

# RESEARCH UPDATE

## Sugar maple a good source for cultivars

by Doug Chapman, Dow Gardens

The sugar maple (*Acer saccharum*) is proving to be a fruitful tree species for introduction of new cultivars.

Reasons for this can be found by examining the tree's range, characteristics and cultural requirements. The native range of sugar maple is from New England to Minnesota and south to North Carolina and Georgia. For a species with such a large native geographic range, points of origin are numerous.

Generally, the farther north the plant is native, the more responsive it will be to photoperiods. Further, it will have more spectacular fall color. New England sugar maples develop red and scarlet fall color. Michael A. Dirr reports native *Acer saccharum* from Southern Illinois develop golden-yellow fall foliar color.



*Acer saccharum* shows lime-green spring leaves and dark green summer foliage, as well as the spectacular scarlet, red, and yellow of fall.

*Acer saccharum* is known for its lime-green spring leaves and dark green summer foliage, as well as the

spectacular scarlet, red, and yellow leaves it exhibits during fall. It is not uncommon for all three colors to be present on a single large specimen, but a single color will predominate.

The sugar maple's upward oval growth habit is usually quite uniform. It will reach a height of 100 feet, with a landscape effective height of 60 feet.

The sugar maple is propagated by seeding, cuttings, and budding. Seeding is quite common for native plants, but when one is trying to propagate clones, budding or cuttings should be considered. With cuttings, you are using the original root system, there

is no incompatibility, and uniformity remains. Since most cultivars

*continued on page 74*

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## UPDATE from page 72

be they chance selections or purposeful hybrids—are selected as a whole plant, it does not make sense to bud them on rootstocks of unknown phenotypic influence or inappropriate provenances. Rootstocks of inappropriate provenances can lead to lack of hardiness or incompatibility (in congeniality). This problem has been documented for trees that have a large native geographic range, like *Acer rubrum* cultivars.

### Use large, well-drained sites

The sugar maple is a climax forest tree which grows in fertile, well-drained soil, yet is shallow rooted. A pH of 5.5 to 6.5 is optimal.

*Acer saccharum* is slightly tolerant of sulfur dioxide, ozone and PAN. It needs a large planting site to thrive, and is perfect for commercial landscapes, parks and golf courses. It is not well suited as a city street tree unless planted in areas with ample outlaws. Sugar maple is sensitive to chlorides, thus road salt. Further, it is sensitive to poorly drained/compacted soils. The cultivars are selected because they will grow in unique conditions

or have desirable habits of growth.

The 'Commemoration' sugar maple (introduced by Wandell) reaches a height of 40 to 50 feet within 30 years. It has an upright oval growth habit, and it develops a heavy dense crown with dark green summer foliage and red to orange fall color. The leaves are reported resistant to leaf tatter.

### A look at the cultivars

The 'Endowment Columnar' sugar maple (introduced by Siebenthaler) develops a landscape effective height of 40 to 50 feet and a width of 10 feet. The fall color of the Endowment is yellow to red, indicating a somewhat southern provenance. 'Endowment' has been reported resistant to leaf scorch, making it a street tree candidate.

The 'Fairview' sugar maple was introduced by the McGill & Son Nursery. Its habit is broad and round, reaching a height of 40 feet. It maintains a strong central leader. The summer foliage is dark green with yellow, orange, and red fall color developing in mid autumn. Nurserymen report a fondness for the 'Fairview' because it develops caliper more rapidly than the species.

'Globe' sugar maple is a small, round plant, 10 to 12 feet in height which has a place in commercial, street, or home landscapes. The green summer foliage yields to a bright yellow color in the fall.

'Green Mountain' or black maple, was introduced in 1964 by Princeton Nursery. It is tolerant of compact soils, and exhibits little leaf scorch. Michigan municipal foresters have reported 'Green Mountain' sugar maple the most important drought tolerant-street tree sugar maple cultivar. The habit of growth is an upright oval, reaching 40-45 feet in height. The summer foliage is a dark green with light yellow fall color.

'Legacy' sugar maple has been reported to have a dense, heavy crown reaching 50 feet in height. It was introduced in 1983 by Willet N. Wandell. The fall foliage is a bright yellow to orange and red some years. Dirr reports it to be superior in the south, while Kluck's Nursery in Saginaw, Mich., feels it is dependably winter hardy and one of the best sugar maple cultivars for the eastern Great Lakes. It is well suited to commercial landscape, park, and/or golf course plantings.

'Newton Sentry' sugar maple, a columnar tree, is two to three times taller (30 feet) than its width. This selection, found in Newton, Massachusetts, has a strong central leader. Its best landscape use is in restricted areas. It has green summer foliage with orange fall color. 'Newton Sentry' is not as drought tolerant as 'Green Mountain.'

'Goldspire' sugar maple is a pyramidal tree, reaching 40 feet in height. The summer foliage is a light green with yellow fall color. It is reported resistant to leaf scorch but not as resistant as 'Green Mountain.' 'Goldspire' seems adapted to street tree or low-maintenance use in parks.

'Seneca Chief' sugar maple is an introduction of Schichtel Nursery. It is a dense upright oval tree, reaching 50 feet in height and 20 feet in width. The green summer foliage will yield to a bright orange leaf. It is a northern provenance, being hardy to Zone 3.

'Monumentale' sugar maple is a narrow, upright tree (40 to 50 feet). When young, it is very narrow and upright with a central leader. As it matures it develops a vase shape. The fall color is a bright orange.

Good references on maples are: Michael A. Dirr's *Manual of Woody Landscape Plants*, 1990, Stipes Publishing; and Willet N. Wandell's *Handbook of Landscape Tree Cultivars*, 1989, Horticulture Research Institute.

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