week I killed (hopefully) my last mosquito for

the year! This weather is a little confusing to us on what to wear from day to day, shorts or a winter coat and it's become a real problem for our woody plants.



The first trigger in preparing for the winter is the shortening days – this occurs on schedule every year. The second trigger is exposure to repeated hard frosts and this has not been as dependable this year. We have trees and shrubs across the state still in full leaf, though this recent cold snap has crinkled and dried

them. I suspect we may see some tip dieback on these trees and shrub that did not quite go dormant.

Emerald ash borer - Update



The *Update* will provide weekly information on the location of emerald ash borer confirmed in South Dakota or a bordering county of an adjacent state. ***At this time no emerald ash borer infested trees have been identified in the state or an adjacent county of a bordering state.*** The nearest infestations are highlighted in red; the Twin

Cities of Minnesota; Buena Vista County and the counties in central Iowa and the Omaha-Council Bluff area of Nebraska and Iowa.

There have been no new infestations confirmed near the South Dakota border. The Omaha region, Alta, Iowa and Welcome, Minnesota are still the closest infestation. At this time of year new discoveries are rare so it appears South Dakota has dodged the EAB bullet one more year, however, we are unlikely to have our string of luck hold much longer and I anticipate finding the insect in the state within a year or two.

Timely Topics

The Capital Christmas tree began its journey to Pierre last week to grace the Capitol during the Holiday season. This is a good time to update the annual Christmas tree selection and care article for the *Update*.





Real or Plastic? Christmas tree lots are already beginning to spring up around the state and Thanksgiving marks the start of the Christmas tree season with more than 30 million trees being sold between Thanksgiving and Christmas. Another 50 million homes use artificial trees either for convenience or environmental concerns. However, the traditional Christmas tree can be the environmental friendly way to celebrate the holidays. Real Christmas trees can come as close as the nearest choose-and-cut while most artificial trees journey to your home starts in Asia. The real tree is made of wood (obviously) while the artificial plastic. And while you don't have to buy an artificial tree every year, the average artificial Christmas tree may have a life span of six to ten years before it ends up in a landfill and it will remain there for a long, long time. The real Christmas tree, while used for only one season, can become valuable mulch, a winter bird feeder or even used as a fish habitat after the holidays.

Here are some tips on picking out the perfect tree. The best way to obtain the freshest tree is to harvest it yourself at a choose-and-cut Christmas tree farm or obtaining a Christmas tree permit from the Black Hills National Forest.

If cutting your own tree is not possible, here are some tips for checking freshness at a Christmas tree sales lot. First, give the tree a light, but vigorous shake. Only a few interior needles should fall out of the tree if it is fresh. If a pile of brown needles appears on the ground after shaking, it is not a fresh tree. Next, reach into a branch and pull the needles *gently* through your hand as you move out towards the tip. The needles should bend, not break, as your fingers run across them and the branch should only slightly bend to the touch. If the needles break off completely this is another indicator that the tree has already dried out too much. Likewise if the branch is not flexible more like a wooden stick, the tree has already dried out and is not worth buying



Regardless of whether you buy a tree from a lot or cut it yourself, once you get the tree home leave it outside in the shade while you set the stand up indoors. The choice of a stand is probably the most critical factor in maintaining the freshness of the tree once in the home. The stand should be able to hold one-half to one-gallon of water as the new tree may absorb this much water on the first day. A good rule-of-thumb is a tree will use 1

quart of water per day for every inch trunk diameter at the base. If you have a tree with a 3-inch base, it may use 3 quarts of water per day after the first day.



Just before you bring the tree in the house cut the base between a half and one-inch from the bottom. This will open the sap-filled pores that transport water through the tree. The base cut does not have to be slanted. The angle makes little difference in the amount of water absorbed so cutting perpendicular to the trunk is fine. Do not drill holes into the trunk or whittle the trunk smaller, neither will improve water uptake. Also

brush off any debris or dirt on the base before placing it in the stand.

Once the tree is in the stand add water and then *never* let the stand become empty. If the stand becomes empty for more than six hours, the tree's pores plug up again. Water uptake will be significantly reduced, the tree will dry out sooner than expected and the needles will soon begin to fall. If the tree stand does dry up for half a day or more there is nothing that can be done other than pull the tree out of the stand and recut the base – not a pleasant task once the lights and ornaments are already up.

Nothing needs to be added to the water in the stand to improve needle retention. The commercial “tree fresher” products do not significantly increase the life of the tree. The home remedies such as aspirin, sugar, soft drinks and vodka do not work and may be harmful to pets (or partyers) that may drink from the stand.

Place the tree in a spot that receives only indirect light from the windows and not near any heat duct. This will reduce water loss from the tree and prolong its freshness. Another tip to prolonging freshness is to start out with a clean stand. Before setting up the tree stand wash it out with a solution of about a capful of bleach to a cup of water. This will reduce the growth of microorganisms that may also plug up the tree's pores.



Which is the best tree? Each species has its good points but the Fraser fir (pictured to the left) is probably one of the top favorites. The tree has a very pleasant scent, excellent needle retention - they will last the entire holiday season - and the branches are stiff enough to hold most ornaments (however if really heavy ornaments are to be placed on the tree go with a spruce). The bright green needles are white on the underside and this

makes a very attractive display. Balsam fir is another good choice though the needles do not last quite as long and the branches are not as stiff. Canaan fir,

another popular fir appears to have qualities similar to Fraser fir and is also becoming a popular Christmas tree.



Pines are very popular with Scotch pine, pictured to the left, probably the most popular Christmas tree in the country. It has a pleasant scent, excellent needle retention and the branches are stiff enough to hold heavy ornaments. Eastern white pine is another pine commonly sold at Christmas tree stand. The needle retention is not quite as long as Scotch pine and the branches are very flexible meaning heavy ornaments may fall off. White

do have very soft needles and if you are going to run into the tree in the middle of the night this is the one!



Spruces are not as popular of Christmas trees primarily due to their relatively poor needle retention. If you want to have a blue spruce as your Christmas tree, you probably should wait until a couple of weeks before Christmas to set it up as the needles may only last that long. Once the needles begin to fall, blue spruce are about the worst tree in the house as the fallen needles are sharp and seem to find their way into socks and slippers. Blue spruce, pictured

to the left, has the best needle retention of the spruces – they may last a few weeks or more - but does not have much of a fragrance. The branches are very stiff, however, and can support the heaviest ornaments. White spruce, or Black Hills spruce is not a commonly available Christmas tree at lots though is used in the Black Hills where it is cut from the National Forest. It does make a nice tree, particularly when cut fresh, though needle retention is poor. The tree also does not have much of a fragrance and occasionally Black Hills spruce trees can produce a slight musky odor when the foliage is bruised.

Christmas tree characteristics of popular trees

| | Fir | | Pine | | Spruce | |
|------------------|------------|------------|-------------|------------|--------------|-------------|
| | Balsam fir | Fraser fir | Scotch pine | White pine | White spruce | Blue spruce |
| Needle retention | E | E | E | VG | VG | VG |
| Branch stiffness | G | G | E | P | VG | E |
| Fragrance | E | E | G | VG | P | G |

E=excellent, VG=very good, G=good, P=poor

E-samples



Ash borers are still a concern to people around the state and I continue to receive picture of holes in trees with the question, “Do you think this is emerald ash borer?” Fortunately none have yet been this insect but I do see a lot of holes that match our native ash borer of which we have plenty already, the ash bark beetle, ash/lilac borer, ash/privet borer, banded ash borer and the redheaded ash borer to name the most common boring insects found in declining ash trees across the state. The banded and the redheaded ash borer make a round hole as the adult exits and this can appear almost oval if the insect emerge at an angle to the bark (oval hole in picture to the left). The emerald ash

borer makes a crisp D-shaped hole as the adult exits the tree that is almost unmistakable (picture to the right). If you have to think if the hole is D-shaped, it probably isn't. Another sign of emerald ash borer attack is woodpecker damage (the large hole in the upper center of the picture). The banded and redheaded ash borers are also found just beneath the bark for part of their life cycle so are easy prey for the birds. I have seen these native insects strip bark off trees to the same extent that I have seen on emerald ash borer trees out East.



The major difficulty we will experience once emerald ash borer is confirmed in the state and that many of our ash are already showing dieback and infested with the native borers. It will be hard to detect the emerald ash borer infested trees among the rest and even harder to decide which trees to protect from infestations.

A **tree identification** question came in over the weekend and I had someone bring me a sample of the same leaf yesterday. This is the white poplar (*Populus alba*), a tree native to central Europe to Asia. It is one of the toughest trees we have, tolerating dry and saline soils. These are some of the tallest trees in Eagle Butte and Wall,



two communities that are marginal sites for many tree species. However, it is not recommended for planting and is even banned from some communities because of its profuse suckering. If you have a tree in your yard and you quit mowing, you will soon find a grove of these trees in your lawn!

The leaf is sometimes confused with silver maple (*Acer saccharinum*) as they both have lobes and a light color to the underside. The biggest difference is the leaves are opposite, across from one another on the twig, for the silver maple and alternate, adjacent to one another, on the white poplar.



I also received a picture of an Asian pear. The Harbin or Ussurian pear (*Pyrus ussuriensis*) has been planted in South Dakota for a century or more and these trees can be found in towns and windbreaks throughout the state. The pears do not resemble the pears you buy in the store either by shape or taste. The Harbin pears are greenish yellow, round and are often only a little more than an inch around. The fruit can be gritty; taste like it has been rolling on the beach for a while, though there are many folks that say you can make a nice jam out of them (or a fruit cake). They are not a favorite with the birds (or people).

Samples received/site visits

Minnehaha County
disease?

Does this Scotch pine have pine wilt



Pine wilt disease is a lethal disease of our introduced pines, Austrian, mugo, and Scotch pine. It does not affect our native ponderosa pine and only occasional is a problem on eastern white pine. The disease is caused by a small nematode and its associates and they are carried from infected to health trees by sawyer beetles. Once introduced into a new tree, usually spring, the nematodes manage to kill their new host by autumn.

The disease was limited to the southern third of the state for many years but now we have confirmed cases as far north as Watertown and Spearfish. I suspect we will find it in Aberdeen within five years if our summers continue to warm. Apparently the disease expression is tied to summer temperatures and our summers have become slightly warmer over the past decade.



There are many reasons for a pine to turn brown, wilt, and die so the nematode must be confirmed in the tree to be sure it is the causal agent. The nematode can be extracted from an increment coring of an infected tree or better, a “cookie”, a 1 inch or so cross-section of an infected tree taken at a lower whorl of branches. The core may miss pockets of the nematodes and apparently that was the case with this tree

as the first sample from a coring came up blank but the second one had the nematode.

The sample also had several other nematodes in the tree, fungal feeders, so not only do nematodes need to be found in a tree, but the right nematode.



**Pennington County
What is causing this swelling on these pines?**

There are not many pests that will cause a terminal to become distorted but there are some herbicides. An analysis of the tissue revealed 2,4-D and dicamba, two growth regulator herbicides. Considering this site is far removed from crops, the most likely source was a post-emergent broadleaf herbicide used to control weeds in the meadow where the trees were located.

**Potter County
lower branches are dead.**

What is wrong with this spruce? The

There was nothing on the small sample to indicate a problem. The tree may be losing the interior needles due to shading – it is normal for spruce to lose their lower interior needles due to low light levels. The other possibility is cytospora canker on these branches. Look for white resin blisters on the affected branches. If you see these it is probably canker and we have seen a lot of this due to the summer drought stressing trees.

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