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UNIVERSITY OF MINNESOTA

# MINNESOTA MAPLE SERIES

## IDENTIFYING MAPLE TREES FOR SYRUP PRODUCTION

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### INTRODUCTION

There are at least one hundred species of maple in the world. Fourteen of these are indigenous to the United States. In Minnesota, the four species used for producing maple syrup are: sugar maple (hard maple) *Acer saccharum*; red maple (soft maple) *Acer rubrum*; silver maple (soft or cutleaf maple) *Acer saccharinum*; and boxelder (Manitoba maple) *Acer negundo*.

Most maple syrup is made from sugar maple sap. Sugar maple sap is preferred for making maple syrup because it has an average sugar content of two percent. Because sap from other maple species is usually lower in sugar content, approximately twice as much is needed to yield the same amount of finished syrup. If processed carefully, the resulting syrup from any of the maples described will have good flavor. Ornamental maples, such as the Norway and Schwedler maple, have a milky sap and cannot be used for syrup production.

### IDENTIFYING MAPLE TREES

Maples are easy to identify because of their opposite branching habit, leaf shape, and unique fruit called *samaras*. During the active growing season, maples can be identified by their leaf shape. Following are descriptions of the four maples used for syrup production in Minnesota:

#### SUGAR MAPLE (*Acer saccharum*)

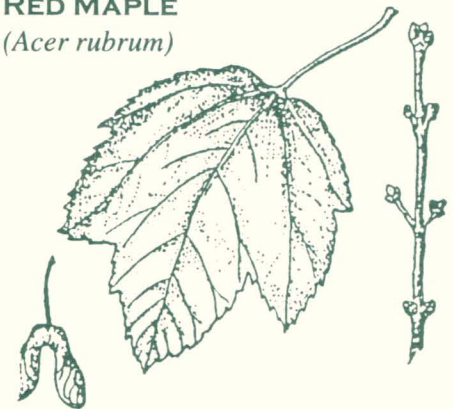


Sugar maple grows in most regions of Minnesota except in the extreme western counties. On better soils, it attains a height of sixty to 100 feet with trunk diameters in excess of three feet. In forests it develops a clean trunk to a good height, whereas open-grown trees form a dense, round-topped crown.

The leaves are opposite, simple, three to five inches long, broad, and usually five-lobed. The lobes are

sparingly wavy-toothed. They are thin, firm, opaque, dark green above, paler beneath, and turn brilliant shades of yellow, orange, and red in autumn. The flowers are greenish and inconspicuous. The fruit, called a two-winged samara or *key*, differs from other maples in that it matures in the fall and germinates the next spring. The bark on young trees is light gray to brown and rather smooth, later breaking into long irregular plates of bark that often loosen vertically along the side. The wood is heavy, hard, strong, close-grained, and light-brown to reddish, with lighter sapwood.

#### RED MAPLE (*Acer rubrum*)



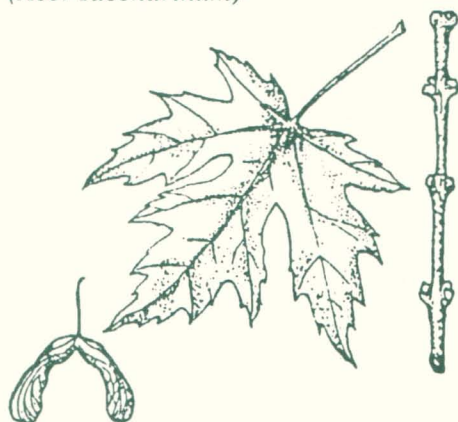
Red maple is common in the north central and northeastern portions of the state and is usually found in moist soils adjacent to wetlands and swamps. It is also found on drier sites in mixed stands of other trees. Red maple is quick growing and makes a fair shade tree for light soils. Red maple is usually a medium-sized tree

forty to sixty feet high and one to two feet in diameter, though it is sometimes larger. While widely distributed, it is short-lived and forms only a negligible part of commercial timber stands. Some varieties are cultivated for ornamental purposes.

The leaves are simple, opposite, three- to five-lobed, doubly serrate or toothed, dull green above, and whitish beneath. Leaves turn brilliant red in autumn. The flowers appear in dense clusters in early spring before the leaves, and, although small, are quite conspicuous because of their red color. The fruit consists of a pair of winged seeds or keys that germinate in the spring. The bark is smooth. It is light gray on young stems and dark gray and rough on old trees. The wood, which is known commercially as soft maple, is light brown, heavy, weak, and close grained. It is used for furniture, woodenware, and fuel.

### SILVER MAPLE

(*Acer saccharinum*)



Silver maple is often called soft maple and grows naturally in most areas of Minnesota. It is commonly planted as a yard and boulevard tree. It can grow to a mature height of forty to sixty feet with a diameter of three to four feet, but is often taller.

The leaves are opposite and simple with three to five lobes, ending in long points with toothed edges and separated by deep angular openings that extend nearly to the midrib. They are pale green on the upper surface and silvery white underneath. The flowers are greenish-yellow and appear in dense clusters in spring before the leaves. The fruit consists of a pair of winged seeds or keys and ripens in late spring. The bark is smooth and gray, becoming darker, furrowed, and separating into long flakes. The wood is hard, strong, close-grained, rather brittle, and pale brown, with thick lighter-colored sapwood.

### BOXELDER

(*Acer negundo*)



Boxelder is the only maple in Minnesota that has a compound leaf. It is the most widespread maple found in the United States and Minnesota. Boxelder prefers moist sites, but adapts to a variety of conditions. It grows fifty to seventy feet in height and two to four feet in diameter. It often divides near the ground into numerous branches that form a wide-spreading crown.

Boxelder leaves are opposite, but are odd-pinnate, with three to nine coarsely-toothed leaflets. The terminal leaflet is sometimes shallowly lobed. The flowers are small, yellowish-green, *dioecious* (male and female on different trees), and appear before the leaves. The fruit occurs in V-shaped winged pairs, forming long, drooping clusters that remain on the tree throughout the winter. The bark is pale gray or light brown, and deeply divided with broad scaly ridges.

For additional information contact your county office of the Minnesota Extension Service or contact:

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