Pest Update (April 15, 2015)

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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. **Walnut samples may not be sent from any location – please provide a picture!**

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.

Plant development

The warm weather is pushing the development of our ornamental plants. American plums are beginning to bloom (in fact had this picture of one sent in this week) along with Nanking cherries. Crabapple leaves have expanded to about half their normal size so hopefully the first treatment for apple scab (see the last issue

of the *Update*) is already on the tree.

Timely Topics

Pine engraver beetles are flying

The warm, dry spring has moved up the emergence of the pine engraver beetle. The adults spend the winter beneath the bark of standing or down trees or in the litter beneath the tree. When we start having consistent warm weather (temperatures in the 60°F) the adults begin flying. *This flight usually coincides with the leaves of apple trees beginning to open*. These adults actually prefer fresh slash (the branches and limbs left on the ground from recently felled trees). If the needles attached to these branches are still green, most likely the beetles will attack the slash and not the standing trees. However, during periods of drought, or if the slash is not available or has dried out, the beetles will attack trees. Treatment for the pine engraver beetle is the same as the mountain pine beetle, a spray of an insecticide specifically labeled for bark beetle control. The only difference is the entire trees from the top of the canopy to the base of the trunk must be treated when treating for the engraver beetles. The mountain pine beetle only attacks the trunk and only from the base of the trunk to a height with the diameter is about 4 or 5 inches in diameter so less coverage is needed. Another difference is the spray to control pine engraver beetle must be applied now while treatments for just the mountain pine beetle can be delayed until sometime in May. A single treatment made now with coverage over the entire tree is sufficient to control both insects.

Planting bare-root trees

Trees are typically planted from stock that is bare-root, container-grown or balled-and-burlapped (B&B). Most trees purchased at garden centers are obtained either as a container-grown tree or B&B while windbreak are generally planted with bare-root trees. Each planting type has their advantages. Containers are common packaging for the smaller size trees, those that are less than 12 feet tall or 1.5 inch caliper (the diameter of the tree 6-inches above the ground) at the time of sale. Containers are easy to transport home and the roots and soil are more protected during this process. Balled-and-burlapped trees are usually larger trees and if a 2 or 3-inch caliper tree is desired most often it will come B&B rather than in a container though larger diameter container trees are becoming more commonly available.

Bare-root is an excellent means of planting a tree and, while often limited to seedlings to be planted in windbreak, it can also be done successfully in the landscape with even 2- to 3-inch diameter trees. The advantage to planting bare-root is the ease at which the correct planning depth, indicated by placing the highest root just beneath the soil surface, can be determined and avoiding the problems with changes in soil texture between the planting site and the container or B&B ball. Surprising to many, but bare-root trees, properly planted and cared for, can have better survival and growth than either container-grown or B&B trees.

The primary drawback is the narrow time window in which bare-root trees can be planted. While bare-root trees can be planted in the autumn and spring in most of the United States, in South Dakota only spring planting is advised. Our harsh and dry winters can often injure tender fall planted bare-root trees. Bare-root plantings are limited to the spring time period between soil temperatures warm enough to allow for root growth (at least 45^{o}F) and when the tree's buds begin to expand. Fortunately trees can be held in cooler to delay bud expansion.

There are two key consideration when planting bare-root trees; 1) keeping the roots moist until planting and 2) sweating. Bare-root trees are vulnerable to drying out as their roots are exposed to the elements. Bare-root trees must never have the root left to dry and exposed to the sun. This exposure can cause desiccation injury that will result in poor survival and growth. Bare-root trees must be kept cool, about 40^{o}F) until planting and the roots covered with a damp packing material. Ideally the tree would go directly from the packing material into a planting hole that is quickly filled with water and covered but this is always practical. However, the shorter the time between being removed from the packing material and into the planting hole, the better. The Big Sioux Nursery boxes are designed to provide additional insulation and are ideal for storing seedlings, do not remove until you have to plant the trees. Even a five minute exposure on a hot, windy day can kill tree roots. If possible hydrate the roots by placing them in a tank of water for one to two hours before planting. Only have the roots covered with water, not the tops. Also do not allow the trees to remain in water for more than two hours, longer time periods may result in root mortality.

Some bare-root tree require sweating before being planted. The list of tree species that require sweating is fairly short but bare-root birch, hawthorn, honeylocust, ironwood and oaks all require this treatment. If removed from a cooler and directly planted into the field or landscape, these tree species often fail to break bud and may remain dormant far into the summer and either leaf out very late or not at all. Sweating bare-root trees involves laying the stock down in a shaded area, preferably on the north side of a building or better yet in the building, covering the roots with wet packing material such as straw or fine woodchips and then sealing the entire plant, tops and roots, with a sheet of clear plastic that is held tight to the ground. The daytime air temperature should be between 50^{o} and 60^{o}F. Once the sweating process has started, the buds on the trees in this "mini sauna" will begin to swell within a few days due to the moderate temperatures and high humidity. Once the buds begin to swell remove the trees and plant them. This is the next problem; the trees must be planted immediately following sweating but if planted in dry, cool conditions, the expanding buds will continue to open very slowly, if at all. The sweated trees should be planted in humid, warm conditions and these conditions may not occur in South Dakota until mid-May. Therefore, keep bare-root oak and other species that require sweating in the cooler until early May, and then sweat them for a week. By then the conditions outside should be acceptable for planting these bare-root trees in the field.

And finally, this year it may continue to stay dry. When planting new belts every seedling should get about a quart of water at planting, a full quart as soon as it is in the ground. Waiting a few hours before watering with soils as dry as they are may result in significant mortality.

Phomopsis spruce decline

As if Colorado spruce do not have enough problems, now we have to be worried about phomopsis spruce decline. While dieback on spruce has long been attributed to the combined actions of cytospora canker and drought, phomopsis may also be a factor in the decline. Phomopsis is another fungus that can create cankers on spruce which can result in the branch dying back. The cankers are not as noticeable as those caused by cytospora but may also ooze resin, a similar symptom associated with cytospora. The general symptom pattern between the two diseases is similar, the lower branches are the first to shed needles and die. The needles on the affected branches often turn brown or purple before they drop, but this again is a common symptom for cytospora canker and

rhizosphaera needlecast among other pathogens. One symptom that also associated with phomopsis is wilting or curling of the terminal, almost resembling frost or herbicide injury. Whether phomopsis is a major factor in spruce decline or merely just associated with the decline is still in question but this may become one more, in a growing list, of problems for spruce.

E-samples

I got a picture of a "silvery growth" around the twigs of an apple tree. The "growth" is not a gall, but the egg mass to the **tent caterpillar**. This insect is a common defoliators of mountainash, cherry, plums and crabapples. The female laid the eggs in late summer and the eggs hatch the following spring. Many years the eggs would be hatching by now but the cold spring is delaying this for another week or so. If you can spot the egg masses in your trees, now is a good time to cut off the twig and attached mass and destroy them by crushing, burying, or burning. Do not just cut off the eggs and leave them on the ground beneath the tree. While the mice might eat them, they could still hatch and the larvae move into the tree. One other important note: sometimes you can find old egg masses, ones that hatched last spring. These egg masses will look gray and weathered with numerous tiny holes where the larvae emerged. The new egg masses will appear almost like molten glass around the twig with no holes from them.

I received a picture showing the fungal disease called **black knot** (*Apdiosporina morbosum*), also known as dead man's finger, a very common disease of cherry and plums. These black, coal-like galls that are sometimes covered with a white power can often be found lining the branches and trunks of plums, chokecherries and Mayday trees. A common recommendation is to prune out these galls during the winter months, but this activity has very limited value. First, these blackened galls are the *second* year of infection. The shoots initially infected last year have only a slight greenish swelling of the tissue. If these shoots are not removed they will grow to form the blacked masses the following year, as you can see it is hard to get ahead of the disease by pruning. The other problem is only some trees are very susceptible to black knot and once they get the disease you can probably expect the tree to become infected again regardless of your pruning efforts. Basal pruning (cutting the tree down) is probably the best approach if you have one that is covered with the knots.

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