PLANT HEALTH CARE REPORT

Sugar Maple

Sugar maple (*Acer saccharum*) is a medium-to-large growing, desirable shade tree for northern landscapes. In the summer it has medium green leaves which change to brilliant yellow, orange, and red in the fall. Sugar maple will grow to a height of 60 to 80 feet in the landscape and has a rounded crown, typically two-thirds of the height in width. Maple syrup is produced primarily from sugar maple. Trees are tapped in February or March to extract the sap—40 gallons of sap are required to produce one gallon of syrup.

Summer shade

Fall foliage

The Florida maple (*Acer saccharum* subsp. *floridanum)* and southern sugar maple (*Acer saccharum* var. *saccharum*) are genetically very similar to sugar maple and perform better in southern states. Many varieties of sugar maple are available to fit site needs. These varieties have improved fall color; drought resistance; and columnar, conical or compact shapes.

While sugar maple grows well in many landscapes, it grows poorly in restricted urban sites. It requires a large area with noncompacted, fertile, moderately moist, well-drained, slightly acidic soils (pH of 5.5 to 6.8) and adequate levels of organic matter (>3.5%). Growth is fastest in full sun; however, the tree will tolerate shade when it is young. It is intolerant of extreme soil moisture—soils that are either wet or dry will hinder development.

Continued on page 2

Yellowing between the veins of leaves, interveinal chlorosis, is a symptom of manganese deficiency. This problem occurs in soils with high pH, low manganese levels, and/or poor drainage. Trees with root disorders are more prone to nutrient deficiency. When soil pH is greater than 6.8, manganese is converted to forms which are not available to the plant increasing the probability of chlorosis.

Any limitation to water uptake can severely damage trees. Deicing salt or salt spray from high winds will result in dieback of twigs, marginal necrosis, and a general decline of the tree. Drought also leads to decline, and occasionally, physiological leaf scorch, which appears as marginal browning during the summer. Adding mulch around sugar maple will improve the soil by conserving moisture, modifying pH, and adding organic matter.

Sugar maple is susceptible to multiple leaf spot diseases that disfigure leaves and cause early defoliation. Bacterial leaf scorch, which may be confused with physiological leaf scorch, is caused by the bacteria *Xylella fastidiosa*. Cankers, diseases of the bark, mainly infect after severe winters or extended droughts. They cause branch dieback and can kill the tree if they progress into the stem. Root diseases (caused by *Phytophthora* or *Armillaria*), Verticillium wilt, and nematodes can cause dieback of the crown and eventual death. Sugar maple is susceptible to several important decay fungi that attack the wood. These fungi enter through improper pruning cuts and other injuries to the stem and branches. Decay can structurally weaken the wood and increase the potential for branch and tree failure.

Flagging and abnormal coloration caused by *Verticillium*

Numerous insects and mites attack maples. Leaf-feeding caterpillars include spongy moth (*Lymantria dispar*), tent caterpillar (*Malacosoma disstria*), and cankerworms. White coatings on twigs is caused by the cottony maple scale (*Pulvinaria innumerabilis*) while less visible scales include gloomy, maple phenacoccus, and maple leaf. Aphids and scales often produce honeydew, a sugary substance that attracts sooty mold. This group of fungi colonize and blacken leaf surfaces leading to reduced tree vigor. The sugar maple borer (*Glycobius speciosus*) attacks low-vigor trees and larval tunneling can cause deformations in the wood.

Sapsucker woodpeckers, deer, and squirrels wound sugar maples to access the sweet sap. These wounds may girdle the stem or provide entry for canker fungi.

Monitoring and Treatment Considerations for Sugar Maple

Winter

Monitor for scale, cankers, and twig borers; treat as needed. Remove dead, dying, diseased, and broken branches. Expose and inspect root collar for problems. Add mulch as necessary. Sample soil for nutrient and pH levels. Fertilize, adjust pH, and amend soil according to soil analysis. Inspect young plants for deer browse; apply repellent treatment and fencing as needed. Protect young trees from sunscald if in exposed sites.

Mid-spring

Apply fungicide treatment to suppress anthracnose and leaf spot if there is a history of disease or excessive rain. *Inject flare roots to treat manganese deficiency or adjust soil pH as needed on a 3-year schedule.

Late spring

Repeat fungicide treatment to suppress anthracnose and leaf spot as needed. Monitor for leaf-feeding and scale insects; treat as needed. Use biocontrol agents for aphids if present. Sample foliar nutrient and soil if micro-nutrient deficiency is suspected.

Early summer

Repeat fungicide treatment to suppress anthracnose and leaf spot as needed. Monitor for leaf-feeding and scale insects; treat as needed.

Mid to late summer

Monitor irrigation and soil moisture, especially on newly planted trees, to minimize water stress and prevent root disease.

Fall

If sucking insects were problematic this past growing season, consider treating with an appropriately timed systemic product. Use biocontrol agents for aphids if present. Begin deer repellent treatment to protect young trees, if deer browse is likely. *Inject flare roots to treat manganese deficiency or adjust soil pH as needed on a 3-year schedule. Fertilize and amend soil according to soil analysis.

*Systemic injections are available to treat manganese deficiency. This treatment can be applied at any time except when the tree is frozen, during drought, or on trees with severe root damage. Fall treatment rates are higher than spring. Treatment should not be repeated more than once every three years.