Pest Update (April 8, 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.

Timely Topics

The warmer spring weather has pushed us far ahead of last year in plant development. Forsythias are in full bloom in Brookings right now, about one month ahead of last year. This means that the time to finish some early spring plant chores is rapidly coming to an end.

Apple scab

Probably one of the more urgent chores to begin are fungicide applications to reduce apple scab injury. Apple scab symptoms do not show up till summer but management starts very soon with fungicide sprays applied just as the buds are beginning to open, less than a 1/4-inch of leaf showing. We are at the silver tip stage now so bud break will be occurring very soon in the northern part of the state and has already occurred in the south. After the first spray, fungicide sprays are continued about every 7 to 10 days apart until after petal fall, after that the weather usually turns a little drier and a 10-14 day interval can be used until the end of June when applications generally stop. The first two apple scab fungicide treatments are critical to the successful management of this disease and if these are missed there will be a significantly reduction in control of the disease even if the remaining sprays are properly timed. The most common fungicides used by homeowners for control of apple scab have Captan, Chlorothalonil, Copper or Myclobutanil listed as an active ingredient. Chlorothalonil is labelled for use only on crabapples, not apples that will be harvested and copper applications can cause russeting on the fruit of some apples. Captan is probably the most common fungicide used by homeowner to manage apple scab on their apple trees. Captan is also the fungicide included in multi-purpose fruit tree sprays. But these multi-purpose fruit tree sprays also contain at least one insecticide, usually carbaryl, and carbaryl should not be applied while the apple is in bloom. It is best to apply a fungicide specifically for management of apple scab rather than a multi-purpose product.

Walnut toxicity to other plants

I received several questions last week on walnuts and their toxicity to other plants. Walnut have long been known for their ability to stunt the growth of nearby plants. The toxin, juglone, is excreted from the roots and if the root of the walnut comes in contact with roots of sensitive plants, the chemical can result in discolored leaves or stunted growth. Juglone is also produced in the nut and leaves but generally not at high enough concentrations to cause a problem. The affected plants are usually within about 20 to 25 feet of the walnut trunks, the area where the walnut roots are mostly concentrated.

Juglone is not toxic to all plants, it generally affects plants in the Solanaceae family (e.g. tomatoes, potatoes, peppers) and Pinaceace family (e.g. pines, spruce). The problem typically occurs when large, mature walnuts are growing near a vegetable garden of Solanaceae crops or seedling pines or spruce.

Once the evergreen trees reach a height of 10 feet or so, there is little problem. The problem is also less if the soils have good organic matter content (3 – 5 %) as these soils contain enough microbes to degrade the toxin.

Planting trees on old feedlots

I received an interesting sample; a soil analysis report. The tree area had the following results:

Soil pH	Soluble Salts 1:1 mmho/cm	Organic Matter %	Phosphorus ppm	Potassium ppm	Calcium ppm
7.5	0.68	4.5	60	970	3127

These results are consistent for what is found in and aside old feedlots. Soil pH is usually in the 7.5 – 8.0 range and soluble salts are elevated, though in this instance not as high as many I see. Soluble salt concentration less than 0.46 mmho/cm (1:1) would be preferred. Calcium, phosphorus and potassium are often elevated to several times or more their normal soil levels in old feedlot soils. Trees do well in soils with calcium, phosphorus and potassium levels of 50-80, 6-9 and 40-80 ppm respectively. They are considerable higher in this soil. Usually these elevated amounts are found only in the upper foot of the soil as the leaching process is very slow for these elements but the upper foot of soil is where the majority of tree roots occur and all the tree roots for seedlings.

The only solutions for establishing trees are either 1) wait out planting trees for several more years and plant cover crops, 2) remove the upper foot of soils from the feedlot before planting or 3) plant salt tolerant trees. The first two options may not be acceptable or practical so the only choice is to go with tolerant species.

The most salt tolerant shrubs are lilac, peashrub and seabuckthorn and for trees hawthorns and Austrian pine (The two most salt-tolerant woody plants are Russian-olive and tamarix. However, Russian-olive can become invasive, so plantings are being discouraged, and tamarix is invasive and plantings are no longer allowed). However in these soils, hackberry, honeylocust, hoptree, and junipers may do well. The plants to *avoid* would be the saline soil sensitive dogwoods, elms, maples, plums and walnuts.

E-samples

Here was an interest e-sample. The question was not if the trees were diseases but if they were planted too close. This is a young belt of Colorado spruce that was planted on 7-foot centers. All the trees survived and are thriving,

however, in about another 5 years the lower branches of these trees will begin to touch and a few years later these same branches will begin dying out. I see too many 20 year old belts where the evergreens are now too crowded and are beginning to die out. At least with this belt, the trees are still small enough to be moved with a tree space. My recommendation was to remove at least every other trees or better still, two out of every three trees, as a 21-foot spacing would be far better than a 14-foot spacing in the long run.

I also received a picture of exit hold on a green ash in southeastern South Dakota. The size and shape of the holes leads me to believe this is the native banded ash borer (or its close relative, the redheaded ash borer) rather the emerald ash borer. The emerald ash borer creates a very crisp D-shaped hole about 1/8-inch wide when it exits while the banded and redheaded ash borer are oval or round and a little larger. However I will visit this tree next week for a closer inspection.

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