



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 accumulated about 150 growing degree days (GDD-base 50) across the state during the past week. It has been warm, but the typical heat of a late South Dakota summer. Here are the current GDDs for communities across the state.

Aberdeen	1,928
Beresford	2,250
Chamberlain	2,220
Rapid City	1,730
Sioux Falls	2,245

The area of the state under some level of drought intensity is still shrinking. Much of the state received welcome rains last weekend. This rain helped move the needle in the normal for most of the state.

The southeastern region of the state as well as the counties along the Minnesota border, including Marshall and Day, are still classified as either abnormally dry, moderate drought, or severe drought. Minnehaha and Roberts counties are the ones under severe drought intensity.

Treatments to Begin Now

Water!

Begin watering your trees, especially small conifers, during the next two months. If we do not receive an inch of rain during a week, watering is needed. Watering now helps the trees prepare for winter and reduces winter burn.

Timely Topics

Emerald ash borer update



We start seeing more 3rd instar larvae once we pass 2,000 GDD. The development occurs quicker on the south side of the trunks and branches. The summer heat penetrates deeper and sooner with the sunny exposure.

The 3rd instar will feed for about another three or four weeks before becoming the 4th and final instar. The 4th instar will feed for a couple of weeks before burrowing into the sapwood to pass the winter.

Pine looper update

The pine loopers are now the large 4th and 5th instar caterpillars. These caterpillars are hard to see as their stout dark brown to near black bodies are covered with tubercles which makes them appear as pine twigs.



What cannot be missed is the number of needles they have devoured during the past few weeks. Many of the trees defoliated last year by the looper have been defoliated again. Two years of defoliation is a severe stress to pines.

This is often fatal, but the trees have also received abundant rains this year and this has reduced stress. We are still not seeing the insects that typically attack stressed pines, the pine engraver beetles and sawyer beetles. This is a good sign. Hopefully, many trees will survive the defoliation, but I still expect to see significant mortality.

The insect is also appearing in some of the pines surrounding the area that was defoliated last year. This first year defoliation should not be fatal. These trees should not see a second year of defoliation as outbreaks only last a year or two. This is the second year of the outbreak so let us hope the insect does what it has in the past – fade to small population that nibbles on a few trees here and there.

Boxelder, an underappreciated windbreak tree

Boxelder (*Acer negundo*) is an underappreciated tree. It has many qualities we desire in a windbreak tree. It is a fast-growing tree that tolerates a wide range of soils – wet to dry – and those that are slightly alkaline.

This is a bare-root boxelder planted this spring in Walworth County by the conservation district. The trees in this belt had excellent survival and growth for the season. Boxelder is not a perfect tree, but it is a tree that should be considered more often for windbreaks.



E-samples

Aphids on a red-osier dogwood

Last week on Garden Hour, the SDSU Extension online seminar show (Tuesday nights from 7-8 pm CDT, hour earlier MDT), a viewer mentioned small black dots on a dogwood. We asked for a picture and received this one.



The picture shows a colony of aphids. These are small, soft-bodied insects that are infesting many trees and shrubs this year. They live by sucking the sap from their host plant. High populations of aphids can cause wilting, curling, and yellowing of foliage.

No need for control of these insects. The season is finishing, and the appearance of small aphid mummies means that a parasitic wasp is beginning to reduce the herd!

Hawthorn mealybug

The small, fuzzy, white insects on the twig of this hawthorn (*Crataegus*) are hawthorn mealybugs (*Phenacoccus dearnessi*). These insects are about 1/8-inch long, round and covered with a white, waxy layer.



They feed on the twigs and small branches of hawthorns but can sometimes be found on serviceberries (*Amelanchier*) and mountainash (*Sorbus*). They also feed on the foliage during midsummer. Mealybugs are sucking insects. As they feed from twigs and leaves, they excrete a sticky fluid called honeydew.

Infestations are rarely dense enough to warrant treatment. If treatments are necessary, Malathion or Insecticidal soap can be applied in the spring, but it is difficult for these insecticides to penetrate the waxy covering. Insecticides containing imidacloprid as the active ingredient can be used as a soil drench in the spring, just after leafing out. However, this insecticide is carried to the flowers and will also kill pollinators.

Tamarisk identification

The picture came from a homeowner in Tripp County that wondered what this was. This is a shrub frequently sent in for identification. It is not a sickly cedar but a salt-cedar, also known as tamarisk (*Tamarix* spp). The small scale-like leaves confuse it with junipers (cedars).

Salt-cedars are native to central Asia. They are tough plants. Unfortunately, they are too tough and displace riparian vegetation in western state. It can be found growing along the White River as well as other West River riparian areas. The plant was declared a noxious weed by South Dakota in 2006. It can no longer be planted in the state.



Samples received/Site visits

Codington County, Powdery mildew on lilac

This was a call about a faint white appearance to the lilac leaves. This is powdery mildew. This disease often appears during hot, humid summers. If the lilac grows in a shaded area with poor air circulation, the appearance of the disease is a certainty, especially if we are experiencing a humid summer.



The disease is characterized by a powdery, almost cloudy, appearance to the leaf surface. Sometimes you can find small black dots in this powder. These are the cleistothecium, fruiting structures, of the fungi. The mildew colonies continue to enlarge through the summer and by early autumn most of the leaves on the plant may be covered with a white powdery material. While the leaf surface appears powdery, the foliage itself may turn yellow.

There are many different species of powdery mildew fungi, almost 100 by some count. These fungi are very

specialized and usually a powdery mildew species is limited to a specific plant genus. This means the powdery mildew that appears on the lilac is not the same one that is on a nearby ninebark.

The simplest management of powdery mildew is to alter the growing environment making it less favorable for the development of the disease. This requires pruning to thin out shrub beds to decrease night humidity and improve air flow. Fungicides may be used to manage the disease but are best applied before the problem appears.

Hutchinson County, Herbicide injury on a young windbreak

This was a visit to see a young windbreak with a strip of trees that either were dead or presented with stunted, deformed, and discolored leaves. These are common symptoms of dicamba exposure (as well as for other growth-regulator herbicides).



Tissue analysis revealed detectable concentrations of only 2,4-D and dicamba. Woody plants have symptoms appear at about 18 ppb of 2,4-D. The samples of these trees showed about 43 ppb. Symptoms of dicamba exposure appear at about 30 ppb. We found 22 ppb in the tissue of the stunted trees.

Herbicides such as dicamba metabolize quickly so the concentration found in tissue a month or more after the application will be much lower. There was probably three times the amount of dicamba in the tissue shortly after the exposure. There were no other signs or symptoms on these trees that pointed to another possible causal agent. The appearance of the symptoms was herbicide exposure.

Jackson County, Suspected emerald ash borer, NOT

This was a stop to look at a declining green ash. The decline was thought to be like that presented by ash infested by emerald ash borer. While Kadoka is a long way from our confirmed infestations, it is along a highway. Infestations seen to follow transportation corridors such as highways. It may be due to the movement of firewood as campers travel out from infested areas. It might be a few "hitchhikers" that hid beneath a boat cover and flew out during a fuel spot.

Fortunately, emerald ash borer was not the reason for the decline of this tree or its neighbors. The trees were presenting with dieback, not decline, and the foliage near the base of the dead shoots was stunted and strap-like. These are common symptoms for exposure to growth-regulator herbicides such as picloram. Since the trees are growing in a rock mulch bed, herbicide is the reason for the symptoms.



Minnehaha County, Alcohol flux oozing from a maple

The call was about some frothy, clear to white liquid oozing out of the base of a silver maple and puddling on the soil. This is alcohol flux. It is a bacterial infection in the heartwood and older sapwood that ferments, and the liquid is forced out of cracks by the pressure.



Alcohol flux has a fruity alcohol smell. It can sometimes look like dish soap foam, not the gross appearance and odor of slime flux, another liquid that can ooze out of trees.

Alcohol flux occurs on elms, poplars, and maples. We usually see it during dry summers, so it is not surprising to see it in Sioux Falls, and it disappears by fall. The flux does not harm the tree so no worries. And despite the name alcohol it is not drinkable so no licking the tree!

Yankton County, Bagworms on juniper

Bagworms (*Theridopteryx ephemeraeformis*) are an unusual pest to see in South Dakota. Our winters are too cold to allow this insect to complete its development.

The name bagworm is very descriptive as the larvae form a bag around their bodies. They hatch out in the spring from the bag mom made, either crawling out on the shoot or floating with the wind on a tiny thread of silk. Once they find a suitable spot, they feed and form a bag. The bag of foliage fragments gradually enlarges as the larvae continue to feed.



The bagworm larvae have finished feeding now. They have formed a pupa within the bag and will become adults in another few weeks. The males will become a small moth. They fly to mate with the wingless females which remain within the bags.

Once the females lay eggs within the bag, they drop out, falling to the ground and die. The eggs overwinter in the bag. Eggs may survive temperatures as low as -20°F during midwinter. Our winters often dip below this threshold so only the southern fringe of our state has a climate favorable to bagworms.