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Sugar Maple

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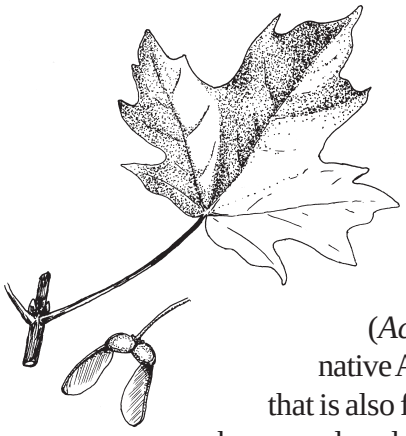

Maple syrup and brilliant fall colors - that's what sugar maples are best known for. Also know as hard maple or rock maple, sugar maple (*Acer saccharum*) is a native American hardwood that is also favored for it's clear, honey-colored wood – one of the hardest and prized for furniture and flooring, bowling alleys and bowling pins. An uncommon type of wood from maple called "birdseye maple" is especially valued for its unique lustrous, wavy grain.

Biology and Silvics

Native to the eastern United States, sugar maple is one of our largest and most important hardwoods. Sugar maples do best in cooler, moist climates. In its native range, temperatures range from winter lows of – 40°F and summer highs of 100°F. Annual precipitation ranges from 20 to 80 inches with an average of 50 inches in most the native range. Average growing season precipitation rates range from 15 inches in western areas to 40 inches in the east.

Sugar maple is very shade tolerant and grows best on well-drained loamy soils with a pH level between 5.5 to 7.3. This species does not grow well on dry, shallow soils and is rarely, if ever, found in swamps.

Establishment

Site selection. In the Inland Northwest, sugar maple should do best on loamy, well-drained soils at least two to three feet above the water table. Because of the differences in precipitation patterns and relative humidity, landowners interested in being successful with sugar maple will need to irrigate trees in the summer months.

Avoid low-lying areas with frost pockets and poor drainage. If possible, choose mid-slope areas with east- to north-facing aspects. Air drainage will be best in these locations and they will also be cooler and retain moisture longer in the summer months than south- and west-facing aspects.

Planting densities. Spacing will depend on what you want to grow your sugar maple for. Sugar maple plantations for sugar production, commonly called a sugar bush or sugar grove, need to be at a wider spacing than one that will be for timber production. Sugar production is best in open-grown, large canopied trees. For optimal production, plant your trees at 30 by 30 feet apart, allowing 50 to 60 trees per acre.

Growing sugar maple for timber production requires a "different type of tree" – a good sawtimber tree will be tall, with straight stems and no branches below the growing crown. Spacing for a sawtimber plantation should be planted at 14 by 14 feet part. This closer spacing will help correct forking problem common in open-grown sugar maple that result from the frequent loss of the terminal bud in this opposite-branched species. The bottom four to six feet of tapped sugar maples will have a reduced timber value because of defects as a result of tapping.

Planting stock. Research studies have shown that sugar content is higher in certain families of sugar maple trees and that sugar content in individual trees is consistent over time. Breeding programs are underway to see if these higher yielding sugar trees can be reproduced consistently and improved upon by genetic selection.

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Culture and Management

Protection. Hardwood trees, including sugar maple, are extremely susceptible to animal damage. Deer, elk, moose, porcupines, mice, and rabbits eat foliage and/or bark, while pocket gophers eat roots. A wide variety of animal damage control methods are available, with various rates of costs and success, but nothing will protect your hardwood plantation better than a good fence. The mots important feature of your fence will be height - fences need to be tall enough to exclude deer (at least seven to eight feet) and have a strong latch on the gate.

Irrigation. In its native range, sugar maple receives significantly more precipitation than most areas of the Inland West. Supplemental irrigation will be necessary for a successful sugar maple plantation or sugar bush.

Pruning. Pruning is a very important aspect of hardwood tree care and maintenance. Species with a large sap flow in spring, such sugar maple, should be pruned in December or January. The first winter, pruning should concentrate on trimming crooked leaders back to upright buds, shortening lateral branches to 10 to 12 inches and removing any crossed or rubbing branches. This is also a good time to stake up drooping leaders.

Insects and Diseases. Sugar maple is not highly susceptible to insect injury and serious outbreaks in its native range are not common. Pests that may infect sugar maple in the Inland West include the forest tent caterpillar, aphids and some scale insects. Diseases that could affect sugar maple in the Inland West include anthracnose, nectria canker, and verticillium wilt.

Sugar maple can be severely damaged by deicing salts. Numerous animals feed on both the foliage and the bark, including deer, elk, moose, porcupines, and a variety of rodents.

This sweet tree of the east is also a popular shade and ornamental tree and one that is valued for its timber as well as it syrup producing capacities. With the right site and management you to can grow sugar maples and reap the many benefits of this magnificent tree.

For more information, you can request the following publications from the UI Extension Forestry office by phone at (208) 885-6356 or by e-mail at extfor@uidaho.edu.

- For more in-depth information on growing hardwoods, request Alternative Tree Crop Series No. 1: **Hardwoods 101: Planning, Planting, and Maintenance**.
- For information on hardwood plantation estab-lishment and costs, request a copy of Idaho Forest, Wildlife and Range Experiment Station Bulletin No. 59: **Hardwood Plantations for the Inland Northwest.**

At a glance…

Species: *Acer saccharum*.
Common names: sugar, hard, or rock maple.
Native range: eastern Canada and northeastern United States south to the Appalachian Mountains and west to Minnesota and Missouri.
Hardiness: USDA Zones 3 to 8.
Soil type: grows in a variety of soils, best on deep-well-drained loams. Does not do well on swampy sites or in shallow, dry soils.
Shade tolerance: tolerates shade very well; grows well in full-sun.
Form: slower-growing, large tree.
Regional insect and disease problems: tent caterpillars, aphids, nectria canker, verticillium wilt, anthracnose.
Objectionable characteristics: prolific producer of winged seeds.
Other: Sugar maple is the principal source of maple syrup.

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