Pest Update (April 29, 2015)

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

Email: john.ball@sdstate.edu
Phone: office 605-688-4737, cell 605-695-2503
Samples sent to: John Ball
Plant Science Department
rm 230, 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. **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.

Plant development

Crabapples and apples are in bloom across most of the state now along with serviceberries. Some of the spring-flowering spireas (picture) are in bloom as well as many lilacs. It should certainly be a very attractive Mother's Day (if we just had a few days of rain). It is still very dry across most of the state but several days of rain are in the forecast.

Pest treatments needed soon

Ash-lilac borer treatments should be done soon with an insecticide containing permethrin as the active ingredient. The adult ash borers are usually out flying about a week or so after spirea begins to bloom. Since the vanhoutte spirea is blooming now, we should see the adults (which resemble wasps) in another week. The lower trunk needs to be covered with the insecticide, usually up to a height of 10 to 15 feet on a mature tree. This is our native ash-lilac borer, not the emerald ash borer, an insect not yet identified in South Dakota.

Apple scab second application should be on now to avoid discolored leaves and fruit and premature foliage drop later in the season. I usually begin receiving calls about apple scab in mid-July when it is far too late to do much about it. The young leaves are most susceptible within the first five days of unfolding so the most effective control is *early* control. Captan is the most common fungicide homeowners can use and can be applied on crabapples and apples. Fungicides containing either Chlorothalonil or Propriconazole can be used but the labels specifics *only* on ornamental crabapples, not trees in which the fruit will be harvested. The second application is about now as the leaves are nearing full expansion. This is followed by 2 or 3 more spaced 10 days to two weeks apart.

Cedar-apple rusts will begin releasing spores from eastern redcedars and Rocky Mountain junipers within the next week or two. The telial horns are now beginning to swell and when we receive some rains, the horns will become gelatinous, turn bright orange and begin releasing spores. While the disease is rarely considered a problem on junipers, the bright orange spots and premature defoliation that occurs on infected hawthorns and crabapples does detract from the ornamental value of the trees. Treatment should start on the hawthorn or crabapple host in another week with fungicides having Chlorothalonil or

Mancozeb as an active ingredient and a second application made about two weeks after that.

Spruce needleminer treatment. The larvae will begin moving to form their webbed nests and resume their feeding. They will feed on the needles and also gather them into clumps as a nest. A spray of high-pressure water will knock many of the larvae off the tree though be sure to rake up the fallen needles (and larvae) after the spray. The other approach is spray an insecticide containing Acephate as the active ingredient to kill the larvae as they begin moving out onto the newer foliage. Remember to spray inside the canopy, not just the exterior. Actually "power washing" the lower canopy of the spruce is a good way of cleaning off all the dead and dying needles as well as some insects and diseases. But be aware the tree will appear a little more open afterwards!

Tent caterpillars are beginning to hatch! Tent caterpillars, eastern, forest and western, are common defoliators of mountainash, cherry, crabapples and plums. If you look closely along the shoots in these trees right now you might see the beginnings of some very small nests. The caterpillars are not moving far from these nests yet so pruning and destroying these small nests will still work as a means of limiting defoliation of a plant. Another option is to tear the nests open as this will expose the young larvae to predators and parasites and these insects can significantly reduce the population (you can also use a toilet brush to push into the small nest, twist it a couple times and pull it out – you just made tent caterpillar cotton candy, not tasty but will get rid of the pest!). Insecticides containing Carbaryl or Malathion are effective, but should be applied in another week long before the larvae are fully grown. If you wait until the larvae are larger, more than 1 inch long, they will have completed most of their feeding by then and the benefit of the treatment will be limited.

Timely Topics

How to pollinate a single apple tree

"*I only have one apple tree, how can I have it fruit?*" This is a question that typically comes up in the spring as the trees begin to bloom. Apple tree owners, particularly those on farms or ranches, sometimes complain that they have a tree that blooms every year yet never sets fruit. Sometimes the complaint is that they have two apple trees that bloom but neither one sets fruit. The cultivar or cultivars are usually unknown.

Apple trees require cross-pollination to produce fruit, meaning two different apple trees are required for fruit set. The trees must be two different cultivars and both

in bloom at the same time for the bees to transfer the pollen between the two trees. A common problem is that two trees were planted but they are both the same cultivar or closely related ones, such as ‘Haralson’ and ‘Haralred’, which cannot serve as pollinators.

Apples are not wind-pollinated, as are oaks or pines, so depend on insects to transfer the pollen from the flowers on one tree to the flowers on another. Bees are the most common pollinators and without their efforts no apples would ever produce fruit. Bees generally will remain in a tree moving from flower to flower to gather nectar and the sticky pollen that attaches to their bodies so the transfer between two trees is often not accomplished by a single bee. Instead the bee carries the pollen back to the hive where it touches another bee that has pollen from another tree and the transfer is made. The bees return to “their” trees and the task of cross-pollination is completed. The bees are not intentionally transferring the pollen, it occurs due to their close proximity in the hive, but this points out the fragile links in our fruit production system.

If someone only has one tree or two trees of unknown heritage, there is a simple trick to have them fruit. This spring when the tree or trees are in bloom, cut about three or four branches from another apple or crabapple tree nearby that is also in bloom and place these cut branches in a pail of water beneath the tree or trees. If you go over to a neighbor to cut the branches it is unlikely they have the same cultivar of apple so will be able to serve as a pollinator. Cutting branches from a crabapple is even better since you know it cannot be the same. Crabapples and apples are both apples, the distinction being the size of the fruit. If it’s smaller than 2-inches, it’s called a crabapple but apples and crabapples can serve as pollinators to one another. However, bees are ‘picky’ and prefer to work the same color of flower so since apple blossoms are white be sure to use a white flower crabapple.

The cut branches should have flowers that are just opening and the branches should be about 3 feet long. Place them in a large bucket of water that is raised slightly and is just one the edge of the crown and replace the ‘bouquet’ about every 3 days until the tree is no longer in bloom. If the weather stays dry, a tree may remain in bloom for a week so two or three cuttings is all that is needed. Since the bucket of flowers is within the canopy of the tree, the transfer of pollen is performed by the bees as they are fly about the tree in their work of collecting nectar and pollen. While it may seem unlikely that only flowers

from a few branches could serve as a pollen source, generally only about 5 to 15 percent of the tree's flowers are pollinated in the normal fashion so the cut branch technique provides enough pollen to provide adequate fruit set.

Management of cedar-apple rust on cedars (junipers)

Generally the concern with cedar-apple rust is not with the cedar (junipers) but with the apples or crabapples. The orange gelatinized galls now appearing on the eastern redcedars and Rocky Mountain junipers are perennial so remain from year to year. It usually take about two years for the galls to develop before it produces the horns that release spores that infect the apple leaves. Later this summer, spores will be released from these infected leaves that are carried by the wind to land and infect junipers. The injury to the juniper from the disease is usually minimal, just a few scattered woody galls through the canopy. However, the galls can result in tip dieback on the branches and I have seen some trees in South Dakota covered with these galls and on these same trees there was significant dieback that may have been related to these galls. There are no fungicide treatments that will remove the woody galls that have already formed on the juniper. The only treatment is to prune them off. Spraying a fungicide to prevent new galls from forming is usually not recommended as the treatments are rarely effective due to the long time period in which spores are released from the apple leaves. If someone decides to treat their junipers, fungicides labelled for control of cedar-apple rust on junipers, must be used and these generally have Triadimefon as the active ingredient. Bayleton is probably one of the most common fungicides available that is labelled for this use. The sprays begin when the spores are being released by from the apples, about mid-June and continue on a two-week schedule until the end of September.

Spray treatment to protect pines from mountain pine beetle and pine engraver beetle should be done now (if you live in the Black Hills). Treatments to protect trees from the mountain pine beetle (*Dendroctonus ponderosae*) and pine engraver beetle (*Ips pini*) should be completed soon. Mountain pine beetle is a tree killer, once attack the tree usually dies. Pine engraver beetle typically only attacks weaken trees, but the continuing drought has left many pines in a weaken condition and vulnerable to attack.

High-value trees, those surrounding a home nestled in the Black Hills forest, can be protected from these bark

beetles by pesticide applications. *The only way a pine tree can be protected by a pesticide application is if the spray is applied before the beetles attack.* The window for spraying a pine to protect it from attack is now. The pine engraver beetles are already flying and while the mountain pine beetle will not be flying till July now is still a good time to treat, before you forget and it's too late. If the pesticide is applied at the proper rate, it will still be effective at killing the adult beetles from July to October, there is no advantage to waiting.

The trunks of the trees to be protected must be sprayed to from the ground to a point on the trunk where the diameter narrows to 5 inches or less or 50 feet whichever is lower for mountain pine beetle. Since pine engraver beetles can even attack smaller branches, sprays for this insect should cover all the branches to the top of the canopy. This requires a high-pressure sprayer, one with at least several hundred pounds per square inch (psi) of pressure. Most small sprayers either cannot reach that high or at that height will merely mist the bark rather than have the pressure necessary to soak the bark to runoff. The pesticides to use for treating the trunks are those containing Bifenthrin, Carbaryl or Permethrin as the active ingredient and use only formulations specifically for listed for controlling bark beetles. All three active ingredients are effective at protecting pines if applied at the maximum labelled rate. Pesticides containing Bifenthrin that are labeled for mountain pine beetle control can only be applied by commercial applicators. Only Carbaryl may be used on forest trees.

E-samples

Browning evergreens

I received these pictures of some very brown evergreen. Discolored evergreen are a common sight this spring due to the dry fall, winter and spring. This has resulted in a tremendous amount of desiccation injury to the foliage and buds. If only the foliage is affected the evergreens will put out new growth in the spring and the older, brown foliage is slightly masked by the green new growth. This extended dry period has resulted in the death of the buds and many of the plants will not recover or have extensive dieback.

This picture is of a yew (*Taxus*) planting in Spearfish. Not only is all the foliage brown but the buds are dead and the shoots have already died. This can be checked by scrapping the bark off the shoot and examining the wood beneath. If the wood is white and moist, it's still alive. If it's brown and dry, the wood is already dead. The same is true of the buds. If they are dry and brittle, rather than moist and flexible, then they are dead. Yews

are very prone to winter desiccation injury hence the common recommendation to plant yews in areas that will receive winter shade, such as the north side of the house.

The other picture is a dwarf Alberta spruce (*Picea glauca* 'Conica'), a compact form of white spruce that usually matures to a height of only 6 feet or so. This plant is also prone to winter desiccation injury, but unlike yews, does not adapt well growing in a shaded location. The best way to reduce winter injury on this ornamental is to make sure it receives adequate water in the fall and wrap the plant in burlap for the winter to protect it from the winds. Obviously wrapping during the winter detracts from the appearance but so does dead needles in the summer.

The bed borer

I also received a phone call and picture of a beetle that was emerging from bed posts. The bed was bought on Craigslist from an individual who manufactures bed frames and posts from pine. The beetle is a longhorned beetle, named for the long antenna. This is a common borer found in dead or dying trees as well as fresh logs. The larvae of this insect can survive for several years in finished wood only to complete its life cycle and emerge from the wood as an adult. The adults do not attacked finished wood products so will not re-infest the bed posts or other finished furniture in the house. They will be an annoyance as they continue to emerge and fly about the home this spring and summer. The holes coming from the posts may also detract from the appearance.

Samples received/site visits

Brookings County **What is causing all these tunnels in our ash tree?**

This is the work of the ash-lilac borer. The larvae make large tunnels that wind through the trunk of the tree. The insects are now pupae and are just beneath the bark. They will be emerging soon. See the treatment recommendations at the beginning of this *Update*.

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