



Tree Pest Alert



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Plant development for the growing season

We had a stretch of extremely hot weather. Temperatures soared into 100°F for three days. The combination of these hot temperatures with high humidity touched off heat advisories.

Here are the accumulated growing degree days (GDD-base 50) for communities across the state.

Aberdeen	2,200
Beresford	2,580
Chamberlain	2,570
Rapid City	2,040
Sioux Falls	2,590

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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The drought intensity map from the US Drought Monitor has not changed since last week. The southeastern quarter of the state – south of Hwy 14 and east of the Missouri – is still classified as “Abnormally Dry,” “Moderate Drought” or “Severe Drought.” The counties along or east of I-29 to the North Dakota border are also included in the drought.

Plant development usually slows at this time of year as trees and shrubs are beginning to prepare for the winter. While they may not be flowering or growing, they still need water. They may not be growing but they are wilting.



Treatments to Begin Now

Locust borer

Locust borers (*Megacyllene robiniae*) began emerging at about 2,300 GDD and continues to 2,800 GDD. I am starting to see the adult borers land on locust trunks. Adults are hard to miss. They are about an inch long with long antennae. The body is almost black but with

bright yellow stripes running across their backs. Some of the stripes form a large W – that does not stand for wasp though they look like one!



You can also find these colorful adults on goldenrod flowers where they feed on pollen. But they are also laying eggs on the locust, as in the picture, and these will soon hatch to become larvae. The larvae tunnel through the inner bark and sapwood during their lives and become an inch long at maturity. The tunneling by the larvae weakens the trunk and may cause the infested branch or trunk to snap.

The locust borer only attacks locust (*Robinia*), not honeylocust (*Gleditsia*). Many black locusts survive the attacks and continue to grow though there may be a few broken limbs and knotty swelling on the trunks as signs the insect has called the tree home. Once the tree is about 10 years old, it is rarely attacked.

But good luck keeping the Purple Robe locust (*R. pseudoacacia* 'Purple Robe') alive that long. While this cultivar has attractive chains of purple pea-like flowers, it is borer candy. I rarely find one that lives even five years before being killed by locust borer.

Treatment is usually a saw to remove the dead, infested (and often snapped) tree but the trunks can be sprayed now with an insecticide to kill the insect. These bark sprays contain Bifenthrin, Carbaryl, or Permethrin as the active ingredient and must be labelled for control of this insect. Most injectable products are ineffective against this insect.

Timely Topics

Emerald ash borer update

The adult emerald ash borers have finished their flight periods. The bookends for their flight are Memorial Day and Labor Day. We start seeing the first adults emerge after or during Memorial Day. The last emergence is in late July or early August. Since the adults live for three to six weeks that means they are gone, or their numbers are few by Labor Day.

The larvae found during our sampling are mostly 3rd instar, though there are still a few 2nd instar around. Emerald ash borer larvae develop through four stages

(instars) between mid-summer and fall. I expect to start seeing 4th instar within a couple of weeks. Most of the damage done to the vascular system of the tree (disruption of the inner bark and outer sapwood) is being done now by the 3rd instar. The 3rd and 4th instars are the tree-killers.



Pine looper update

The pine looper population continues to collapse in the Pringle area. This is the spot where we saw extensive pine defoliation in the last two years. This late summer, however, we are not seeing many pupae. Instead, the mature larvae are dying at a remarkably high rate.



The little literature on this insect notes that defoliation outbreaks last one or two years. This is true of this one. Natural enemies – insects and pathogens – seem to have checked the expansion of the insect. I doubt if we will see a third year of defoliation at the intensity experienced the last two years.

We have found some small pockets of defoliation within four or five miles of the Pringle outbreak. These may continue for another year but are not expected to expand.

The question now is the mortality of the pines in the Pringle area that were defoliated in 2022 and 2023. Two years of defoliation is a severe stress on pines. It would not be too surprising to see a third of the trees in the defoliated stands decline and die by spring.

E-samples

Willow pinecone gall

At this time of year, a common sample is the willow pinecone gall. These cone-shaped galls appear on the tips of willow shoots. Sometimes just a few and other times the entire willow shrub is covered with them. The cause for these galls is the willow gall midge (*Rhabdophaga strobiloides*).



The adult fly lays its eggs on the stem of the host in early May. Once the eggs hatch, the young larva burrows into the base of the developing shoot tip. The larva feeding causes the expanding bud to grow abnormally, creating a cone of stunted overlapping leaves. The galls begin to form in early summer but are not very noticeable during this time. However, by the time the larva matures, late summer, the galls have reached their full size. They are gray so stand out against the green foliage. The larva overwinters in the gall, becomes a pupa in the spring and then emerges as an adult.

Can I eat this?

I continue to receive pictures of berries with the question "Can I eat this?" or "Can I make this into wine?" You can eat or drink almost anything. The correct question is what will happen if you eat or drink this. Common buckthorn (*Rhamnus cathartica*) small trees are covered now with these blue-black fruits along the shoot tips. The fruit should not be eaten as it is a powerful laxative. It should not be made into wine; it still will be a laxative.



American cranberrybush viburnum (*Viburnum opulus* var *americana* syn. *V. trilobum*) bright red fruits are out now. These drupes (a fleshy fruit with multiple seeds in the center) can be eaten raw, or better, cooked and are an acceptable cranberry substitute. The fruit is rich in vitamin C and has a tart, acid taste. The fruit makes an excellent jam. The best fruit is either slightly under-ripe or over-ripe and touched by a frost, either will cut the tartness a little. The European form (*V. opulus*), a common ornamental has bitter fruit.



Samples received/Site visits

Fall River County, Ponderosa pine with a proliferation of cone clusters

The proliferation of cones at the tips of pines is a rarity, but common enough that the phenomenon is in the literature. This abnormal cone production was observed in 1 out of every 35,000 cones in one study or every 3 to 4 trees out of 500. This proliferation (forking) of cones is under genetic control so does not appear to be environmental related, just happens.



Lyman County, Hackberry blister gall

This gall is like the hackberry nipple gall, but the symptoms are small blisters rather than large bumps on the leaves. The leaves will sometimes have small holes in them as well. The insect responsible for the injury is *Pachypsylla celtidisvesicula*, an insect that appears as a

miniature cicada. There are no treatments for this insect nor are any needed. The damage is cosmetic.



Lincoln/Minnehaha County, Declining spruce

These are two samples from Sioux Falls on spruce. Spruce needle diseases are easy to identify as the fruit bodies have distinct characteristics which aid in identification. Not so with disorders. There are no good clues on samples to easily identify whether the causal agent is drought, poorly drained soils or some other environmental or site condition.



These two samples fit that description. The spruce samples show reduced shoot expansion in 2023. The older needles – those that formed in previous seasons – are also being shed prematurely. Spruce normally retains their needles for at least five years. These samples show that the two-, three- and four-year-old needles are already being shed.



A likely reason for the decline of these spruce is the drought (and hot temperatures) we are experiencing this year in the region. The treatment is water – not pesticide or fertilizer.

Walworth County, Pine needle scale on spruce

I suspect drought is also a reason for the decline of this tree, but it clearly has other problems. The most noticeable is the insect pine needle scale (*Chionaspis pinifoliae*). The white bumps on these spruce needles are the immobile adult stage of this insect. There are lots of them. Finding more than four per needle means the scales are a serious threat to the tree's health.



The scales are all female. They are beginning to lay eggs beneath their white shells. Once this is finished, they die. The eggs will hatch next spring. The young, referred to as crawlers, will move out from beneath the shells to feed on the new needles that will be forming. The crawlers feed with their piercing-sucking mouthparts by sucking the contents of ruptured cells.

There are two generations per year in the region with the first-generation crawlers hatching at 300 GDD, about the time common lilac is in full bloom. The first-generation hatch over a brief period, only about a week or two. The second-generation crawlers begin hatching at about 1400 GDD, about a week after Ural false-spirea begin to bloom. The second-generation crawlers hatch over a longer period, often several weeks.

Treatments start at about 350 to 400 GDD as the crawlers are beginning to settle. The most common treatment is a foliage spray of horticultural oil. The oil will suffocate the young crawlers but have minimal impact on the many insects that feed on the scale. Oils can damage needles if misapplied so read and follow label directions exactly!

The other option is a foliage spray, lower trunk spray, or soil drench with an insecticide containing dinotefuran as the active ingredient and labeled for scale.