

Sambucus nigra

Caprifoliaceae family

Elderberry, black elderberry, common elderberry, elder, American black elderberry, blue elderberry, Arizona elderberry, sweet elder, wild elder, New Mexican elderberry, velvet-leaf elder, hairy blue elderberry, dwarf elder, European black elderberry

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Description: *Sambucus nigra* is a short-lived, multi-stemmed (less commonly single-stemmed), deciduous shrub to small tree. Flowers are insect pollinated. Seedlings reach reproductive maturity in 2-4 years. Reproduction is by seed and vegetatively by sprouting. Sprouting can occur from the root crown and roots if stems are damaged or disturbed.

Variation: *Sambucus nigra* has several recognized subspecies, having overlapping distribution. One subspecies (*Sambucus nigra* ssp. *nigra*) is an introduced taxon. Cultivars have been developed in the horticultural trade.

Size: Grows to 6.5-26 ft. (2-8 m) tall; generally as wide as tall.

Leaves: Leaves opposite, odd-pinnately compound, stipulate or stipules absent; petiolate, petiole 1.6-3.5 in. (4-9 cm) long. Leaf blade/lamina 1.2-12 in. (3-30.5 cm) or more long, odd-pinnately compound, 5-11 leaflets; leaflets elliptical to broadly or narrowly lanceolate, 2-8 in. (5-20 cm) long, 1-2.75 in. (2.5-7 cm) wide, lower leaflets sometimes 3-lobed, margins serrate to crenate-serrate, apex acute to acuminate to abruptly acuminate, upper surface dark green, smooth; lower surface paler, glabrous to soft-pubescent; petiolulate, sessile to 0.2 in. (0.5 cm) or more long.

Inflorescence: A terminal compound cyme, more or less flat-topped; up to 1.6-12 in. (4-30.5 cm) across, with many tiny flowers. Infructescence usually drooping.

Flowers: Flowers perfect, approximately 0.1-0.3 in. (0.4-0.7 cm) in diameter; calyx tube 0.04 in. (0.1 cm) long, calyx lobes 5, acute to absent; corolla lobes 5, white to cream, apex rounded; stamens 5; pistil 1, style 1 short to wanting, stigma 5-lobed.

Fruit: A drupe, berry-like; globose, 0.06-0.25 in. (0.2-0.6 cm) in diameter, juicy/fleshy, glabrous, dark blue- or purple-black, often covered with a white bloom (glaucous) appearing blue; nutlets/seeds 3-5, yellow.

Bark: Bark is grayish-brown to black, with raised lenticels; becoming shallowly furrowed and rough with age. Twig stout, silver to yellow-gray to brown, often glaucous, with conspicuous lenticels.

Roots: A thick taproot with fibrous, spreading, lateral roots.

Habitat: *Sambucus nigra* grows in moist woodlands, thickets, along streambanks and in riparian areas, fence rows, ditches, travel corridors, and in open places preferring moist, well-drained, sunny sites. It can grow on a wide range of soil types, but prefers loam and sandy loam soils. It is mostly shade intolerant.

Species distribution: AL, AR, AZ, CA, CO, CT, DC, DE, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY

Species images:

Whole plant:

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=6259+3022+1591+0002

<http://www.forestryimages.org/images/768x512/1359054.jpg>

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=0000+0000+1202+1077

seedling: <http://www.forestryimages.org/images/768x512/1556019.jpg>

<http://www.forestryimages.org/images/768x512/1556010.jpg>

<http://www.forestryimages.org/images/768x512/1553085.jpg>

Bark:

<http://www.cas.vanderbilt.edu/bioimages/biohires/s/hsanic4br25625.JPG>

<http://www.cnr.vt.edu/DENDRO/dendrology/syllabus/factsheet.cfm?ID=85&&&>

twig: <http://www.cas.vanderbilt.edu/bioimages/biohires/s/hsanic4tw26714.JPG>

Branch: *Need photo.

Leaf:

<http://www.forestryimages.org/images/768x512/1553081.jpg>

<http://www.forestryimages.org/images/768x512/1553080.jpg>

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=0000+0000+0508+2293

underside: <http://www.hort.uconn.edu/plants/s/samcan/samcan03.jpg>

leaf expansion: http://plants.usda.gov/java/largeImage?imageID=sani4_004_avp.jpg

Buds:

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=0000+0000+0106+0453

flower/inflorescence bud development:

http://plants.usda.gov/java/largeImage?imageID=sani4_004_avp.jpg

Inflorescence:

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=0000+0000+0906+0643

<http://www.cas.vanderbilt.edu/bioimages/biohires/s/hsanic4flinfor12192.JPG>

<http://www.cas.vanderbilt.edu/bioimages/biohires/s/hsanic4flinfor-mature12190.JPG>

Flowers:

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=0000+0000+0906+0646

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=0000+0000+0906+0645

http://www.missouriplants.com/Whiteopp/Sambucus_canadensis_page.html

Fruit:

developing:

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=0000+0000+0508+0298

<http://www.forestryimages.org/images/768x512/1556009.jpg>

mature:

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=0000+0000+0906+0647

<http://www.cas.vanderbilt.edu/bioimages/biohires/s/hsanic4frcloseup15688.JPG>

<http://botany.cs.tamu.edu/FLORA/dcs420/c/hdw190898vs.jpg>

mature, glaucous:

http://calphotos.berkeley.edu/cgi/img_query?query_src=photos_index&enlarge=8253+3202+4138+0092

Seeds:

<http://www.forestryimages.org/images/768x512/1556013.jpg>

Expected timing of growth stages:

Bud break/Leaf out: April-June, depending on location.

Flowering: May-September, depending on location.

Leaf/canopy development: Full grown by early to late June, depending on location.*Need info.

Fruiting ripening: July-October, depending on location.

Leaf color: Late August. *Need info.

Leaf fall: September-October. *Need info.

Phenophases to be monitored for NPN:

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.

Flowering

- *First flower*
In at least 3 locations on the plant, a flower has opened completely. Flowers are considered 'opened' when the reproductive parts are visible between unfolded or opened flower parts.
- *Full flower [Intensive only]*
The plant has reached its peak floral display. This occurs when half (50%) of the flowers on the whole plant have opened completely.
- *Last flower*
The last visible flower has opened completely and is still fresh.

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 *Sambucus nigra*, a berry is considered ripe when it is dark blue to purple-black in color or when it has been eaten by wildlife.
- *50% of fruit ripe [Intensive only]*
For the whole plant, half (50%) of the fruits are ripe.
- *All fruit ripe [Intensive only]*
For the whole plant, virtually all (95-100%) of the fruits are ripe.

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? *Sambucus nigra*'s fruit is used to make wine, jellies, candy, pies, and sauces. It is used in aromatic distilled water, and in flavoring lard. Its wood is used to make combs, spindles, mathematical instruments, blowguns, and flutes and whistles. Its bark is used to make a dye. Its leaves used for insecticide. And it is used medicinally. Despite its extensive human use, several parts of the plant and its unripe fruit contain a poisonous alkaloid and cyanogenic glycoside which needs to be considered when using the various taxa within this species.

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<http://www.cnr.vt.edu/DENDRO/dendrology/syllabus/factsheet.cfm?ID=254>

Notes

The USDA PLANTS symbol for this plant is SANI4.
The ITIS Taxonomic Serial No. for this species is 35324.

BBCH codes for phenophases used for these plants 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.

USA-NPN Plant Phenology Protocol, *Sambucus_nigra_v1.0(beta).doc*

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

Document history: V1.0(beta) 08/20/08

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