

Pest Update (November 22-29, 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.

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Plant development for the growing season

All our trees and shrubs are prepared for their long winter nap now but that means dormant, not dead. The weather has been warm enough that the roots were still functioning a week or two ago. The soil temperatures at 4-inches under sod are now in the upper 30s°F so while water is still be absorbed by the trees the rate has slower. The dormant deciduous trees and shrubs are still losing

small quantities of water through their twigs and buds. Evergreens, of course, still maintain their foliage and there is some water loss during warm – above-freezing – days.

I get questions in the fall about watering these trees and this year it was (is) a good idea. Much of the state is dry and some areas have been dry throughout the entire growing season. Trees, such as Black Hills spruce, maintain a fairly high water content in their needles during the winter and going into winter in a dehydrated state is a stress. However, any watering should be done only when the air temperatures are above 40°F and apply the water in mid-day so it has a chance to soak in before the soil freezes at night. Once the temperatures consistently stay below freezing watering is no longer of value as water will not move up a frozen stem.

Timely Topics



Frost cankers and cracks on ornamental trees; wrap or don't wrap? I received a question this week on the benefit of wrapping trees to prevent winter injury, specifically splitting of trunks. This splitting is either due to a frost canker or a frost crack.

A frost canker, sometimes called sunscald injury, is a shallow split in the bark extending into the cambial zone and forms as a result of extreme temperature fluctuations. While these cankers are more common on the southwest side of the tree, hence the name “Southwest disease”, they can occur on any side of the trunk. The problem occurs when tissue that is beginning to DE acclimate – losing its cold hardiness – is exposed to cold temperatures during late winter nights. The tender bark and cambial tissue is killed. This is most common on thin-barked trees,

crabapples, lindens and maple, but is also stress-related. Moisture stress during the summer and fall is most often correlated to frost cankers occurring that winter.

Frost cracks are deep, longitudinal cracks that appear on the lower trunks of trees (as pictured above). While referred to as frost cracks, the origin of the crack is not related to frost or cold, but an injury to the trunk such as strikes by a grass-whip or lawn mower and this result in a structural weakness in the trunk. When the injured trunk is exposed to warm winter days followed by a rapid temperature change in the evening, the crack ruptures to the surface. Frost cracks almost always appear on the southwest side of the tree as this section of

the trunk is exposed to temperature changes of 20 to 30°F or more between the sunny winter day to a clear winter evening, that's when you hear the split sometimes which can sound like a rifle shot. Frost cracks are most common on the same species as frost cankers, but may also be found on thicker barked trees such as oaks and walnut.

Will wrapping trees during the winter help? It might, but keep in mind that moisture stress and wounding are the two key factors in the formation of cankers and cracks. Wrapping with paper or plastic wrap may not prevent temperature fluctuations; in fact it may actually cause a more rapid temperature change according to research done in neighboring Minnesota. In addition, if the wrap is left on into the next growing season it may trap moisture creating a favorable habitat for pests. Left on even longer it can girdle the tree. Wrap or don't wrap? Don't since the problems of leaving it on too long outweighs the small benefit of winter protection, but do make sure the trees are receiving adequate water during the growing season and do not wound the trunk – these are best means to reduce frost cankers and cracks.



However, if you want to do something – try a white tube around the lower trunk of the tree. The white reflects the heat and the air gap between the plastic and the trunk helps reduce the trunk from experiencing the temperature fluctuation. However, the same rules for a wrap apply for a tube. It's for winter only, remove the tube in spring. Some people wrap their trees in the winter to protect from critters so let's look at our biggest problem – deer.

I received calls every fall asking what trees and shrubs are “deer-proof.” There is no such plant, of course. If preferred food sources are not available, deer will sometimes eat almost anything, or at least nibble on it. I am willing to bet if you show this list to anyone in the Black Hills where their deer are so urbanized, they stop for traffic signal, that there are at least a few plants listed below that probably someone has had eaten out of their yard. With that said, here is the list of *rarely* eaten plants:

Alnus glutinosa – European alder
Berberis thunbergii – Japanese barberry
Betula nigra – river birch
Betula papyrifera – paper birch
Buxus micophylla – Korean boxwood
Caragana arborescens - Siberian peashrub
Catalpa speciosa – northern catalpa
Cercis canadensis – eastern redbud
Cornus sericea - redosier dogwood
Cotinus coggygria - smoketree
Forsythia ovata - forsythia
Ginkgo biloba - ginkgo

Gledistia triacanthos – honeylocust
Juniperus spp – junipers/ “cedars”
Ostrya virginiana – ironwood/hophornbeam
Philadelphus coronaries – mockorange
Picea spp – most spruce
Platanus occidentalis – sycamore
Potentilla fruticosa – potentilla
Robina pseudoacacia – black locust
Sambucus canadensis - elderberry
Spiraea prunifolia – Bridalwreath spirea
Syringa spp – all lilacs
Viburnum spp – all viburnums

Again, this is not a perfect list. In addition, some of these plants, such as sycamore and redbud, have limited hardiness. And if you want *more* deer damage, plant mountainash (*Sorbus* spp), yews (*Taxus* spp) and arborvitae (*Thuja occidentalis*) – deer love them!

What do to reduce browsing injury (and a homemade recipe at the end)

Fencing, high fencing, is the best but another approach is to treat valuable ornamental trees and shrubs with a repellent. **First, the amount of repellent needed is directly proportional to the deer’s preference of the plant being protected.** Plants that deer prefer are going to require more repellent than those that are not. Repellents work through a number of mechanisms, most commonly grouped as odor-based and taste-based. Generally speaking, odor-based repellents provide better protection than taste-based (and taste-based don’t work until they take a bite). The most common odor-based products have putrescent whole eggs as their active ingredient. Eggs are considered the most effective deterrent and egg-based products are often used as the standard for comparisons. Taste-based products, such as those containing peppers, are usually not as effective as repellents but as many people swear by them as at them and a multi-tactic approach to deer, including repellents, may be the most effective means of managing these mammals.

A reminder, even the egg-based products only work so long. You need to apply them every *month* for good control and good control still means you will see some damage. Nothing provides perfect control so expect to buy a lot of product to protect your trees this winter (and hope for some warm enough days each month to reapply the product!).

If you want to save a little money, a *possible* “home” remedy is to add 6 eggs into a gallon of water, stir, then add about 2 or 3 cups of milk, stir again and add two more gallons of water then a cup of white latex paint. Stir until all is blended and spray on to the plant. If you added the right amount of paint there should be a very faint white color on the bark of the tree being sprayed (it will wear off). This

may be effective for weeks, not months, so expect to have to reapply several times. Don't forget to clean out the sprayer after each use!

What about deer rubbing on my trees?



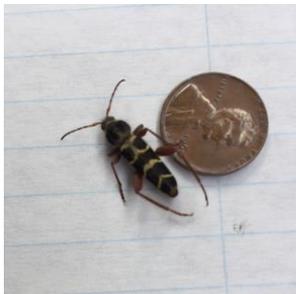
Deer rub trees to 1) remove the velvet from the antlers and 2) to mark the tree as a signal this is their territory. Most of the damage we see is not from deer removing velvet – that occurs over a relatively short time period in the fall - but from a few dominant bucks marking out their space. They begin rubbing sooner and continuing rubbing longer into the season. When they chose a tree, they rub more of it and will continue to come back to continue rubbing it during the season. These are the problem deer.

While almost any wooden vertical object will serve for rubbing material including power poles and fence posts, trees are the preferred material. There are also some trees preferred more than others. The favorite trees have smooth bark and no branches along the lower 4 feet of trunk. Trees for rubbing velvet are usually smaller (as in the picture above), about 1 to 2 inches in diameter, but for marking territory (picture to the right) trees up to about 6 inches or so will work. If you have a 5 or 6 inch crabapple with a scrape along the side that keeps getting bigger this fall – bambi's dad is nearby.



We don't have any sprays to discourage deer from rubbing a tree. The only means is a barrier to prevent them from either reaching the trunk or a wrap around the trunk to protect the bark.

E-samples



I received a picture of beetles that were emerging from a recently cut ash during the warm weather last week. The tree owner was concerned these were emerald ash borers but fortunately are nothing more than our native redheaded ash borer (*Neoclytus acuminatus*). The adults are generally out in the summer months, but I have seen them emerge from firewood stored in homes during the winter as well as from trees on warm fall or spring days.

This is one of our most commonly confused insects with emerald ash borer. The adults look quite different but the galleries (tunnels) made by the larvae just beneath the bark are similar, though not exact. The galleries made by the emerald ash borer larvae are serpentine, zigzags just beneath the bark, while the redheaded ash borer makes meandering galleries that may dip deeper into the wood.

The redheaded ash borer generally attacks only dying (and even recently dead) trees and is not a threat to healthy ash.

Samples received/site visits

Brookings County

Scotch pine with black shoots



The problem was pine tortoise scale (*Toumeyella numismaticum*). This is a small, reddish-brown scale insect that feeds on the pine shoots. The adults are sessile (they do not move) and feed by sucking the sap from the twigs. They, and their mobile offspring, known as

crawlers, can remove a tremendous amount of sap and they excrete some of this as honeydew, a sticky material that become infected with black sooty mold. The insect usually does not need to be treated by insecticides, its natural enemies generally provide a sufficient check. I usually see problems with this insect in trees that were treated for other pests or in yard when there has been sprays for mosquitos – these applications end up killing everything that eats the scale.



Faulk County

What are these black growths on our trees?

This is black knot (*Apiosporina morbosa*), a fungal disease of common chokecherry. The black, cylindrical galls are very noticeable at this time of year since the tree is otherwise bare. Infected branches may also become distorted and bend adding to the ugly appearance of infected trees. There is not much that can be done for the disease. Once a tree has it, it probably will always have the disease so pruning out the numerous knots will provide only temporary control.

To further add to the problem, the knots are the second-year of the galls, the first-year infection is visible as only a slight swelling and is easily missed while pruning out the knots. The following year these swellings become the new knots. The only time pruning may be of value is if you find a tree with only one or two galls on it and you also find all the twig swellings for the first-year infection – if you get all these, you might save the tree for a while. However, I usually recommend *basal* pruning, cutting the tree to the ground and planting something other than chokecherry in its place.

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