Anthracnose Diseases on Ash, Maple, and Oak Trees

There have been a number of reports on the occurrence of anthracnose diseases on shade trees in Northern Nevada. The disease causes severe leaf damage, and occasionally complete defoliation in the spring and summer. Although symptoms of the disease occur rapidly and are generally severe, it rarely kills trees or causes long-term health damage. Prevention and proper management can reduce the harm of the disease to a minimum.

Anthracnose is defined as "a leaf, stem, flower or fruit disease with characteristic limited, sunken, necrotic lesions caused by fungi". The typical symptoms are dark-colored spots and sunken lesions with a slightly raised rim. It attacks foliage, stems, or fruits of many plants including shade trees, ornamental shrubs, fruit trees, and annual agricultural crops.

Anthracnose diseases are caused by fungi that usually produce asexual spores (conidia) with fungal fruiting structure (acervuli). There are four genera of fungi that cause most anthracnose diseases. Symptoms caused by these fungi may vary among plant species or infected parts. The fungi overwinter in fallen leaves and small branches or twigs on the tree. In the spring, survived fungal spores spread to young shoots and leaves causing initial infections. After the first cycle of infection, newly produced spores on recently killed tissue may re-infect other parts of the tree or other trees when conditions are favorable. Multiple disease cycles may occur during the year if the weather is cool and wet. Repeated infections on a tree may cause severe defoliation and potential twig dieback. However, as long as the tree is free of other diseases and the growth vigor of the tree remains normal, the tree usually recovers from the infection.

To prevent the occurrence of anthracnose diseases, fallen leaves and twigs should be collected from planting sites and dumped after sealed in a heavy duty plastic bag, especially when the tree has been infected in the current year. Any dead or infected branches on the tree may be pruned out to reduce primary infection sources. The tree should be maintained vigorously all the time to help the tree fight against anthracnose. Stressed trees are more prone to the infection, and reoccurrence of the disease year by year may weaken the tree significantly, which increases its susceptibility to other harmful organisms such as insects, other diseases, and even environmental stresses. Because the fungal infection favors wet condition and cool temperature, any practices such as overhead watering that will increase surface moisture of leaves are not recommended. When planting trees, enough space between trees should be left to allow good air circulation and maximum exposure to the sun light. If anthracnose diseases have been a persistent problem on specific tree species in the area, alternative tree species or cultivars may be selected for planting. There are some species or cultivars that are believed to be more resistant or less susceptible to anthracnose. For example, northern red oak, pin oak, and green ash are less severely affected than other species. Consultation with nursery professionals to obtain further information may be needed for better selection of tree species.

In most cases, infected trees do not require treatments unless defoliation is severe and frequent occurrences are not tolerable. There are a number of fungicides labeled for certain anthracnose diseases, but it is a must to strictly follow the label instruction of each product. Generally, the first spray should take place in the early spring as a prevention procedure when the leaf begins to grow out, and such sprays should continue every 14 days for several times. Further sprays may be necessary depending on the weather, severity of the infection, and plant species.