

Betula lenta

Betulaceae family

Sweet birch, black birch, cherry birch

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Description: *Betula lenta* is a medium-sized, monoecious, deciduous tree. Flowering occurs before leaf emergence. It can sprout following damage or disturbance.

Variation: *Betula lenta* has no recognized varieties or forms.

Size: Grows to ft. 40-80 ft. (12.2-24.4 m) tall; 35-45 ft. (10.7-13.7 m) wide; the trunk can grow to 24-60 in. (61-152 cm) in diameter.

Leaves: Leaves alternate. Leaf blades/lamina simple; ovate to oblong-ovate; 1.1-6 in. (2.7-15.2 cm) long; 0.6-3.5 in. (1.5-8.9 cm) wide; apex acuminate; margins finely, sharply serrate or obscurely, irregularly, doubly serrate; 12-18 pairs of lateral veins, pinnate; upper surface dark shiny green; lower surface lighter green, mostly glabrous, except sparsely pubescent along major veins and in vein axils; often scattered, resinous glands, minute; petiole stout, 0.3-6 in. (0.8-15.2 cm) long, pubescent.

Inflorescence: Male and female flowers in separate inflorescences on same plant (monoecious).

Staminate (male): Staminate catkins elongate; 2-4 in. (5-10.2 cm) long; in clusters of 3-8; bracts/scales subtending flower glabrous, more or less rounded.

Male catkins initiate in the late summer or autumn; 0.8-1 in. (1.9-2.5 cm) long; over-winter in buds; elongate in the spring.

Pistillate (female): Pistillate catkin erect; ovoid to nearly globose; 0.6-1.6 in. (1.5-4 cm) long; 0.6-1 in. (1.5-2.5 cm) wide; pale green; persistent for a period following seed dispersal. Flowers subtended by 3-lobed bracts; bracts/scales mostly glabrous. Female catkins initiate in the autumn; erect; 0.5-0.8 in. (1.3-1.9 cm) long; green-tinged in red; over-winter in buds; develop in the spring.

Flowers:

Staminate (male) flowers: 3 flowers subtended by 1 bract/scale; sepals minute, 4-parted, with one segment generally larger than others; petals 0; stamens 2.

Pistillate (female) flowers: Flower subtended by 3-lobed bract/scale; sepals minute, 4-parted, with one segment generally larger than others; petals 0; pistil 1; styles 2.

Fruit: Winged samara in cone-like spike infructescence; 0.8-2 in. (1.9-5 cm) long; each fruit/nutlet subtended by 3-lobed bract/scale; scales mostly glabrous; brown. Samaras having wings narrower than body, broadest near center.

Bark: Young trees reddish-brown to black; smooth. Mature trunk light grayish brown to dark brown to nearly black; smooth; close, not freely exfoliating. Older trees furrowed and broken in to shallow, large, irregular scales. Twigs having odor and taste of wintergreen; reddish-brown to ashy gray; glabrous to sparsely pubescent; usually covered with small resinous glands.

Roots: *Need info.

Habitat: *Betula lenta* grows best on moist, well-drained, soils, but also lives on sites having rocky coarse-textured, drier, sandy or clay, or shallow soils. It prefers the moist and protected north or east slopes. It is intolerant of shade. Seedlings develop best when under light shade.

Species distribution in US states: AL, CT, DE, GA, KY, MA, ME, NC, NH, NJ, NY, OH, PA, RI, SC, TN, VA, VT, WV

Species images:

Whole plant:

<http://www.cnr.vt.edu/DENDRO/dendrology/syllabus/factsheet.cfm?ID=11>

<http://www.duke.edu/~cwcook/trees/bele.html>

<http://www.cas.vanderbilt.edu/bioimages/biohires/b/hbele--wp38151.JPG>

Bark:

http://plants.usda.gov/java/largeImage?imageID=bele_006_avp.tif

younger and older bark:

<http://www.hort.uconn.edu/Plants/b/betlen/betlen1.html>

<http://www.cas.vanderbilt.edu/bioimages/species/frame/bele.htm>

<http://www.duke.edu/~cwcook/trees/bele.html>

Leaf:

<http://www.forestryimages.org/images/768x512/5350048.jpg>

<http://www.cnr.vt.edu/DENDRO/dendrology/syllabus/factsheet.cfm?ID=11>

http://msuplants.com/images/Betula/Betulent_LF01_Aug31.jpg

leaf and underside:

<http://www.cas.vanderbilt.edu/bioimages/biohires/b/hbele--lf38140.JPG>

Colored leaves:

<http://www.hort.uconn.edu/Plants/b/betlen/betlen1.html>

Buds:

<http://www.cnr.vt.edu/DENDRO/dendrology/syllabus/factsheet.cfm?ID=11>

Staminate (male) flowers:

<http://www.cnr.vt.edu/DENDRO/dendrology/syllabus/factsheet.cfm?ID=11>

<http://www.hort.uconn.edu/Plants/b/betlen/betlen1.html>

Pistillate (female) flowers:

http://msuplants.com/images/Betula/Betulent_OF01_Jul16_FemaleCatkins.jpg

<http://www.westernpawildflowers.com/html/Species.asp?SPID=851&LET=>

Fruit:

http://plants.usda.gov/java/largeImage?imageID=bele_003_ahp.tif

<http://www.duke.edu/~cwcook/trees/bele.html>

<http://www.westernpawildflowers.com/html/Species.asp?SPID=851&LET=>

winged-seeds:

http://plants.usda.gov/java/largeImage?imageID=bele_004_ahp.tif

Expected timing of growth stages:

Germination: Spring.

Flowering: April-May.

Bud break/Leaf out: *Need info. Flowering occurs before leaves emerge.

Leaf/canopy development: *Need info.

Fruit ripening: Mid-August to September.

Seed dispersion: Mid-September to November.

Leaf coloration: *Need info.

Leaf fall: *Need info.

Flower formation: Male catkins initiate in the late summer or autumn; over-winter; elongate in the spring.

Phenophases to be monitored for NPN:

Flowering

- *First pollen released* [**Intensive only**]

In at least 3 locations on the plant, pollen is released from a flower when gently shaken or blown. For *Betula lenta*, the male flowers from which pollen is released are arranged on catkins. Where catkins are out of reach, pollen release may be estimated by observing the degree of catkin elongation and looseness. Once the initially compact catkins have unfolded and are hanging loosely, pollen will be released.

Leaf out

- *First leaf*
In at least 3 locations on the plant, the very first green tip of a young leaf has visibly moved out of the leaf bud.

Leaf elongation

Note: These measures can be difficult to estimate without a few seasons of practice.

- *25% leaf elongation [Intensive only]*
The majority of young leaves have unfolded completely and have expanded to one-quarter (25%) of their mature size. Leaf elongation may also be estimated by viewing the canopy as a whole. At 25% leaf elongation, the canopy appears to be approximately one-quarter (25%) full.
- *50% leaf elongation [Intensive only]*
The majority of young leaves have unfolded completely and have expanded to half (50%) of their mature size. Leaf elongation may also be estimated by viewing the canopy as a whole. At 50% leaf elongation, the canopy appears to be approximately half (50%) full.
- *75% leaf elongation*
The majority of young leaves have unfolded completely and have expanded to three-quarters (75%) of their mature size. Leaf elongation may also be estimated by viewing the canopy as a whole. At 75% leaf elongation, the canopy appears to be approximately three-quarters (75%) full.
- *Full leaf elongation [Intensive only]*
The majority of young leaves have unfolded completely and have expanded to 95-100% of their mature size. At full leaf elongation, the canopy appears to have reached its full density.

Fruit ripening

- *First fruit ripe*

In at least 3 locations on the plant, a fruit has become ripe. In *Betula lenta*, a good test for ripeness is fruit drop; mature cones will release winged nutlets into your hand when touched or gently handled. Ripeness may also be indicated by the presence of at least 3 nutlets on the ground below the plant (that are not apparently from a nearby tree).

- *50% of fruit ripe [Intensive only]*
For the whole plant, half (50%) of the fruits are ripe. In *Betula lenta*, this occurs when half (50%) of the nutlets have dropped.
- *All fruit ripe [Intensive only]*
For the whole plant, virtually all (95-100%) of the fruits are ripe. In *Betula lenta*, this occurs when all (95-100%) of the nutlets have dropped.

Leaf color change

Note: If drought seems to be the cause of leaf color change for a plant, please make a comment about it for that plant.

- *First leaf colored [Intensive only]*
In at least 3 locations on the plant, the green leaves have begun to change to their late season colors.
- *25% of leaves colored [Intensive only]*
For the whole plant, one-quarter (25%) of the leaves (including any that have fallen to the ground) have changed to their late season colors.
- *50% of leaves colored*
For the whole plant, half (50%) of the leaves (including any that have fallen to the ground) have changed to their late season colors.
- *75% of leaves colored [Intensive only]*
For the whole plant, three-quarters (75%) of the leaves (including any that have fallen to the ground) have changed to their late season colors.
- *All leaves colored*
For the whole plant, virtually all (95-100%) of the leaves (including any that have fallen to the ground) have changed to their late season colors and there is virtually no green left in the leaves.

Leaf fall

Note: If drought seems to be the cause of leaf fall for a plant, please make a comment about it for that plant.

- **First leaf fallen [Intensive only]**
In at least 3 locations on the plant, a leaf easily falls off into your hand when touched or gently handled. First leaf fallen may also be indicated by the presence of at least 3 leaves on the ground below the plant (that are not apparently from another individual nearby).
- **25% of leaves fallen [Intensive only]**
For the whole plant, one-quarter (25%) of the leaves have fallen.
- **50% of leaves fallen**
For the whole plant, half (50%) of the leaves have fallen.
- **75% of leaves fallen [Intensive only]**
For the whole plant, three-quarters (75%) of the leaves have fallen.
- **All leaves fallen**
For the whole plant, virtually all (95-100%) of the leaves have fallen.

Did you know? *Betula lenta* is a valuable source of timber, used for furniture, furnishings, handles, interior doors, fuel, and pulp. Formerly, it was the chief source commercially of wintergreen oil, used for flavoring, medicines, and as a preservative. Many Native Americans used this plant medicinally and also as a food. Birch beer is made from the sap of this tree, but the sap can be made into an unfermented drink. Wildlife browse on twigs and young leaves, and birds and other species eat the seeds, buds, and flowering catkins.

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http://plants.usda.gov/java/largeImage?imageID=bele_003_ahp.tif

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Notes

The USDA PLANTS symbol for this plant is BELE.
The ITIS Taxonomic Serial No. for this species is 19487.

BBCH codes for phenophases used for this plant are available from the USA-NPN office upon request.

Proposed modifications, updates or corrections to this protocol are welcome; please direct correspondence to the USA-NPN National Coordinating Office.

Prior versions of this species protocol will be made available in a documents library on USA-NPN webpage.

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