

Black Hills Spruce



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(*Picea glauca*
var. densata)

General Description

A large tree, very dense and pyramidal when young. Not as drought tolerant as Colorado Spruce. Black Hills Spruce is a naturally occurring variety of white spruce native to South Dakota. Better adapted than White Spruce (*Picea glauca*) which is native in the eastern United States, as far west as Minnesota. The largest spruce tree in North Dakota is 95 feet tall with a canopy spread of 42 feet.

Leaves and Buds

Bud Arrangement - Whorls.

Bud Color - Chestnut brown scales, blunt tips, not resinous.

Bud Size - Buds are about 1/4 inch long.

Leaf Type and Shape - Needles attached individually on peglike projections called sterigmata.

Leaf Margins - Quadrangular in cross-section.

Leaf Surface - Slightly glaucous, 2 to 3 stomatal lines above, 3 to 4 on lower surface.

Leaf Length - 1/3 to 3/4 inch.

Leaf Width - 1/16 inch needles.

Leaf Color - Variably green and glaucous.

Flowers and Fruits

Flower Type - Moneocious, separate male and female strobili.

Flower Color - Female strobili are greenish to purplish; male are tan to pale red.

Fruit Type - Cone length 1½ to 2 inches long. Cone scales have a rounded, smooth margin; small winged seed.

Fruit Color - Brown cones, tannish seeds.

Form

Growth Habit - Long stout branches from ground up form a broad pyramidal to conical crown, compact ascending branches, denser growth form than species.

Texture - Medium, summer and winter.

Crown Height - 30 to 60 feet.

Crown Width - 15 to 25 feet.

Bark Color - Ash brown, scaly or flaky bark.

Root System - Shallow, fibrous, and wide spreading.

Environmental Requirements

Soils

Soil Texture - Grows best on moist loams.

Soil pH - 4.0 to 7.5.

Windbreak Suitability Group - 1, 3, 4, 5.

Cold Hardiness

USDA Zone 2.

Water

Fairly drought resistant. Needs additional moisture during droughts.

Light

Full sun.

Uses

Conservation/Windbreaks

Medium to tall evergreen for farmstead and field windbreaks.

Wildlife

Browsed by mammals. Nesting site for birds. Makes a good winter cover.

Agroforestry Products

Wood - Used for dimension lumber, pulpwood and Christmas trees.

Urban/Recreational

Good yard or ornamental tree. Used singly or in group plantings in recreation areas and public grounds.

Cultivated Varieties

Dwarf Alberta Spruce (*Picea glauca* 'Conica') - Dwarf, compact form, very subject to winterburn and spider mites.

Related Species

Norway Spruce (*P. abies*)

Colorado Spruce (*P. pungens*)

Pests

Common diseases include Lirula needle blight. White spruce is less affected than Colorado Spruce by Rhizosphaera needle cast and Cytospora canker. Common insect pests include spider mite, spruce needle miner, pine needle scale, yellow-headed spruce sawfly, and aphids.