

Pest Update (July 1, 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.

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Plant development

The catalpas are finally in bloom in Brookings along with the Ural false-spireas. This is the typical time of year for these plants to bloom, though they have bloomed as early as mid-June and as late as mid-July in past years.

Pest treatments to be done soon

Apple maggot (*Rhagoletis pomonella*) is the most serious apple pest and treatments begin soon.



Symptoms of a maggot infestation are dimpled, lumpy appearance to the surface of the apple and the flesh often turning mushy and containing the brown trails of the larvae – hence the other common name “railroad worm.” A sure sign of the pest – an unpleasant one if you happen to find one, or *half* of one, while eating the apple – is a small (1/4”), creamy white and legless larva in the fruit. The adults, resembling houseflies with banded wings,

should be flying and placing eggs on the developing apples in another week or two and will continue egg-laying for another month. Once the eggs hatch the larvae burrow into the apple. The apple maggot pupates in the soil and emerges as an adult beginning in early July. However emergence and egg laying do not really begin until the middle of July so there is still time plenty of time to begin treatments (even if any eggs are laid now, the egg is either crushed by the expanding fruit or the larvae cannot survive in the high-acid of the newly developing apple). Treatment is either carbaryl (Sevin) or Malathion applied starting in another week or two with subsequent applications every 7 to 10 days for three or four applications. Apple maggots tend to emerge from the soil after a 1/2-inch rains so some growers time applications with rainfall but this is not necessary for the home-production.



Another means of management is to place 3-inch diameter bright red balls in the tree, about 2 in semi dwarf trees (about 10-15 feet tall) and 5 in standard size trees (about 20-30 feet tall) that are covered with a sticky material called tanglefoot. The female apple maggot always flies to the biggest, brightest apple to lay her eggs and these will be the biggest, brightest “apples” in the tree. You

cannot eliminate the pest by using this control but the population can be significantly reduced. The “apples” can be made from material found in almost any garden store – even can find tanglefoot at most hardware stores or you can buy the completed “apples” from the Internet, try www.GardensAlive.com.

Still another possible control measure is to spray Kaolin clay on the fruit. The clay is not a true pesticide but it irritates the adult apple maggot and they tend to fly to other fruit. The clay must be reapplied if we have some heavy rains so expect to make several applications during a season. It often takes at least three applications to work. The clay is sold as ‘Surround At Home^R’ and can also be obtained from www.GardensAlive.com.

Timely topics

Why are the lower branches dying on my blue spruce?



The most common call I receive is about declining spruce. The conversation always begins with the caller saying the trees are about 20 feet tall or so and have looked fine until this past year or two but now the lower branches are dying. Upon inspection I will find these branches have much of the older foliage already shed and what remains is discolored either a brown or purple. There is very little new growth at the tips of these branches. Peering inside the canopy, I can find elongated or oval blotches of bluish white resin. If the resin is chipped away, the area beneath is sometimes sunken with the edges slightly flared.

These are the classic symptoms of cytospora canker and I looked at several trees this past week that were almost devoid of foliage in the lower third of the canopy. The disease is quite common on Colorado blue spruce and I have seen the disease on this spruce everywhere I have worked during the past 40 years from Massachusetts to South Dakota. Apparently this spruce is not happy when planted east of its native range.



While these symptoms are most often used to identify the disease, the presence of the pathogen can be confirmed by finding the associated fruiting bodies that sometimes appear around the edge of the cankers. During wet weather, as much of the state is currently experiencing, tiny yellow tendrils containing the spores, can be observed protruding from these black fruiting bodies.

The symptoms of the disease seem to appear when the trees are just getting to the size they are beginning to provide the desired screening or windbreak. Unfortunately, the loss of the lower branches negates this screening or break since now you are able to look through the trees. Even dead branches provide some screen and once these are removed often the tree is completely open, except for the trunk, along the lower five or six feet.

Once the symptoms appear, the tree owner is usually looking around the culprit, the tree that spread the disease to their trees. However, you will not usually find a “Typhoid Mary”, the tree that was the source of the infection. The pathogen can remain on the bark for years before exploiting a wound, one created by hail for example, and infect the tree. The pathogen is also opportunistic and requires a stressed host. The stresses imposed on a Colorado blue spruce are numerous, but hail, drought, flooding and old age (20 years plus) are often associated with the decline. The disease rarely kills the tree but it becomes so ugly that a chainsaw usually becomes the agent of death.

There are no effective fungicide treatments for this disease. The most common options revolve around maintaining the tree’s health by watering during periods of drought and managing soil fertility. Pruning off cankered branches during dry weather is also a common practice. Proper spacing can also forestall the development of the disease and windbreaks with 12 foot spacing seem to have the disease appear sooner than those at 20 foot spacing.

One intriguing new option may be an application of paclobutrazol as a soil drench around the base of the tree. Paclobutrazol is a plant growth regulator that increases fine root growth on the tree thereby improving tree health, but it is also fungitoxic. A recent study conducted by Gary Watson and Karel Jacobs over in Illinois showed that paclobutrazol applied as a drench suppressed canker development for several years in blue spruce. The study was done on young trees that were inoculated with the disease, not mature trees, but the results were encouraging and may have application to larger trees. Paclobutrazol used for this purpose is sold as Cambistat. It is available to commercial applicators through Rainbow Treecare Scientific Advancements in Minnesota.

Tree damage with the recent storm



The straight line winds that roared through Garretson and Pierre as well as many other communities left a path of uprooted and snapped trees. Spruces appear to have taken most of the damage with numerous mature trees uprooted. There are also many deciduous trees with broken branches or have trunks that are split. If the tree is deeply split, the best option is to remove the tree.

Attempting to restore the tree by tying together the split will generally just delay the death a few years as the tree becomes strangled by the ties.

If the mature tree has the top 1/3 of the canopy broken out or more than 1/2 of the limbs broken, it may be better to remove the tree rather save it. This also applies to trees with large wounds from broken limbs peeling off the trunk. These damaged trees may survive the loss but their ornamental and shade value will be much reduced. The tree will also be more susceptible to decay and may have a much reduced life span as more branches and limbs break due to decay.

Hail damage on evergreens



We also experienced a lot of hail damage over the past week. Cindy from Webster sent in this picture of a spruce with much of the new growth knocked off from the storm. This can be fatal to spruce if enough of the tips are removed. Conifers such as pines and spruce do not readily produce adventitious shoots so once the terminal is killed, the branch will die after the older needles begin to shed. Fortunately, it appears that only the outer most branch terminals were removed so the tree will continue to branch out from the side shoots. This may result in some lopsided growth for a few years but the plant will survive. The biggest problem may be that the hail provides an

entrance for cytospora canker. See the article in this issue for more information on this canker disease.

E-samples



Ash rust (*Puccinia sporganioides*) is appearing on many ash trees across the state. The petioles of infected leaves are becoming distorted with these bright yellow to orange pustules. These fruiting bodies are now producing yellowish spores that will spread to infect the alternate hosts, marsh and cord grasses. The disease overwinters on these grasses and spores are produced in the spring and spread back to the ash as they begin to break bud. The disease can result in some mid-summer defoliation of ash but rarely harms the trees. The disease cannot be treated at this time as the foliage is already infected. The treatments must be applied in

the spring to prevent infection. However, since the disease occurs sporadically treatments are not recommended as a general practice. However if a tree has been heavily infected for a couple of years, several applications of a fungicide

containing myclobutanil, applied as the ash buds begin to open and then repeated twice at 10 day intervals will provide some control.



'Dog Vomit' fungus (*Fuligo septica*) is beginning to show up in mulch beds throughout the state. Despite the name, it is not a fungus but a slime mold. However the 'vomit' part of the name is very descriptive and it does often look like Fido coughed up his dinner all over the mulch bed. The mold shows up every year, usually in June, when the temperatures and humidity are high. The mold forms in fresh mulch so most of the calls come in on mulches that have been placed this last spring or fall. The only control is to break up the mass with a rake to dry it out – it rarely reappears unless you add fresh mulch. Do not spray water to break it up, this just allows the swimming spores to disperse easier. The best management is to probably just leave it alone. It will dry out and degrade on its own.



Elm sawfly (*Cimbex americana*) adults are flying at this time. Aaron from Aberdeen sent in this picture of an adult wasp-like insect on a pepper plant and the species was identified by Jonathan in the insect lab. The adult females "saw" a slit in the leaves to lay eggs and these eggs usually start hatching in early July. The larvae can become almost two inches long by maturity and they are light green or yellow-green with a single middorsal black stripe. They feed along the margins of elm and willow leaves, usually in groups, and I have seen some young trees almost completely defoliated by August. Once the larvae are finished feeding they drop to the ground to pupae with the adults emerging the following spring. The insect does not appear in large numbers every year, nor is it widespread. It is more common to find elm sawflies on a few trees scattered across the state. The treatment is an application of an insecticide containing carbaryl when the larvae are first noticed on the tree.



Plum pockets are disease of plums and other stone fruits caused by the fungus *Taphrina communis*. All species of plums are susceptible, as well as chokecherry, and the disease is very common in our area. The symptoms begin as white blisters on the small developing fruit. As the blisters enlarge, the fruit becomes distorted and spongy. Eventually the fruit darkens to

become grayish and hollow. There is nothing that can be done about the disease now and little even during the control season as timing is critical. The control is a single spray of a copper sulfate fungicide applied just before bud-swell (note: do not apply a sulfate fungicide after the leaves form as it will damage them). A second application to the tree after leaf fall in autumn may also be beneficial in reducing the occurrence of the disease the following summer.



I received a number of samples of the disease each summer on plums but also chokecherries. The infected chokecherry fruit is usually shaped normally or a little elongated. However, the fruit is a little spongy as it is completely hollowed out, symptoms that might not be noticed until the fruit is picked. The **chokecherry midge** (*Contarinia virginianae*) will cause similar damage to the fruit. Infested fruit also becomes elongated and hollow but at this time of year the tiny yellow-orange maggots are still inside the fruit.

Samples received/site visits

Lawrence County

What is attacking the base of my pine tree?



The site visit was to a new development near Spearfish. There is a lot of concern about mountain pine beetle in this area as the Northern Hills has seen significant tree mortality due to this insect. But this was not the problem. This is the red turpentine beetle, the “big brother” to the mountain pine beetle. The red turpentine beetle also flies from spring until early summer so it is out earlier than the

mountain pine beetle. Turpentine beetles are not considered as serious a threat to the pine tree as the mountain pine beetle. They generally make fewer attacks on the tree and these attacks occur on the lower trunk, usually lower than 8 feet. Red turpentine beetles are a good indicator that a tree is stressed. They tend to go for construction-damaged trees such as this one.



Moody County

Why are the tips of these spruce turning yellow?



The spruces were all showing these very similar symptoms with the tips turned yellow-brown and curling. This was due to a recent application of a herbicide containing dicamba to kill the broadleaf weeds in the turf. The label says that this herbicide is readily absorbed by the roots (and shoots) and that trees are particularly sensitive during shoot expansion. However, most people assume the roots of a tree only go

out to the end of the canopy so farther out is safe. Tree roots extend out a distance equal to the height of the tree so a 10-foot tall spruce can have roots out from the trunk at least 10 feet.

Moody County

Why are my pine trees losing these lower branches?

These were not pines. Pines have needles in clusters of 2, 3 or 5s depending on the species. These trees were Colorado blue spruce and they were infected with cytospora canker. See the article on the disease in this issue for more information.

Union County
Why did the tips on my creeping juniper turn yellow this spring?

Why did the tips on my creeping juniper turn yellow this spring?

This was due to voles feeding on the shoots. This was a very common problem throughout South Dakota this spring and has been covered in recent *Updates*.

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