



Tree Pest Alert



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Samples

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Note: samples containing living tissue may only be accepted from South Dakota. Please do not send samples of plants or insects from other states. If you live outside of South Dakota and have a question, please send a digital picture of the pest or problem.

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 as the label is the final authority for a product's use on a 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.

Reviewed by Master Gardeners: Carrie Moore and Dawnee Lebeau

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Plant development for the growing season

We are in the wacky weather season for South Dakota. Continental climates have wide season fluctuations as they lack large bodies of water to help moderate the extremes. Some communities experienced temperatures in the 80s and 90s°F this week. The growing degree days (GDD-base 50) went from the single digits to near 100 within the last week.

It looks like we will be in a cool down this next week so the GDD will stall. Here is the current GDD for the following communities:

Aberdeen	4
Beresford	92
Chamberlain	88
Rapid City	90
Sioux Falls	79

The forsythias are in full bloom in the southeastern part of the state but most of the state is still not seeing much plant development.

Treatments to Begin Soon

Apple scab

Apples and crabapples buds are beginning to swell in parts of the state, so the treatment time is very soon. The first application of fungicide should be applied as the buds begin to open.

The most common fungicides used for preventative treatments of apple scab have Captan or Myclobutanil listed as the active ingredient. If the apple scab treatment is for an ornamental crabapple – one in which the fruit will not be harvested – Cchlorothalonil, may also be used.

Applications of the fungicide are made about 7 to 10 days apart from the green tip stage until after petal fall. The weather usually turns a little drier by then and a 10-to-14-day interval can be used until the end of June when applications stop.

Spruce needleminer

The larvae will soon begin moving from their webbed nest to resume their feeding of the needles. A spray of high-pressure water right now may knock them off the tree though be sure to rake up the fallen needles and larvae after the water spray. The other approach is pesticide treatments to kill the larvae as they begin

moving out onto the foliage. The most common insecticides for this purpose contain Carbaryl or Permethrin as the active ingredient and are labelled for control of this insect.

Remember to spray inside the canopy, not just the exterior. Actually “power washing” the lower canopy of the spruce is an effective way of cleaning off all the dead and dying needles as well as some insects. However, be aware the tree will appear a little more open afterwards!

Zimmerman pine moth

The larvae begin moving from the winter webbing around 100 GDD so activity will be started soon in the southern half of the state. Now is the time to begin treatments in these areas. The most common treatment is an application of an insecticide containing permethrin and labelled for control of this insect. The application must penetrate to the trunk, not just fog the needles. This will kill the overwinter larvae before they burrow into the tree.

Timely Topics

Emerald ash borer update

We are beginning to monitor emerald ash borer development as they wake up this spring. While most larvae are still in the J-shaped stage (which they entered last fall), some are beginning to transform to the prepupa stage.



During the prepupa stage, the insects are no longer curled into a J-shaped within their chambers but straightened out and shrunk. These will develop into pupae during May. The pupae that form in these chambers have a white, cylindrical shape form that gradually takes the appearance and form of an adult.

This process will take several weeks. Once the insect transforms into an adult, it may remain just beneath the bark for a few days to a week or more before chewing a D-shaped hole through the bark and emerging.

Based on the current development of the insects and the long-range weather forecast, emergence is still expected to begin early June in Lincoln/Minnehaha Counties and late May in Union County.

Apple tree pollination

Spring means planting and fruit trees are becoming a popular choice. The objective of planting fruit trees is to harvest fruit at some point, and that means pollination is required.

Apple trees are an excellent choice for a home orchard. There are cultivars adapted to every region in the state. Most people know that they must have two apple trees for fruit. But some are confused as to why. I have had people email me wanting to know where they can buy a “boy” apple tree for the “girl” they just bought.



Apple trees do not work that way. Every apple tree has stamens (the boy) and pistils (the girl) in each flower. They just have a mechanism to prevent fertilizing themselves. This means a ‘Sweet Sixteen’ apple will not produce fruit if it is only apple tree in the yard (and there are no nearby apple trees). This also means if you have two ‘Sweet Sixteen’ apple trees you still do not have fruit. Apple cultivars are clones. All the trees within a cultivar are genetically identical.

Apple trees require pollen transfer between two different cultivars; a ‘Sweet Sixteen’ and a ‘Zestar!’ for example. Since there is no botanical difference between an apple and a crabapple (just the size of the fruit), an apple and crabapple can pollinate one another, and no, having a crabapple for a pollinator will not make the apple taste “crabby.”

There are a few considerations to keep in mind when choosing apple cultivars for pollination. First, it is best to have the two cultivars flowering at the same time. There is quite an overlap in bloom periods for cultivars but to be sure it is best to plant early-season cultivars with one other or mix with mid-season but not early and late fruiting cultivars. The bloom periods might not match. For example, ‘Haralson’, a late-season apple, is not an acceptable pollinator choice for ‘Zestar!’, an early season apple.

‘Honeycrisp’ sometimes has poor fruit set depending on the pollinator. The problem may be the length of the pollen tubes created by the pollinator. Some apple cultivars do serve as good pollinators for ‘Honeycrisp’, such as ‘McIntosh’, while many crabapples will not.

Finally, some apple cultivars are too closely related and will not pollinate one another. 'Haralson' and 'Haralred' are too close as well as 'Fireside' and 'Connell Red'. The same is true with 'Frostbite' and 'Sweet sixteen'. They are too closely related to adequately pollinate each other.

We also have a few trees such as the 'Dolgo' crabapple, a great cider apple from South Dakota, that sometimes is self-fruitful. It is also a good pollinator for many apple cultivars. 'Cortland' is an apple that sometimes is self-fertile and may produce fruit without a pollinator.

Some conservation districts are offering the following apples for sale this spring. I have included the season when the fruit ripens for each cultivar. The best pollination is either having the two cultivars within the same ripening season (early, mid, late) though mid-season will be acceptable for either an early or a late season apple.

- Cortland – Early/mid-season¹
- Fireside – Late season²
- Frostbite – Late season¹
- Haralson – Late season¹
- Honeycrisp – Mid/late-season²
- McIntosh – Early/mid-season³
- Regent – Late season³
- State Fair – Early season¹
- Sweet Sixteen – Mid-season¹
- Zestar! – Early season²

¹ adapted to the entire state.

² adapted to southern two-third of state.

³ best adapted to the southeastern part of the state.

E-samples

More bunny browsing



This is an Amur maple (*Acer tataricum* ssp *ginnala*) that was browsed by rabbits and suffered branch breakage by the recent ice storms. Since its function in the windbreak is as a tall shrub/small tree, the value is as a wide spreading plant. The best means of managing these trees is to cut any damaged stems to a height of two to three inches. These will sprout this spring and a new stem will develop.

The second picture is arborvitae where the bunnies have browsed the lower branches. Rabbits seem to look at arborvitae as their 'spring greens' and will nibble on the lower branches in March when there is not much other greenery. If the rabbits have removed all the small green fan-shaped foliage from a branch, that branch will not survive. Arborvitae cannot resprout branches or foliage so heavily browsed branches will usually die.



Giant water bug

This image looks like the giant water bug (*Lethocerus americanus*). These are common aquatic insects in South Dakota and the surrounding states. They are known as the 'toe biter' for the painful bite/sting the insect can inflict if disturbed.



Fortunately, they know the difference between people (even their toes) and their usual prey – small fish and other aquatic critters. Giant water bugs hunt their prey by waiting in stream debris and mud and grabbing the unsuspecting fish, tadpole, or insect that swims within its reach.

As giant water bugs hold the prey in their long front legs, they stab it with their beak and inject toxins that paralyze the prey and begin to dissolve it. Once the meal is sufficiently tenderized, they suck it up.

The giant water bug overwinters as a large nymph or adult. You can find the adults out during the summer. They live in the water, but the adults fly at night and are attracted to lights. Sometimes you can find a few on the ground near porch lights in the morning.

I do not know the date of the picture so it might be from last summer. It might be an old dead one that just appeared as the snow melted.

Samples received/Site visits

Clay County, Gum from cherry stem

This is called gummosis, a general term for gum exuding through the bark. It is produced in response to a wide range of conditions, wounding, canker diseases, and even in response to drought (occasionally insects such as the peach tree borer are associated with the pitch). Since gummosis may be due to many different agents, there is no single recommendation for its control. Usually pruning out infected branches is the best course of action, but only if the branch is dying. Sometimes the pitch appears but no other damage occurs.



Union County, Small bumps on an arborvitae

The small bumps on the tips are the male pollen cones. These woody cones are less than 1/8-inch long and appear at the ends of the fanlike foliage sprays. They produce only a few thick scales. The male cones appear early in the season and are sometimes mistaken for galls. The male cones will release a fine, yellow pollen later this spring.

The female seed cones, which are also in the picture, appear later in the summer. They are about 3/8-inch long and contain six to eight seeds. The female cones will persist and are commonly found on the trees the following spring and even into summer.



Union County, Banded ash borer in old ash trees

We were surveying ash trees for emerald ash borer in a riparian forest at the southeastern tip of the county. You are looking north and even a little west into Iowa from this spot. While we were able to find some prepupae of the emerald ash borers still in their overwinter chamber, they are not the only borers, nor the most numerous.

The banded ash borer (*Neoclytus caprea*) is a native wood borer. It is one of the roundhead borers, so the body is round. Emerald ash borer is a flatheaded borer and the body (and head) is flat. They are close relatives, so the larvae are sometimes confused. The easiest separation is the body of the banded ash borer larva looks like the tubby and segmented Michelin man.



The female banded ash borer attacks stressed trees – ones that are dying. These trees may be dying from attacks by the emerald ash borer, or the emerald ash borer may be just attracted to the dying trees. Either way it is common to find the two insects in the same tree.

Banded ash borer is one of the first insects to emerge as adults in the spring, but you can still find some larvae in the wood as well as pupae. Fortunately, we found only a few emerald ash borers. This is an indicator that the infestation in the Dakota Dunes area is recent – only a few years old – and not yet widespread. Still homeowners in Union County that have valuable ash trees should begin treatments for the emerald ash borer this spring.