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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

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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.

LM

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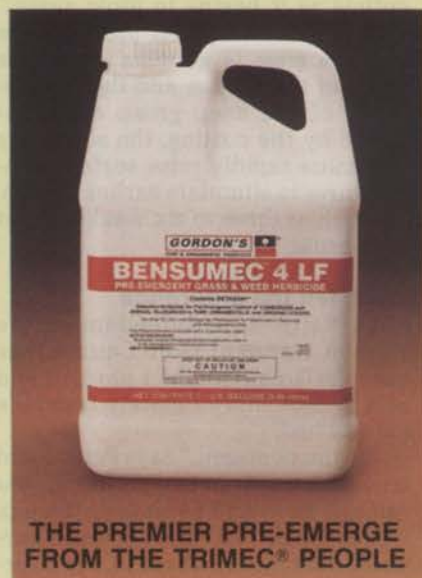
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728R-1290

Turf colorant keeps grass 'summer' green

The most orthodox of turf professionals might shudder at the thought, but turf colorants are often used to brighten dormant or water-starved turf, or as a supplement to overseeding.

If you're wondering whether paint will injure the turf, fear not. Turf paint has long been one of the tricks of the athletic field and golf course management trades, and is mentioned in *The Turf Manager's Handbook*, by W.H. Daniel and R.P. Freeborg (1987, Harcourt Brace Jovanovich).

The following is a look at three turf colorants on the market.

The grass still grows

Jim Wellborn of Green Graphics, Albuquerque, N.M., assures golf course superintendents that his Green Graphics paint does not affect the turf's life cycle. In the spring, the original turf will re-emerge from dormancy.

"If you were to examine the grass cuticle as it begins to grow again," says Wellborn, "you'll probably see that the grass is growing out of the paint, at the bottom and the top. Because of the deep green color imparted by the coating, the sun's rays will more rapidly raise surface temperatures to stimulate earlier growth, as much as three to six weeks earlier than usual."

Can't tell the difference

Mike Petty, superintendent of the Tucson National Golf Course, has used the Green Graphics product, and says it does indeed closely resemble natural turf.

"If you overseed," says Petty, "and it doesn't come out to your liking, you can just go in and paint over the top, thereby painting the dormant bermuda that shows through the overseed."

Turf paint also comes in handy if you're behind on your seeding schedule.

"If you have to overseed late," explains Petty, "you can paint over the top of the overseed before it germinates, giving you the dark color and the heat absorption."

"In painting the dormant bermuda," Petty remembers, "we had a quicker green-up than any of the other courses."

The W.A. Cleary Co., Somerset, N.J., markets the Grass Greenzit colorant. According to Bron Zienkiewicz, director of marketing and development, Greenzit can be



Green Graphics colorant brightens up the fairways at the Tucson National Golf Course in the dry, arid Arizona climate.

used on all types of turf, for dormant, browned-out turf or turf discolored from mis-application of herbicide or fertilizer.

Varied dilution ratios

Colorants can be easily diluted to achieve the desired color. "We recommend 4 to 10 ounces per gallon of water for discolored grass, 10 to 18 ounces for dormant grass," explains

California has made Greenzit especially popular in that state.

Use on thirsty turf

Drought stricken golf courses or neighborhood lawns can at least "look good" with colorants. "A number of golf courses and consumers have used it on their lawns because of water restrictions," says Zienkiewicz. "It's good for a tournament spruce up, and can also be mixed with sand to fill divots".

Cleary recommends using its colorant only when the temperature is above 40°F and when no immediate rain is anticipated.

When using any colorant, avoid spraying on windy days, and wash out spray tanks immediately after use.

Athletic field applications

Green Lawngr is a colorant from Becker-Underwood of Ames, Ia. Company president Roger Underwood says Green Lawngr is a latex-formulated, water-base paint that is suitable for any species of turf. According to Underwood, Green Lawngr is primarily used by sports turf and lawn care professionals.

"Sports turf people appreciate our product because it is a flexible coating," says Underwood. "When the field is in high use, the coating will hang on to the turf better; it won't become brittle and fall off."

Green Lawngr was recently used at last summer's World Cup soccer tournament in Italy.

Recommended use rate is one gallon per 10,000 sq. ft. **LM**

With the paint's dark green color, the sun raises temperatures to stimulate the growth of dormant grass.

Zienkiewicz.

Dilution ratios are often altered for application to different species of grasses. On bentgrasses—which are often used on golf greens, and which become only slightly discolored from winter cold—Wellborn says a Green Graphics application of a 40:1 maximum dilution is often all that is necessary to bring natural color back to the grass.

Landscape managers experienced with colorants may require a minimum 10:1 dilution ratio on totally dormant grasses with Green Graphics. The most often-used ratio of dilution is 20:1.

Zienkiewicz says low rainfall in

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Golf car shows off hill climbing ability

Columbia ParCar dealers successfully demonstrated the golf car's hill climbing ability during the company's International Dealer Meeting.

The scene was Devil's Head Lodge in Merrimac, Wisc. The hill was the



Number 3, which has a 28 percent grade of slope.

Columbia reports that the ParCar climbed the hill "effortlessly." Secret to the climbing power is the two-cycle engine built in Deerfield, Wisc.

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New turf utility trucks are tough and capable

Jacobsen has introduced two rugged new utility trucks.

The Model 2315, with its 23.5 horsepower liquid-cooled engine, and the Model 2015, with a 20 hp gas engine, can haul 1500 pounds, with a 19



cubic foot cargo capacity. Tailgate removes for unloading.

The Jacobsen trucks have a five-speed transmission with reverse. Top speed is 20 mph. A welded steel frame, large front bumper and heavy-duty drive train make them durable.

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Briggs & Stratton says the unit is



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