USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Plant Guide

AMERICAN BASSWOOD

Tilia americana L. var. *americana*

Plant Symbol = TIAMA

Contributed by: USDA NRCS National Plant Data Center & the Biota of North America Program

Alternate Names
Linn, American linden, white basswood (var. *heterophylla*), basswood

Uses
Ethnobotanic: Native Americans and settlers used the fibrous inner bark ("bast") as a source of fiber for rope, mats, fish nets, and baskets. Basswood is still valued for its soft, light, easily worked wood, especially for turned items and hand carving. It once was the material of choice for prosthetic limbs, but these are now made from synthetics. Other uses have included boxes, toys, woodenware, drawing boards, veneer, venetian blinds, excelsior, and pulp.

Native Americans used fresh basswood sap, which contains moderate amounts of sugar, as a watery drink or boiled it into syrup. They also ate young basswood leaves and used the cambium for soups and breads. Various medicinal uses were made of leaf and bark extracts, and Iroquois used freshly cut bark as an emergency bandage for wounds.

Wildlife: Basswood is good browse and buds are important for birds and deer in winter. Fruits are eaten by birds and small mammals. The wood decays easily and produces many cavities (especially in trees past 120 years of age), which are used by cavity-nesting animals (wood ducks, pileated woodpeckers, other birds, and small mammals). Basswood is a prolific nectar producer and pollination by honeybees results in a choice grade of honey.

Restoration: Basswood is planted as a shade tree or ornamental. For sites of smaller size or with compacted soils, other *Tilia* species may be more suitable. Basswood is said to be a soil-enriching species, bringing calcium and magnesium up from deep in the soil profile and depositing it in leaf litter on the surface.

Status
Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status, such as, state noxious status and wetland indicator values.

Description
General: Basswood family (Tiliaceae). Native, large deciduous trees, the bark gray and furrowed with flat ridges. Leaves deciduous, alternate, more or less unevenly heart-shaped or the base often nearly truncate, petiolate, the blades 5-12.5 cm wide, thick and slightly leathery, with shallowly toothed margins, glabrous on both sides or with some pubescence on the lower surface. Flowers yellowish-white, 10-14 mm broad, fragrant and nectar-bearing, in drooping, 6-20-flowered clusters hanging on a stalk that diverges from near the center of an oblong, leaflike and strongly veined bract 5-10 cm long. Fruits mostly globose, 8-10 mm broad, hard and dry, indehiscent. The common name is from "bastwood,"

referring to use of the inner bark, the "bast," for rope, baskets, etc.

Variation within the species:
North American basswoods have been separated into many species (usually three or four) or treated as several varieties within only a single species. "Given the inconstancy of most vegetative and reproductive characters [of North American basswood], the ecophenic, ecotypic, and seasonal variation in vestiture, and also the probability of introgression," trichome morphology provides the best evidence for recognizing the component taxa (see Hardin 1990).
a. *Tilia americana* var. *americana*
synonym: *Tilia neglecta* Spach
b. *Tilia americana* var. *heterophylla* (Vent.) Loud.
synonym: *Tilia heterophylla* Vent.
synonym: *Tilia michauxii* Nutt.
c. *Tilia americana* var. *caroliniana* (P. Mill.) Castigl.
synonym: *Tilia caroliniana* P. Mill.
synonym: *Tilia floridana* Small

The varieties of *Tilia americana* intergrade, but in their typical forms are separated as follows:

a. Leaves green beneath, sometimes glaucous, glabrous or sparsely hairy with simple trichomes, sometimes with a few stellate ones. var. *americana*
a. Leaves pale or whitish beneath from the close tomentum of dense, sessile-stellate trichomes, sometimes glabrate with age but remaining stellate-pubescent at least along the major veins. (b)

b. Young twigs tomentose or tomentose-hirsute; clusters of hairs on leaves more than 0.5 mm wide. var. *caroliniana*
b. Young twigs glabrous; clusters of hairs on leaves less than 0.5 mm wide. var. *heterophylla*

Trees identified as *Tilia neglecta* may be variants of var. *americana* or they have been suggested to be introgressants between var. *americana* and var. *heterophylla*. *Tilia floridana* is often recognized as separate entity.

Distribution: *Tilia americana* is native to the Northern Deciduous and Great Lakes - St. Lawrence forest regions of North America. It also extends into grassland areas along river courses in Manitoba and the mid-western United States, where it forms a component of riverine gallery forests. In Canada, it is found from western New Brunswick into southern and central Québec and Ontario, extending as far west as north-western Ontario (along the U.S. border) and southern Manitoba. In the United States, the species occurs as far south as the mountainous regions of North Carolina, Tennessee, and northern Arkansas. The western limit for the species is south-central Manitoba and North Dakota, and along the Niobrara River in north-central Nebraska. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation
Basswood occurs on rich, mesic sites (coves, lower slopes, river bottoms), usually on deep, well-drained soils. It rarely occurs in pure stands but is usually mixed with other forest species. Var. *americana* is codominant in the sugar maple-basswood cover type and all varieties are a common component of many other rich forests. Basswood occurs up to 1500 meters elevation in the southern Appalachian Mountains. Flowering May-June (-July), usually 1-4 weeks after the leaves appear in mid-May. Seeds are dispersed in October.

Establishment
Seed production begins in basswoods about 15 years old (or as early as 8 years) and continues until the trees reach at least 100 years. Heavy seed crops are irregular but good quantities of seed are produced at 1- to 3-year intervals. Germination in the first year or two is often poor, apparently because of an impermeable testa, but seeds may remain dormant and viable in seed banks for up to three years. Few established seedlings are found where the species forms a major component of the canopy, apparently because seedling loss from herbivory by rabbits and deer.

Seedlings can establish in as little as 25% of full sunlight, but heavy shade limits subsequent growth and development. Seedling growth begins slowly, but established young trees are fairly fast-growing. The typical life of a basswood is about 100 years but some are known to live 140-200 years.

Basswood stump sprouts are often very common, and this may produce trees growing in close clusters. Stump sprouts arise from the main stem after its death, fire or logging injury, or aging, or even after disturbance of the surrounding stand. Almost all basswoods 10 cm or less d.b.h. will sprout from the stump, and sprouts have been obtained from basswoods over 100 years old.

Management
Basswood stump sprouts can be managed for saw timber. The number of sprouts declines with the age and size of the cut trees. Since sprouts originating at or below the ground line are more resistant to butt rot, stumps should be cut very close to the ground or

burned. Early thinning of sprouts is needed to ensure good quality and rapid growth.

Over-browsing by high densities of white-tailed deer can result in basswood seedling height growth reduction or even complete loss of basswood from the stand. Mice and voles on oldfield sites may often girdle the stems, and rabbits also feed heavily on seedlings and small saplings. Seed predators include mice, squirrels, and chipmunks. Basswood is easily decayed by fungi, and butt rot is an important factor in loss of merchantable timber.

Basswood is most common in forests with long fire-free intervals, because the thin bark and shallow roots are easily damaged by fire and basal fire wounds increase susceptibility to butt rot. Prescribed fire is not recommended for established stands of hardwoods in which basswood occurs, as too-frequent fire intervals eliminate basswood or restrict it to the most mesic sites. In some places, however, these trees are encroaching onto former grasslands since fires have been suppressed.

Cultivars, Improved and Selected Materials (and area of origin)

These plant materials are readily available from commercial sources. Cultivars of *Tilia americana* have been selected for mature shape, fall leaf color, and rust resistance. Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government." The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

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