



# 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

The growing degree days (GDD-base 50) are increasing as the daytime temperatures are climbing into the 80s°F and only drops to the low 50°Fs or high 40°Fs at night. Growing degree days are based on the mean of the highest and lowest temperature for each day minus 50. Since hot weather is a limit to woody plant development, the highest temperature is capped at 86°F, any high temperature above this is just considered to be 86. This means very hot weather does not result in quicker development.

Miss Kim lilacs are in full bloom and late lilacs are just beginning to bloom. Late lilac is the last lilac to bloom for the season.



Another tree in full bloom right now, but one you can smell as well as see the flowers is the cockspur hawthorn. This small tree has attractive white flowers, but they emit a fishy, ammonia-like odor. This is from the chemical trimethylamine, also present in decaying animal tissue.



The current GDD for communities around the state are as follows:

Aberdeen	486
Beresford	695
Chamberlain	646
Rapid City	507
Sioux Falls	656

Drought conditions persist across most of the state. Only the northeastern counties bordering North Dakota and the western counties north of the Black Hills are not in a drought. The drought intensity for the remainder of the state is abnormally dry except for the southeastern quarter which is classified as moderate drought.

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## Treatments to Begin Now or Soon

### **Codling moth**

Treatment time is upon us as the adult codling moths (*Cydia pomonella*) are out laying eggs. Once the eggs hatch, the larvae will burrow into the newly forming apple, usually near the base of the fruit, resulting in a trail through the apple filled with brown, powdery frass.

Treatment is usually malathion applications, though there is evidence that carbaryl (commonly sold as Sevin) provides better control, beginning about 10 days after petal fall with three more applications spaced about 10 days apart. The other option is bagging the individual apples using the Japanese fruit bags when the apples reach about ½-inch diameter.

This is no guarantee of control as the fruit may become infested before it reaches that size. But the bags do provide reasonable control of this pest. The bags also can improve the shine to the apple – worth a try.

### **Spruce bud scale**

Spruce bud scale (*Physokermes piceae*) crawlers will soon be hatching. The scale resembles a small round, reddish bud which can be found on the tips of the branches where the side branches attach to the shoot. They, and their mobile young called crawlers, suck the sap from the shoots resulting in dieback and decline of the lower branches. Since these are soft scales, they produce honeydew that results in a black, sooty appearance to the needles and twigs. The scales have one generation per year and the crawlers' hatch about the time littleleaf lindens bloom which should be in two or three weeks.

The best treatments are insecticides containing carbaryl as the active ingredient (and labelled for this use) applied on the foliage and shoots near the tips. Products containing imidacloprid can be effective as a soil drench but need to be applied in the fall or spring for controlling the insect during the summer.

### **Spruce needle miner**

We are also coming up to the time to treat spruce needle miner. The needle miner (*Endothenia albolineana*) gets its name from the fact that the young larvae are so tiny they can live inside the needle, mining it as they feed. They eventually outgrow their home and then create a nest of webbed, detached needles to live in. The larvae usually feed on the lower, exterior needles, almost stripping the tips of needles but they can also be found in the interior of the tree and even the tops of young trees.

The adults are small moths that will begin flying soon and depositing eggs on the needles. The treatment is usually with a pesticide containing carbaryl as the active ingredient and labeled for this use. Infested trees should be treated in another two weeks or so as the adults should be flying by then. It might be a little later if the temperatures do not increase soon.

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## Timely Topics

### **Emerald ash borer update**

Emerald ash borer adults are beginning to fly. The first emergence was noted on Monday, May 29 in Sioux Falls. There are recent D-shaped holes cut through the bark and if you trace these back, they will lead to an empty overwinter chamber.



Not all the chambers are empty yet. Emergence begins around Memorial Day and peaks about the third week in June, about the time lindens are in bloom. The last emerald ash borer to emerge for the year usually does so before the end of July. Since the adults live for about three to six weeks. The last adult dies before Labor Day.

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## E-samples

### **Cluster cup rust on currant**

Every year I see something that is rare – a pest that might only appear every decade or so. The one for this year is the cluster cup rust disease (*Puccinia caricina*) of currants and gooseberries (*Ribes*). The disease presents as large yellow to orange blotches on the leaves and orange, swollen, fuzzy fruit that does not look anything like fruit.



This picture came from Corson County. The photographer had not seen this before, hence the question; "What is this?" The weather conditions for spore germination must be just right to see this sort of widespread appearance of the disease.



This is not the white pine blister rust that also appears on currants and gooseberries. This rust disease affects the leaves, not the fruit, and the leaves have numerous tiny orange spots rather than large blotches.

As with almost all rust diseases, cluster cup rust has an alternate host. The disease must alternate back and forth between its two hosts. The alternate host for this disease are sedges (*Carex*) found in marshes and wet areas.

### **Crown rust on common buckthorn**

Another rust disease that is appearing now, but one we see every year, is crown rust (*Puccinia coronata*). The disease results in yellow to orange fuzzy blotches on the leaves. The disease is quite noticeable but not a concern. Common buckthorn (*Rhamnus cathartica*) is a weed tree – an invasive species. It is native to eastern Europe and western Asia. The small tree/tall shrub was brought to this country as a hedge plant more than one hundred years ago.



It is still a common hedge plant in older neighborhoods but is no longer planted because the fruit – a glossy black berry – is readily taken by the birds and deposited everywhere – fence lines, alleys, windbreaks, and riparian forests. A disease that slows the plant down is a good thing.

The alternate host for this disease are oats. This can be a serious disease for oats, reducing yields by up to 40 percent or more.

### **Girdling roots on linden**

I received a text with several pictures attached of a linden that is bare, while the trees around it are in leaf. The problem is not winter desiccation injury, the most common reason for bare or thin canopies of trees this spring, but the roots.



The base of the tree shows a root that is circling the trunk. When a root is pressed against the stem they do not graft, instead the root compresses and girdles the trunk. Eventually the trunk is squeezed enough that the water and sugars are not transported across this barrier, so the tree dies. Surprisingly, it can take fifteen years or more for stem-girdling roots to kill a tree.



The problem begins when the pot-bound tree is planted and nothing is done to remove the circling roots. The roots of lindens are prone to circling around the pot once they reach the container wall. If these circling roots are

not cut or spread out at planting, they will continue to become larger and eventually the expanding trunk and roots will touch.

The other requirement for this problem is planting the tree too deep. A root will not girdle another root, these will usually graft together. Trunks will not graft with roots. The only way a root can girdle a trunk is if the tree is planted too deep, so part of the stem is buried.

Planting pot-bound trees too deep is a common problem. Not every tree species is affected – we rarely see stem-girdling roots on oaks, for example – but they are very common on lindens and maples.

Once the tree has been in the ground this long, there is little that can be done. It is difficult to excise the offending roots at this time without killing the tree in the process. Removal is usually the best, and sometimes the only option.

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## Samples received/Site visits

### **Potter County, Browning cedars in belts**

This is one of many calls (and samples) of young (planted in the past year or two), browning cedars (*Juniperus*). We are not looking at the disease juniper twig blight. The symptoms of this disease usually occur a little later in the year.

The browning is mostly winter desiccation injury. This past winter was particularly tough on evergreens. I have seen trees that have never even had a little brown in past winters turn completely brown this past spring. Some trees are so injured they will not recover.



The best way to check is to strip a little bark from a brown twig. If the inner bark is white and moist, the tree will probably recover. If it is brown and dry the branch (or tree) is dead.

### **Sully County, Atrazine injury to a young cedar belt**

This is a follow-up to a site visit made several weeks ago (see *Pest Alert* May 10, 2023). The landowner had a

new belt established in the spring of 2022. This spring all the trees had brittle, straw-colored foliage. The roots were also dead.

There are few diseases that will wipe out an entire belt. Weather, such as winter desiccation injury, can create this pattern but if it were due to the winter the roots would still be alive. Another common source of the loss of all or most of the trees is herbicide.



When I asked if herbicides were applied to the soil the year before planting (2021), the landowner mentioned atrazine was used. This raised a red flag as atrazine and evergreen do not mix well, though junipers have a higher tolerance than others. The herbicide also has a long carry-over, at least two years following the application.

This means the earliest cedars should have been planted was spring 2023; it is better to wait three years, delaying the planting until 2024. Some deciduous material can be planted after two years but for many evergreens it is best to wait three years. Some trees, such as poplars (*Populus*), have a high tolerance to atrazine and have been used for phytoremediation of atrazine-contaminated soils.

I collected tissue samples and the results show high levels of atrazine. The lowest residue that produces symptoms is 140 ppb. The analysis found 112 ppb, 18 months after the application.