



United States Department of Agriculture

'Spike'

hybrid poplar

Populus deltoides Bartr.
Ex Marsh x *Populus*

A Conservation Plant Release by USDA NRCS Big Flats Plant Materials Center, Corning, New York



'Spike' hybrid poplar (*Populus deltoides* Bartr. Ex Marsh x *Populus nigra* L.) is a cultivar released in 1997 by the USDA Natural Resources Conservation Service (NRCS), Big Flats Plant Materials Center, in cooperation with the Institute for Forestry and Nature Research (IBN-DLO), Forest Gene Conservation Association, and the State University of New York College of Environmental Science and Forestry for its resistance to canker and sufficient resistance to Marssonina leaf spot and Melampsora rust.

Description

'Spike' hybrid poplar is a cross between *Populus deltoides*, from Belgium, and *Populus nigra*, from Rynsteeg, Netherlands. It is a very fast growing deciduous tree reaching heights between 50'-80'. It has a long straight cylindrical trunk with a relatively narrow open crown of ascending slender branches. The bark is smooth and brownish-green when young, but dark and deeply fissured when mature. The twigs are hairless, brownish-green or gray, sharply angled with an abundance of prominent lenticels. The buds are brown, glabrous, and ½ inch long. The upper surface of the leaves is yellowish-green, and the lower surface is glaucous and green with serrated margins. The leaves remain on the branches late into the fall. It is a male clone, so 'Spike' hybrid poplar will not spread by seed.

Source

'Spike' hybrid poplar (PI-594370) is a hybrid of which one parent was *Populus deltoides* belonging to the Poplar Breeding Institute at Garmmont, Belgium (S4-231). This poplar was obtained from a U.S. provenance trial, origin unknown; and the other parent is an indigenous *Populus nigra* from Rynsteeg, Holland. The *Populus deltoides* parent was selected due to resistance to canker. The seedlings were inoculated with Melampsora rust and Marssonina their 1st year. The selected seedlings in the 2nd year were inoculated with bacterial canker in 2 places with a knife. The 3rd year it was evaluated for leaf disease and bacterial canker in replicated trials. It was found that the selected clone is resistant to Marssonina, resistant to certain strains of Melampsora, and intermediately resistant to bacterial canker.

'Spike' hybrid poplar was evaluated with 42 other clones, which included experimental and commercial hybrids obtained from SUNY College of Forestry, the Ontario Ministry of Natural Resources, and commercial sources. It was found that 'Spike' hybrid poplar was superior to the other clones in this study.

'Spike' hybrid poplar was originally selected by the Institute for Forestry and Nature Research, and given the name 'Spijk'. In addition to European evaluations, this clone has been tested in Ontario, Canada.

Conservation Uses

'Spike' hybrid poplar is used for biomass production or for fuel wood production due to its fast growth, dominant main stem maintaining its diameter high into the crown and canker resistance.

'Spike' hybrid poplar can also be used as an effective screen and as a windbreak in conjunction with other species. It can also be used as a short rotational woody crop in agro-forestry systems.

Area of Adaptation and Use

'Spike' hybrid poplar grows well in clay loam, sandy loam and peat soils. It has been noted to do well on wetter sites than some other clones tested by the Ontario Ministry of Natural Resources.

'Spike' hybrid poplar is hardy to zone 2a (-35° F to -50° F) with a range from New Hampshire to northern Florida, central Texas and west to Kansas. It is recommended for use in the Northeast US.

Please consult the USDA PLANTS database for current distribution.

Establishment and Management for Conservation Plantings

'Spike' hybrid poplar can be established at sites that are prepared utilizing plowing and disking as well as weed control. In New York State, site preparation must begin a year prior to planting, because sites tend to be too wet to allow access with equipment early enough in the spring for successful establishment.

Mechanical preparation combined with weed control has proven to be more effective in the Northeast than mechanical preparation alone. Unrooted cuttings will produce a tree of 3-4 feet high within the first season if a weed free area is kept. To establish rooted plants, a hole, 9 inches wide and 15 inches is recommended. Trees will produce heights of up to 7 feet in the first year.

Small, 12" cuttings must be planted so that only 2" is showing above ground. In most situations, 18" long cuttings are the best option and will produce a tree, 3'-5' high in the first growing season. When establishing longer cuttings, a dibble bar needs to be used to produce a hole larger enough to fit the cutting. Tamping the soil around the hole, will produce good plant to soil contact for best establishment.

Weed Control

Controlling competing weed species is important. Weeds compete with hybrid poplars for light as well as nutrients. Pre-emergence herbicides or other forms of weed control such as mulches should be utilized. Trickle irrigation, if available, is recommended in the establishment year.

Ecological Considerations

'Spike' hybrid poplar poses no significant environmental hazards and has little insect or disease problems.

Seed and Plant Production

'Spike' hybrid poplar cuttings can be established for propagation in woody beds, spaced 2-3 inches apart. Rooted cuttings are planted as early in the spring as possible, when the ground has thawed. In planting areas with high winds, 'Spike' should be protected by other wind-proof species.

Availability

For conservation use: 'Spike' hybrid poplar is commercially available.

For seed or plant increase: Nursery owners may obtain propagated material from the USDA NRCS, Big Flats Plant Materials Center, Corning, New York, to start their commercial production.

For more information, contact:
USDA NRCS Big Flats Plant Materials
Center

3266 State Route 352
Corning, New York 14830
607-562-8404 (phone)
1-855-401-1955 (fax)

<http://plant-materials.nrcs.usda.gov/nypmc/>

Citation

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For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov>>

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