

TSU NURSERY NEWS TO USE

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Crape myrtle bark scale (CMBS), as the name suggests, are invasive insect pests of ornamental crape myrtle from Asia. This pest is spreading across Tennessee and has been found around the Knoxville area. Distant mobility of CMBS is largely due to movement of infested material. Feeding occurs by piercing the woody tissues of the crape myrtle via piercing mouth parts and siphoning out the phloem (sap) of the plant. In addition to reduction of the aesthetic value of the plant by a decrease in flowers as well as the buildup of black sooty mold from the honeydew secretions as a result of feeding (photo 1), this pest can cause stunting and branch die back which can lead to the death of the tree. Adults are white to gray in color and covered in a waxy coating that can be difficult to penetrate with chemicals. The adult female can produce up to 250 eggs which overwinter in ovisacs produced by her body. Crawlers emerge from the eggs in April and May and are very small and pink without a protective waxy coat. A second peak in crawler activity usually occurs in late summer around August. Overlapping generations may occur depending on the climate and conditions. Infestations usually start in the canopy where new growth occurs and heavy sap flow resides on upper branches and small twigs and migrate slowly towards the trunk as populations grow. It is typical to see them aggregate on the undersides of branches to avoid the sun and winds. Many management strategies can be adopted both preventively and curatively. One preventative management strategy is proper pruning to both promote the health of the tree and discourage insects and disease. Proper pruning involves routinely removing small twigs and limbs that overlap or cluster in order to promote sunlight penetration and airflow which is not an ideal environment for insects.

Avoid making large cuts as can be seen in photo 2 due to significant stress being exerted on the plant which attracts insects.



Photo 1 : Black sooty mold buildup on lower limbs as a result of honeydew secretion as well as reduction of flowers due to feeding photo by Phil Haar.

In addition to the large wounds inflicted, tender new growth emerges rapidly from the wound and provides easy forage for the scale insects with an abundance of sap. Small clusters of scale can be removed via pruning but must be burned following in order to prevent spreading. Proper pruning also permits better pesticide coverage inside the canopy by clearing overlapping limbs so the insects are not sheltered from sprays.



Photo 2 : CMBS infestation on crape myrtle photo taken by Phil Haar

When applying insecticides keep in mind the timing of application in order to target the susceptible life stage of the scale. Horticulture oils can be applied when crawlers begin to emerge in April and May and then again in the late summer. Soil drench neonicotinoids such as imidicloprid need to be applied in March around this time of year to be effective in the Spring when crawlers emerge and begin feeding. Avoid the application of pyrethroid or broad spectrum over sprays to trees in order to encourage the presence of biological control agents that occur naturally such as lacewings and lady beetles.

Boxwood Leaf Miner (BLM) is a midge pest of boxwood that lays its eggs inside boxwood leaves between the upper and lower leaf tissues. The larva is a maggot that feeds inside the leaf and forms a pupae or final instar larva as it enters dormancy (photo right). The feeding damage done by the larvae appears as a light green or yellow spot on the upper leaf surface and orange or brown blisters on the underside of the leaf (photo below). After prolonged damage branch die back may occur. Many tactics can be implemented in order to control this pest. The first line of defense is variety selection in which the English varieties are less susceptible than the American varieties. Pruning out early infestations and burning the cuttings is also a great physical control management strategy. As far as chemical control measures go, there are several options that can be administered both foliarly and as a soil drench.





Photo by Phil Haar Boxwood Leaf Miner Damage

Imidacloprid or dinotefuran can be applied to the soil between the end of March and early April for activity in May before the female lays her eggs. A soil drench is the best method of application due to its low risk toward non target organisms such as bees and natural enemies as well as its longevity of control. Dinotefuran and imidacloprid can also be applied foliarly in the spring for localized activity in the leaves. If undergoing this method, over spray in the evening or early in the morning when pollinators are not as abundant.

Winter Injury: This past December was a rough month for many outdoor plants which include ornamentals. Symptoms of cold damage should be apparent in the landscape and nursery

resembling dead tissue as pictured below by the bronze needles on these conifers. Freeze damage can also be identified by symptoms including cracking or splitting in woody trunks or stems, flaccid or discolored foliage, scorched foliage or flowers, wilting foliage or sagging branches. Although unsightly and worrisome that the plant could be dead it is advised that leaving the plant alone until Spring could be the best course of action. Pruning now could further damage the plant if still alive by exposing living tissues to cold temperatures ahead. Once the plant has begun to grow in healthy areas and the cold has passed, it will be easy to see areas of the plant that are necrotic and need to be pruned. Any slimy, softened or watery tissues that present a rotting odor should be pruned. Only dead tissues should be pruned as over pruning will stress the plants. Look for green healthy tissues and stop pruning so that the plant can begin recovery from those sites. Over watering during this time can stress plants by promoting new growth rather than aid recovery. Moderate watering or drip irrigation is recommended. Avoid applying fertilizers for the same reason as it will promote too much growth to a damaged plant.



Photos by Phil Haar

