

Pest Update (July 20, 2016)

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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.

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

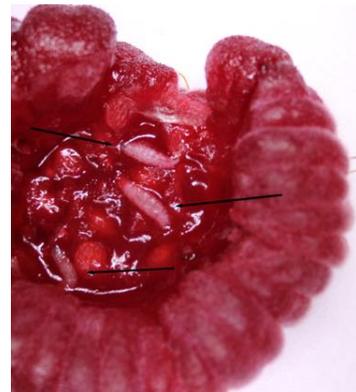
We are right on schedule for plant development this year, maybe still a little ahead. The summer-flowering billard spireas (*Spiraea x billardii*) are in full bloom along with our other summer favorites, Ural falsespirea and smokebush.

Timely topics



Spotted wing drosophila is infesting fruit in South Dakota. The first reports were about a week ago. The spotted wing drosophila (*Drosophila suzukii*) is a small vinegar fly that was first discovered in the United States in 2008 and since that time has moved throughout the country and into our state. It is a very tiny fly, a small fraction of an inch, so cannot fly far. How did it get everywhere so quickly? You guess it – people and their vehicles.

This fly is a particular problem with small fruits, in our state the currants, elderberries, grapes, raspberries and strawberries. It also will infest aronia and cherries. It is becoming a major headache as the female cuts into the ripe fruit with a saw-like ovipositor to inject the eggs beneath the thin skin of the fruit. The eggs hatch in one to three days and the larvae quickly swarm the inside of the fruit rendering it into mush. There is nothing worse (well one thing) than collecting a tray of raspberries, placing them in the frig and the next day having nothing but a tray of slime. The “one thing?” Biting into the fruit and noticing an off-taste and texture and realizing you ate a fruit filled with these worms! Yum! Actually you might not notice them at all and according to the literature eating them is not harmful to humans – just gross.



The short life cycle means that there are multiple generations per year so this insect can easily, and quickly, destroy a crop. Since the insect attacks only ripe fruit, fruit that will be harvested very soon, there are fewer insecticide options available to producers and home fruit growers. The insecticides are applied to kill the adults before they lay their eggs. Once the eggs are inserted into the fruit there are no effective treatments. Insecticides containing spinosad or Malathion,

to name two possible treatments, may be used but applicators must follow the label as to crops, intervals between treatments and interval before harvest.

The best way to tell when the insect is in the area (other than find damaged fruit) is monitoring with traps. The insect does not appear to overwinter in South Dakota, temperature below about 20°F are fatal, so must be reintroduced each year. This means we usually do not see the insect until late June to mid-July depending on the summer temperatures so June-bearing strawberries and summer raspberries often escape infestations. It's the day-neutral and fall-bearing raspberries that are damaged the most.

The insect will also feed on non-crops hosts such as common buckthorn and chokeberry. Producers that have their small fruits surrounded by windbreaks containing these, and other, fruit plants may be creating a reservoir of the pest. We are conducting a study at SDSU to determine the suitability of our non-crops fruiting plants for this insect.

Photo credit for SWD: Mary Roduner, former SDSU Extension Consumer Horticulture Field Specialist.



Hackberries are beginning to recover from the frost. I am seeing hackberry trees that were almost completely defoliated a few weeks ago now covered with developing leaves. The frost damaged the foliage that was opening and once these leaves were lost, new leaves have emerged to replace them. These trees should be watered as the new, tender foliage is opening during a hot, dry summer.

E-samples



Cedar-quince rust (*Gymnosporangium clavipes*) is appearing on the hawthorn fruit. This disease is very similar to cedar-apple rust but its deciduous host is hawthorn along with quince and serviceberries rather than apples and crabapples. The pinkish aecia tubes are covering hawthorn fruit at this time and I have seen Arnold and cockspur hawthorns with very fruit looking like it had a fight with a porcupine! The list of "cedars" that serve as alternate hosts is also a little expansive than cedar-apple rust

with creeping juniper (*J. horizontalis*) and savin junipers (*J. sabina*), all common ornamental junipers, also serving as hosts along with eastern redcedar and

Rocky Mountain juniper. The disease can be managed with applications of a fungicide containing mancozeb applied as the hawthorn leaves are expanding and repeated twice at 10 day intervals.



Codling moths are infesting apples. There are two major apple pests in South Dakota, the apple maggot and the codling moth. The apple maggot seems to be the bigger problem from year to year but this summer I have received samples and pictures of apples damaged by the codling moth. The damage is visible on the surface of the apple. These will be “stings”, shallow holes or depressions where the larvae started to burrow, but died or moved to another location. There will also be crisp holes in the fruit. These are entry holes where the larvae began to tunnel into the fruit. There will also be exit holes where the larvae left to drop to the ground. These will often have powdery golden-brown frass near the surface. If you cut into the infested apple you’ll find a small worm with a pinkish body and a brownish head. The larvae start out fairly small, less than 1/8 inch but grow to be about 1/2 inch before exiting the fruit. The tunneling is concentrated near the core as the developing larvae like to feed on the seeds. At this time of year there is not much that can be done other than removal all infested fruit from the tree. This can reduce the number of larvae that drop to the ground to pupae and become adults.



Is this the dreaded emerald ash borer? No, but this is a common insect showing up now across the state. This is a metallic wood-borer (*Buprestis confluenta*) that colonizes poplars and other hardwoods in our region. I receive e-samples of this buprestid and its cousin the golden buprestid that attacks pines and is found in the Black Hills. The concern (or hope) is that this is the emerald ash borer. The *concern* is people are worried that the emerald ash borer is in their trees or area, a concern heighten from the recent discovery of the borer in the Omaha, Nebraska area. The *hope* is from a few folks that want the notoriety for being the person to find it.



I also continue to receive pictures and calls about “bumps” on maple leaves. These are maple bladder galls appearing on a silver maple leaf. These galls are the work of the maple bladder gall mite (*Vasates quadripedes*). The mite moves from the bark to the expanding leaves and feeds on the underside of the foliage. This results in a colorful gall forming on the upper

side of the leaves, usually beginning as a green bump but then becoming red, yellow and black as the season progresses. The galls may look as though they are a serious threat to the tree but they are almost insignificant in the injury they cause even if the entire leaf is covered with them. No treatments are recommended and very few are even effective and some even harm the tree more than the mite!



This is a picture of a wilting Russianolive (*Eleagnus angustifolia*) and while there are several possible reasons for this to occur the most likely is **Phomopsis canker** (*Phomopsis arnoldiae*). This disease causes cankers that girdle stems and branches which restricts water movement. The leaves on these affected branches turn a light-tan, then wilt and become brittle, but often remain attached. The cankers usually appear on only a branch or two in a tree and these can be spotted by a slightly sunken area that may be reddish-brown or black. The disease seems to move from stem to stem or branch to branch until the entire tree is dead. There are no effective fungicide treatments for this disease. The most common recommendations are to prune out dead and dying stems (during dry weather) and provide good airflow by separating plants. The disease seems to be worse in closely spaced windbreaks.



I also have been receiving pictures and calls about spongy plums. This is plum pockets (*Taphrina communis*) a fungal disease that appears about this time every year. The disease begins as small white blisters on the developing fruit which eventually engulf the entire fruit. The infected fruit becomes larger than normal, hollow with a spongy shell. As the case with many diseases, once you see the symptoms it is too late to

initiate control measures. The disease can be managed, but not eliminated, with a single application of a copper fungicide just before bud break. Timing is critical to this application as too early will not protect the extending bud and too late the lime will harm the developing leaves. At this time the best that can be done is to clean up the fallen misshapen fruit.



Root weevils are beginning to show up in homes. There are at least four root weevils in our state, the strawberry root weevil (*Otiorhynchus ovatus*), the rough strawberry root weevil (*O. rugostriatus*), the lilac root weevil (*O. meridionalis*) and the black vine weevil (*O. sulcatus*). They spent the early part of the summer putting notches in the leaves of

lilacs (*Syringa vulgaris*) and other plants. The root weevils overwinter as mature larvae which have been feeding in the soil on the roots of a wide range of plants from clover to spruce. The insect pupates in the spring with the adults emerging from the soil in June. The adults do not fly but climb up on the plants at night to feed and lay eggs. If they are disturbed the adults quickly drop to the ground and hide. They are not easy to find. However, they are darn easy to find in the house. The adults seem to have a preference for an air-conditioned home during these hot days and you can find these insect walking around in your family room looking for a place to hang out and relax. The adults are beetles about 1/3 inch long with a long stout. They also like moisture so keeping the foundation of your home water by watering flowers next to the house encourages them to come on in. Home treatment is a vacuum or cat.

Samples received/site visits

Brookings County

What is this weed?



This is Japanese knotweed (*Fallopia japonica*), an invasive weed or interesting ornamental depending upon your point of view. The plant is a common perennial in more eastern states and but will spread by rhizomes to engulf any area not separated by concrete (and has been known to break concrete). The plant with its large heart-shaped leaves and hollow stem certainly has an exotic appearance. Fortunately it is not common

in South Dakota as it is not very winter-hardy. The roots can survive our cold winters, however, so I do occasionally see patches of this plant in gardens in the eastern part of the state.

Gregory County

What is causing these bumps on the black walnut?

The galls forming on the petiole of the black walnut leaves are from the black walnut erineum (*Eriophyes caulis*), a mite. There is no effective treatment and the problem is rarely serious enough to harm the walnut.

Hanson County

What is this insect?

Well, this does look close to emerald ash borer, but this is a false click beetle (Family: Eucnemidae). They do look close to the emerald ash borer as they are also torpedo shaped but false click beetles are brown to black, rather than a metallic green. The antennae is also much longer. False click beetles are typically found in or on rotten wood or beneath the bark of declining trees.

At this time of year I start receiving pictures of berries with the question "Can I eat them or make jam?" Always a good idea to have a plant identified before eating the fruit!



Marshall County
What is this and is it edible?

What is this and is it edible?

Yes, this is the common chokecherry (*Prunus virginiana*) and the fruit, while sour, can be used for jam and jelly. The fruit hangs in racemes, long clusters of drupes.

Minnehaha County

Why are my oaks declining?



Based upon my site visit, this appears to be Bur oak blight (BOB), *Tubakia iowensis* a fungal disease that affects only one botanical variety of bur oak, but unfortunately this is the most common variety of bur oak in eastern South Dakota. The disease is present in most, if not all, the woody draws that run through Sioux Falls and along the Big Sioux River from Sioux Falls to Dakota Dunes. The foliage symptoms appear in mid-July to early August with infected leaves developing purple-brown lesions along the mid-vein. Large wedge-shaped areas of chlorosis tissue develop on these leaves by early fall. The affected leaves will wilt and often remain hanging on the tree until spring. The disease intensifies each year and trees may die after repeated infection. Propiconazole as root flare injections can be performed on these trees in late spring after the leaves open but before symptoms appear, and this provides some reduction in symptoms. Injections may provide two years of protection.

Pennington County
Why are these chokecherry leaves stunted and bunched up?

Why are these chokecherry leaves stunted and bunched up?

This is X disease, a disease caused by a phytoplasma (though once thought a virus) and is the most common, but often overlooked problems on chokecherry. The symptoms include stunting of leaves and shoots (hence the bunched appearance to the foliage), discoloration of the leaves, fruit becoming deformed

and eventually dieback and death of the plant. The disease is spread from plant to plant by leafhoppers. There are really few management options for this disease other than remove infected plants from a windbreak row. Since the disease symptoms appear so gradual it's possible to miss infected plants.



Potter County **Please identify this bush and tell me if it is edible, the birds like it.**

The bush is the Tartarian honeysuckle (*Lonicera tatarica*) and birds such as robins and cardinals usually readily take the reddish-orange round fruit. The dropped seeds come up almost everywhere and now the shrub is considered an invasive plant in many areas of the country. The fruit is fairly bitter and is considered mildly poisonous to humans, particularly children, so I don't suggest trying the fruit yourself.

Stanley County **These ashes have wilted and died back recently. Is this verticillium wilt?**

Verticillium wilt is a soil-borne fungal disease that occurs on catalpa, maples and elms and occasionally ash. Interestingly, the characteristic green streaking of the sapwood, a common symptom, is missing in ash. We will be testing for the presence of this organism and will respond in the next *Update*. This is one of those diseases that warrants testing as it is one of most common misdiagnosed problems. There are many abiotic and biotic stressors that will result in wilting and dieback of trees.

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