

# *Microbiota decussata*: A Versatile Conifer

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**M***icrobiota decussata* is an elegant, low-growing evergreen shrub that is finding its way into more gardens every year. Its combination of graceful form, attractive foliage, cold hardiness, and landscape value earned it a 1998 Cary Award, which annually honors outstanding woody plants for New England gardens. *Microbiota decussata* has gained favor well beyond New England, however, and gardeners in many states may find it an excellent addition to their landscapes.

This unique conifer has a remote and limited native range: the Sikhote Alin mountain range in the southeastern leg of Siberia, bordering the Sea of Japan. It is often found growing above the treeline, frequently in association with *Pinus pumila*, a shrubby pine species, and in shrubland areas in the upper mountain valleys of the region. The species was first recorded by botanist I. K. Shishkin in 1921, in the mountains northeast of Vladivostok, and named by botanist V. L. Komarov in 1923.

Despite being discovered and named over 80 years ago, *Microbiota decussata* is often described in garden catalogs as “new” or “recently discovered.” This claim is actually not so far off, since there was a significant lag between the plant’s discovery and its introduction to gardeners in North America. The species was not mentioned in *Hortus Third*, the 1976 edition of the venerable tome that lists cultivated plants of the U.S. and Canada. It has slowly become more available in the nursery trade over the past 20 years, however, and is clearly now here to stay.

*Microbiota decussata* is the lone species in its genus, but it is not without relatives. It belongs to the cypress family, a wide-ranging group of coniferous trees and shrubs that includes well-known evergreen genera like *Juniperus*, *Thuja* (arborvitae), and *Chamaecyparis* (false cypress). Taxonomically, *M. decussata* is perhaps most similar to *Platyclusus orientalis* (oriental

arborvitae), but the two are different enough to maintain their separate designations.

With a height at maturity averaging only ten to eighteen inches in most landscape plantings, the plant’s low, widespreading form resembles that of spreading junipers. (Interestingly, native Siberian specimens with heights ranging from eight inches to over three feet have been reported, indicating that it may be possible to select shorter or taller types from wild populations.) Many long stems radiate horizontally from the plant’s crown, creating a spread that can reach ten feet or more. As these main stems grow outward, numerous gently arching secondary branches rise from them, developing first near the center of the plant. Since all of *Microbiota decussata*’s branch tips nod downward, the result is a wonderfully graceful, softly layered appearance. The nodding branch tips are characteristic of the species and make it easy to differentiate it from spreading junipers, whose branch tips tend to flare upward.

The individual branchlets of *Microbiota decussata* are arranged in lacy, fernlike sprays, much like those of arborvitae; no doubt this accounts for another common name for the plant, “Russian arborvitae.” The branchlets are covered with closely pressed, scale-like needles arranged in opposite pairs. The pairs emerge at 90-degree angles from each other, resulting in a neatly layered, four-ranked arrangement termed *decussate*—hence the plant’s specific epithet *decussata*. The individual needles are tiny (one-eighth inch or less), with convex outer surfaces, a triangular shape, and tips that feel slightly sharp when you run a finger down the branchlet backwards, from tip to base.

The foliage can safely be described as a pleasant bright green during the growing season but describing its winter color is a highly subjective exercise. Those who don’t like the plant use terms like “dull brown” or “dirty purplish



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brown" while those who find it appealing describe the color as anything from "magnificent copper" to "rich bronze" or "burgundy purple." Beauty (and color descriptions) are clearly in the eye of the beholder. Plants grown where they are shaded during the winter show less bronzing than those in full sun. Some plants seem to green up more quickly than others in the spring; perhaps in the future nursery growers should select for this trait in new cultivars.

Being a conifer, *Microbiota decussata* does of course bear cones, but they are so small as to be hardly noticeable. Male and female cones occur on the same plant—in other words, it is monoecious. The male cones are the smaller, about one-sixteenth to one-eighth inch long; they release pollen in the spring. Female cones, about one-eighth inch long, consist of a single naked seed held within two to four leathery scales; the seeds mature in late summer or early autumn.

It is a very cold hardy plant, surviving through USDA zone 3 (average annual minimum temperature minus 30 degrees to minus 40 degrees F). In fact, it seems to prefer cooler climates and may fail to thrive in areas warmer than USDA zone 6. Excellent soil drainage is a must, but as long as the site is well drained the plant can adapt to a range of soil types and pH levels. It grows well in evenly moist soil, but once established it also tolerates drier conditions. An inch or two

of organic mulch—wood chips, shredded bark, or pine needles—applied in a wide circle around the plant will help keep the root zone cool and moist. So far *M. decussata* has not shown susceptibility to *Phomopsis* tip blight, a common disease problem for some of the spreading junipers, and appears to be free of other major disease or insect problems.

When *Microbiota decussata* started to become available in nurseries it was often touted as extremely shade tolerant. This was seen as a great advantage over spreading junipers, which grow poorly and exhibit thinning foliage in shade. More experience with

*M. decussata* has led to modified recommendations, however. It too is prone to limited growth and thinner foliage when grown in dense, full shade, so the better choice seems to be partial shade or full sun exposure. In regions with hot summers this Siberian native appears to benefit from partial shade, especially in the afternoon.

*Microbiota decussata* is usually sold in containers at nurseries and garden centers, but is also available from a number of mail order garden catalogs. While it can be grown from seed, most commercial propagation is by rooted stem cuttings.

This is a plant with multiple uses in the landscape. Because of its low height and wide spread, it makes an ideal evergreen groundcover, its ferny, layered foliage creating a three-dimensional effect that is lacking in many groundcovers. It has a natural affinity for rocks, whether sweeping around the base of a well-placed decorative boulder or spilling over the top of a stone retaining wall. Attractive alone, it also combines well with small deciduous shrubs, herbaceous perennials, and other conifers. Even its bronze winter color shows to advantage when contrasted with the dark green foliage of evergreens, the colorful fruit of shrubs like *Ilex verticillata* 'Red Sprite', or the light tones of ornamental grasses.

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For a note about the author, see page 25.