



Morton Germplasm Shrub Willow

Salix koriyanagi Kimura ex Goerz

A Fact Sheet from the Jamie L. Whitten Plant Materials Center



Morton Germplasm Shrub Willow

The Jamie L. Whitten Plant Materials Center (PMC) released Morton Germplasm shrub willow as a tested class release in 2001 for stream bank stabilization and ornamental uses. It is currently available for commercial production.

Salix koriyanagi is native to Korea, but is widely grown by the Japanese for use in basketry. The original source material of Morton Germplasm came from the Morton Arboretum in Lisle, Illinois. Prior derivation of this material is unknown. It has been grown at the PMC since the mid 1960's and has been tested in a limited number of field plantings.

The ability of Morton Germplasm to regrow rapidly after periodic close mowing or pruning makes it ideal for

soil bioengineering systems to control erosion along stream banks. Plants respond to cutting by resprouting from the base of the plant, but do not generally form root suckers. It is shorter than the native black willow (*Salix nigra* Marsh.) commonly found along streams in the southeastern United States and therefore is not as prone to toppling into and clogging channels when undercut. It can be used with hard structures, such as rip-rap, or, on less erosive sites, it can be planted alone or in combination with other plant species. It is too large to use on very small or intermittent streams.



Bioengineering with Morton Germplasm

It also has merit as an ornamental. The erect, graceful growth habit and attractive young leaves and flowers are sources of its visual appeal. Its wildlife

**United States
Department of
Agriculture**

**Natural Resources
Conservation
Service**

**Jamie L. Whitten
Plant Materials
Center**

Coffeerville, MS

**Fact Sheet No. 3
October 2001**

**This Fact Sheet
is part of a contin-
ing series of infor-
mation bulletins on
plant materials and
their role in the
conservation of our
natural resources.**

- **Tested class release in 2001**
- **For soil bioengineering**
- **Ornamental**
- **Available for nursery increase**



benefits have not been thoroughly documented, but it can serve as nesting sites for birds and as cover for other species. Shrub-type willows used in bioengineering applications suffer from livestock grazing and plantings may require protection during establishment.

Description

Morton Germplasm is a large, upright, multi-branched shrub, which can reach 13 feet at maturity. Young branches are slender, shiny, very flexible, pale green in color and yellowish under the bark. Bark on older stems is yellowish-gray. Leaves are either opposite or alternate, 2 to 4 inches long, narrow, and slightly toothed along the edges. They will be shades of pale pink and brown when emerging. Flowers are produced from February to March. Male and female flowers are held in separate densely flowered, cylindrical catkins. The stamens of the male flowers are dark purple when the flowers first open, becoming red, orange, and then yellow.



Early spring growth

Adaptation

Because this plant has only been tested in limited areas, the full extent of its range of adaptation is not known. Morton Germplasm can likely be used successfully in most areas of the Southeast and Mid-Atlantic States, with additional potential for southern portions of the Midwest. It can be grown on most soils, with the possible exception of

extremely coarse-textured ones. Best growth will be on moist soils with at least medium fertility levels.

Establishment

Morton Germplasm can be established on the planting site using unrooted or one year old rooted cuttings or using live fascines (bundles of dormant whips). Survival will generally be higher if rooted cuttings are used, but unrooted cuttings are easier to plant. Live fascines require more plant material than cuttings, but provide greater erosion protection. Pre-plant grading will be required if the site is located on a severely eroded stream bank.



Bundles of unrooted cuttings ready for planting

Cuttings should be taken in late winter to early spring, before the leaves emerge. They should be made from fresh growth and measure 3/8 to 1/2 inches in diameter at the basal end and 12 to 15 inches in length. Unrooted cuttings should be planted vertically in the same orientation as they were cut from the parent plant. Plant cuttings deeply enough so that only 1 to 2 inches of the stem is protruding above the ground. A dibble or rod can be used to make the planting hole, but the soil must be firmly tamped around the stem to ensure that no air pockets remain. Rooted cuttings are planted in a similar manner. The planting hole must be large enough to accommodate the roots when fully spread and should be deep enough to plant the cuttings at the same depth as

they were planted when rooted. All cuttings should be planted 3 to 4 feet apart in similarly spaced rows starting just above the edge of the water or rip-rap and extending to the top of the bank. Staggering the cuttings to form a diamond pattern is recommended. Mulch, erosion control mats, or critical area seed mixtures may be required on highly erosive sites to stabilize the soil until the willows become established.



Preparing live fascines for planting

Live fascines, also called wattles, are cigar-shaped bundles of cut stems, 6 to 10 feet long, arranged so that approximately half the butt ends of the stems are on each end of the bundle. The bundle should be approximately 8 to 10 inches in diameter and should be tied securely with baling twine. Fascines are planted horizontally in shallow trenches, spaced 3 to 6 feet apart, dug parallel to the slope beginning at the base. The ends of adjacent bundles should overlap to maintain a constant diameter along the trench. Stakes in front of the trench and placed through the bundles hold the fascines in place. They are then covered with soil that is firmly tamped down. Mulch or erosion control mats can be used in the area between the fascines if needed.

Maintenance

Fencing may be required on young plantings to prevent animal trampling or grazing. Stream bank conditions should be monitored regularly and needed repairs made to prevent damage to the plants and limit accelerated erosion. Replant-

ing may be required if plant losses should occur. Established plantings require minimal care. Plants will not tolerate frequent mowing, but mowing at 3 to 4 year intervals will not adversely affect the plant's natural growth habit.

Fertilizer applications are not generally recommended unless an erosion control seed mixture is planted in combination with the willows. Follow recommended application rates and timing for the seed mixture planted.

Environmental Concerns

The upright growth habit indicates that Morton Germplasm would not be prone to spread naturally by layering; however, it could potentially spread by seed. The short-term viability of the seeds and the requirement for specific germination conditions do not suggest that this plant would

become invasive when used as recommended, but plantings may require monitoring to prevent seedling encroachment into unwanted areas. Seedlings can be controlled mechanically or by use of common brush control herbicides. Read and follow label directions when applying herbicides.



Root and shoot growth along live fascine

Pests

No major insect or diseases have been noted on Morton Germplasm plants growing at the PMC. It appears to be resistant to canker diseases that have severely affected many domestic plantings of 'Bankers' and 'Streamco', the two dwarf willows most commonly recommended for bioengineering systems.

For More Information

For more information on availability and use of Morton Germplasm shrub willow or other conservation plants, contact the PMC or your local USDA NRCS office, which can be found in the telephone directory under US Government, USDA Service Center.

Additional information on using plants to solve conservation problems can be found on the Plant Materials Internet site at <http://Plant-Materials.nrcs.usda.gov> or the PLANTS database at <http://plants.usda.gov>.

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