Pest Update (July 31, 2019)

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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

The cherries are beginning to ripen, and I have already picked some black cherry (*Prunus serotina*) fruit. The 1/3-inch fruit is turning from red to black – a signal for picking. The fruit has a bitter-sweet flavor and are probably most often eaten by adults who remember picking these on the farm as kids.

Timely Topics

A reminder that we are a common tree pest

This past week I had the opportunity to go out with a conservation district manager to do some "sick tree" calls. One of the first was for a dead hackberry. The death of an isolated tree can be due to numerous agents and not necessarily just one.

The tree died, somewhat quickly, and the only pests found on the tree were some witches'-brooms and borer galleries. A witches'-broom is a proliferation of short shoots on a branch and these are due to the activity of an eriophyid mite and a mildew fungus. The brooms look ugly but do not otherwise harm the tree. The borer galleries look like hackberry engraver beetles, an insect associated with dying or recently dead trees. When it was mentioned that two others had died, I wondered if this was that mysterious disease that occasionally kills a row of hackberry (there has been a phytoplasma identified in Europe causing hackberry yellows there).

The adjacent green ash tree looked fine, just a little dieback which is a common symptom for most ash in the state. However, I noticed a row of dead mature honeylocusts and that drew the question; "Have you been using any herbicides?" The response, yes, Grazon in the lawn area to kill weeds. But didn't spray near the trees.

Grazon is a pasture herbicide that is effective at killing many broadleaf weeds. It will also kill many trees if not applied carefully. Grazon contains picloram and 2,4-D. GrazonNext contains aminopyradlid rather than picloram. These chemicals, amiopyradilid and picloram, are easily carried into the soil and absorbed by tree roots.

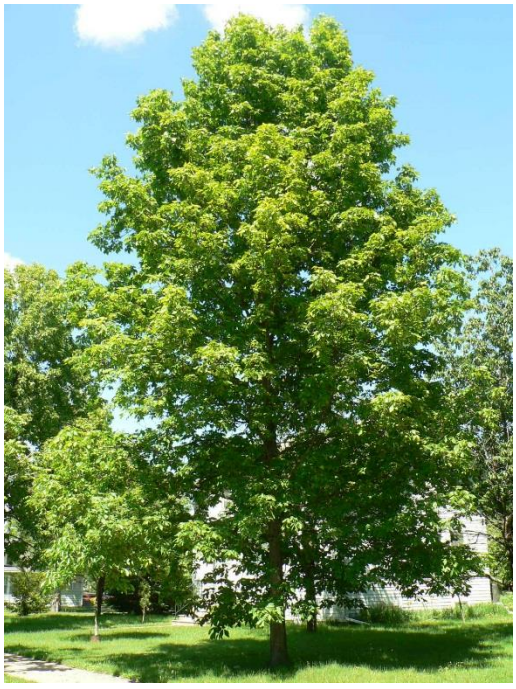
The labels for these products contain the phase "*do not use within the dripline* (defined as the outer edge of the canopy) *of desirable trees*". A few labels have this better phrase as "*do not use within rooting area of desirable trees*". The rooting area of a tree has little relationship to the spread of the canopy and is more closely related to the height. A good rule-of-thumb is the roots of a tree extend out a radial distance to at least equal its height. A 10-foot tree will have roots out at least 10 feet and a 50-foot tree has roots out at least 50 feet.

This is not an absolute and there are numerous exceptions, but it's a good guide. Do not apply herbicides such as Grazon and GrazonNext any closer to desirable trees than a distance equal their height and farther is even better.

The other notice on the label is not to use these products around legumes. Honeylocust is a legume. You can even find this tree listed on the label as a tree you can control with these products! Hackberry is also listed as a species that you should use caution with nearby applications but considering the number of dead hackberries I have seen near applications of herbicides containing these active ingredients I would advise to stay as far away as honeylocust – at least a distance equal to the tree's height.

Other trees to stay away from; other common legumes, black locust, coffeetree, and peashrub. Also, any conifer – Douglas fir, fir, juniper, larch, pine, and spruce. The least susceptible? You guessed it – ash.

What about hickory?



We are always looking for a new tree to consider and one that has possibilities in the southeastern quarter of the state (along or south of Highway 14 and along or east of Highway 281) is shagbark hickory (*Carya ovata*). This is native to the eastern United States and extends as far west as southeast Minnesota and most of Iowa.

We rarely see any winter injury in the state and this species should be tried farther north into northeast South Dakota. Its primary limiting factor in our state is its moisture requirements. It is best planting in areas with at least 22 inches of annual precipitation. It will tolerate a range of soil textures from clay to a sandy loam and soil pH up to 7.6. The tree has few pest problems in South Dakota.

Shagbark hickory has leaves that looks like ash though a little larger and usually 5 leaflets rather than 7. Another difference is hickories tend to grow with a single main leader rather than the multiple leaders that occur on unpruned ash. This means a better form and less ice, snow, and wind damage.

Shagbark hickory also produces a nut that is highly palatable for many birds and mammals (passenger pigeons use to be the primary means of dispersing the nut).

The slightly sweet nut is also a great food for people. The foliage is not usually browsed by livestock, but neither is it toxic.

So why is it not planted more in southeastern South Dakota? Two reasons, 1) most people have not heard of it and 2) those that have do not like the slow growth rate. The growth rate is slow. In Brookings, smaller saplings (those less than 5 feet tall) typically grow about 4 to 6 inches a year and smaller one, perhaps 9 inches to a foot a year. This means a 12-inch seedling to a 20-foot tree can be about 25 years.

But we must stop using growth rate as the sole criteria for what to plant. We need to have more diversity in our community forests and tree belts and shagbark hickory is just another example of a tree we should be considering

E-samples

Fall webworms (*Hyphantria cunea*) are beginning to appear in nests on the tips of tree branches. Yellow to brown, tufted, larvae about 1/3-inch long actively moving within the nest. The webworm differs from tent caterpillars in time of feeding (spring for tent caterpillars and late summer for webworms) and where they form their nests (interior, near branch unions, for tent caterpillars and exterior, out on the branches, for webworms).

The fall webworm favorite foods are cottonwoods, chokecherries and walnut, but almost any hardwood tree species will do. It is a myth that since they are feeding on leaves that will soon drop anyway that no damage is caused – the next month or so is a time of high productive for these leaves and the loss of them will leave the tree going into winter with fewer reserves. Treatment for the larvae is simple when they are small – less than ½-inch – either just tear the nests open and let the predators and parasites after them or treat with an insecticide containing spinosad, a naturally-occurring bacteria that acts as a stomach poison. Once they become larger, insecticides containing carbaryl or malathion must be used.

Oak lace bug (*Corythucha arcuata*) is causing leaf discoloration of bur oaks. I received pictures (also have seen this in the field last week) of oak leaves with stippling injury caused by this insect. I was also able to collect some insects. Lace bugs, both the nymphs and adults, feed by sucking sap from the foliage leaving small stipples in the

leaf surface. The lower surface of these discolored leaves will often be covered with small powered-like dust, the frass or excrement from the insects. At this time of year most of the damage is done and treatments are probably not warranted. Insecticides containing carbaryl or malathion may be used next year. These should be applied in late spring, about the middle of May, just after the oak leaves have opened. The lace bug eggs are hatching at that time and the nymphs are beginning to feed on the leaves. We can have two generations per year so sometime a second application is needed in mid-summer.

Tar spot (*Rhytisma*) is showing up even more across the state and this, along with chlorosis, is making for a lot of unsightly Freeman, red, and silver maple trees. The disease begins as greenish-yellow spot in late June and then develops into these black tar-like structures within a month. The remaining leaf tissue is usually chlorotic. The treatment for the disease is two-fold. First, if practical, remove and destroy the fallen leaves this autumn to reduce the overwintering fungus though this has limited value and usually mowing the lawn will speed up the decomposition process. Next year treat the tree with a copper fungicide at bud-break and repeat the application about two weeks later. Important note: follow label directions carefully as to when, how much and what to treat as copper can be phytotoxic

Samples received/site visits

Bon Homme County **What is wrong with this apple tree? The leaves starting to fall off about three weeks ago and there are scabby lesions on the leaves.**

This is apple scab. The symptoms are showing up across the state and some trees are almost completely defoliated by this disease by now. The disease can be treated with fungicides, but these must be applied beginning in the spring just as the buds expend. See the Meade County sample for more information on managing this disease.

Butte County **What is wrong with my ash trees?**

Just about everything – I found signs of clearwing ash borer, redheaded ash borer, and western ash bark beetle in almost all the ash. Some of the trees also had ash conks on them, an indicator of internal decay. I was also able to find a heavy infestation of oystershell scale on these trees (picture). Take all these problems and add in growing on

the dry, windswept prairies of South Dakota and its no wonder that the trees looked poor.

There are effective treatments for the two most serious problems, the clearwing ash borer (permethrin applied a week after Vanhouttee spireas begin to bloom usually early to mid-May, repeat in 3 weeks) and oystershell scale (apply horticultural oil when the crawlers begin to move, about the time lilac flowers begin to fade, about late May), but I doubt if these trees will recover to become healthy specimens.

Haakon County **Why are these elm leaves black and sticky?**

First this was a perfectly packaged sample. The label was clear, the box was solid, and the leaves were in a plastic bag without a damp paper towel added – thank you!

The problem was aphids (lots of them were still alive on the leaves) and they are producing honeydew – a sticky substance that is a by-product of sucking up lots of sap – and the honeydew became colonized by sooty mold – a fungus that lives on and from the honeydew. Quite the complex!

The best solution for treating a large elm is to hire a tree company to inject the tree next spring with an insecticide containing imidacloprid or dinotefuran. This will kill the aphids as they begin to feed next year and no aphids, no honeydew. The treatment might have to be repeated every 2 or 3 years.

You can buy imidacloprid to pour around the base of the tree but if it's more than a foot in diameter, the tree is too big for these homeowner methods to be effective.

Lake County **The honeylocust has discolored leaves. They came out this way last spring.**

The honeylocust injury is due to either (or both) the honeylocust plant bug or the honeylocust leaf hopper. The injury they do is similar, severe leaf distortion, dwarfed leaflets (particularly the ones at the tips of the leaf), chlorosis and brown spots. Sometimes trees can even be defoliated by both these two sucking insects though this is rare. Both insects overwinter as eggs on the twig and have only one generation per year, coming out early in the season as the leaves are expanding.

Any treatment now is ineffective, but a foliage treatment of an insecticide containing acephate or carbaryl next spring as the leaves expand will help reduce damage. A soil drench of an insecticide containing imidacloprid applied in mid-September will provide control of the insects next spring but honeylocust flowers are attractive to bees and this treatment will also kill pollinators.

McCook County **Why did the row of apricot die?**

This was an interior row of an established, but young, multiple row belt. The pines on one side were doing fine as well as the lilacs on the other side. Almost all the trees were fine except for the apricot.

The apricots were not a complete kill, some of the trees in the middle of the row were doing fine and all the apricots showed excellent shoot growth until last year.

The most likely problem? The drainage. If you looked at the surrounding area, the belt was in a low spot. It was not extremely low, and, in most years, the additional water-holding would be helpful for the trees. The problem was last year, and this year have been very wet and apricots, like all *Prunus* species (apricot, cherries, peaches, and plums) do not like "wet-feet". Wet, and clay soils, result in many root-rotting diseases. The low soil oxygen concentrations in these soils also causes *Prunus* roots to produce a cyanide compound that also hastens the death of the tree.

Meade County **What is problem with this crabapple? The leaves have yellow spots.**

The problem is apple scab. This is a common leaf disease of apples and crabapples and the symptoms are small olive-green circles that enlarge and darken, often as the remainder of the leave turns yellow. The most common treatment recommended at this time of year for the disease is to rake up and dispose of any fallen leaves (and that includes all the way through autumn) as they harbor the overwintering fungi.

This provides minimal control of the disease for next year and is not worth doing. Mowing your lawn will usually do the job as well as the mowing sheds the foliage into fine enough pieces that the leaves decompose before spring.

Treat with an application of a fungicide containing propriconazole, myclobutanil, chlorothalonil or captan every 7 to 14 days beginning as the leaf buds begin to

open and continuing until three weeks after the petals fall or dry weather prevails (about 5 applications in most years).

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