

# Rocky Mountain Douglas-fir



# Rocky Mountain Douglas-fir (*Pseudotsuga menziesii* *var. glauca*)

## General Description

A large forest tree native to the Rocky Mountains. Very important tree in the lumber industry. Merits further testing for adaptability to the Northern Plains environment. The largest tree in North Dakota is 69 feet tall with a canopy spread of 24 feet.

Leaves and Buds

Bud Arrangement - Whorls.

Bud Color - Shining chestnut brown, mostly resinous at base.

Bud Size - 1/2 inch long, ovoid-conical, apex sharp-pointed, imbricate.

Leaf Type and Shape - Flat needles arranged spirally, attached to twigs singly.

Leaf Margins - Straight, smooth.

Leaf Surface - Smooth, flattened.

Leaf Length - 1 to 1½ inches.

Leaf Width - Needles.

Leaf Color - Dark blue-green above, with 2 white bands of stomata beneath.

Flowers and Fruits

Flower Type - Monoecious, on two year old wood.

Flower Color - Male flowers, rose-red.

Fruit Type - Oval cones, pendulous, 2 to 4 inches long, readily identified by their three-lobed bracts which extend beyond the cone scales.

Fruit Color - Purplish-green cones ripen to brown, seed color brown.

Form

Growth Habit - Pyramidal, with stiff straight branches; the lower drooping, the upper ascending, dense in youth becoming open with age.

Texture - Medium, summer and winter.

Crown Height - 40 to 70 feet.

Crown Width - 20 to 30 feet.

Bark Color - Yellowish-green initially becoming gray to brown. On young stems smooth except for resin blisters; mature trunks divided into thick reddish-brown ridges separated by deep irregular fissures, bark becomes thick.

Root System - Fibrous spreading.

## Environmental Requirements

Soils

Soil Texture - Prefers well-drained, moist loams.

Soil pH - 5.5 to 7.5.

Windbreak Suitability Group - 1, 3.

Cold Hardiness

USDA Zone 3.

Water

Prefers adequate moisture to do well. Does not withstand ponding. Planting near Bowman, North Dakota, has survived drought of the 1980s.

Light

Full sun.

## Uses

Conservation/Windbreaks

Medium to tall conifer for farmstead windbreaks.

Hardy seed sources currently under evaluation.

Wildlife

Red grouse, crossbill, pine siskin, mice and shrews utilize seeds. Antelope, deer, elk, mountain goats, and mountain sheep feed on twigs and foliage.

Agroforestry Products

Wood - Joinery, plywood, flooring, sleepers, construction lumber. Important Christmas tree since it retains its needles better than true firs and spruce.

Medicinal - Used to treat mouth sores.

Urban/Recreational

Useful for specimen, group, and mass plantings.

## Cultivated Varieties

Upright Douglas-fir (*Pseudotsuga menziesii* 'Fastigiata') - A narrow, erect selection. Nice specimen in McCrory Gardens, SDSU, Brookings, South Dakota.

## Related Species

Balsam Fir (*Abies balsamea*)

Black Hills Spruce (*Picea glauca* var. *densata*)

Colorado Spruce (*Picea pungens*)

White Fir (*Abies concolor*)

## Pests

No major pests in North Dakota.