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GREAT LAKES

CHRISTMAS TREE JOURNAL



survival of live christmas trees

profile: nordmann fir



This Pot-in-Pot nursery in Denmark produces 90,000 to 100,000 container-grown Nordmann fir each year.



Showing the flag. Nordmann fir are marketed in Europe under the "Original Nordmann" label.

Christmas Tree Species Profile: Nordmann fir *Abies nordmanniana*

By: Bert Cregg, Ph.D. Michigan State University, Department of Horticulture and Department of Forestry
Photos by Rick Bates, Ph.D. Pennsylvania State University, Department of Horticulture

One of the great things about working with Christmas trees is that we get to work with some beautiful and fascinating plants. Over the years, many species of pines, spruces, firs, and even cedars have been used as Christmas trees. Each species has its unique appeal and every species has a story. Beginning with this issue of the *Great Lake Christmas Tree Journal*, I will present profiles of interesting Christmas tree species used in the Great Lakes region and elsewhere. I'll discuss the basic biology and ecology of the species, highlight some of the advantages or concerns of the species for Christmas tree production, and throw in a little trivia or other titillating tidbits.

Nordmann fir *Abies nordmanniana*

Beauty, as they say, is in the eye of the beholder, but few can argue that Nordmann fir is among the most beautiful conifers found anywhere. Even famed plantsman Michael Dirr, who is

not given to feint praise, calls Nordmann fir, "stately, elegant, perhaps the handsomest of the firs." Nordmann fir is by far the most popular Christmas tree species in Europe and there is increased interest in the species in the United States. The

popularity of this species is due to several factors. First and foremost are the glossy, dark green needles, which are darker than almost any fir except for grand fir (*Abies grandis*). Nordmann fir needles are directed forward giving the

nordmann fir

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upper surface of the branches a brushed, smooth appearance. There are two distinct white bands of stomata on the underside of the needles, which produces a silvery effect when the undersides of the branches are visible. But the needles are just part of the species' appeal. Nordmann fir has outstanding symmetrical form and a relatively open branch structure with distinct whorls. These traits are valued in the European Christmas tree market where a layered appearance and room for candles are desired. Nordmann fir is a vigorous grower under plantation conditions. European customers, however, do not like sheared trees so growers rely on plant growth retardants or phloem-wounding tools to control leader growth.

Extensive research on the genetics of Nordmann fir has been conducted in Denmark and the Danes have typically favored the Ambrolauria seed source. However, tree improvement testing for U.S. environmental conditions and cultural practices is probably warranted. North Carolina State University geneticist John Frampton notes:

"Ambrolauria has been widely touted as the best source of Nordmann fir in the United States, however, most Americans



Nordmann fir are marketed as 3–4' living Christmas trees in Denmark.

do not realize that this is based on the European preference for slow growth. In reality, other faster growing Nordmann fir sources are likely to be preferable for culture under an American shearing regime". *American Christmas Tree Journal* 43 (2): 4–11.

In its native range, Nordmann occurs on calcareous soils and therefore may tolerate a wider range of pH than other firs. Like most firs, however, Nordmann fir needs adequate drainage for best

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growth. Various sources list Nordmann fir as hardy from zones 4–6 or 4–7. In either case, it is well adapted in most of lower Michigan. In the exotic fir species trial initiated by Dr. Mel Koelling at Kellogg Forest near Battle Creek, Nordmann fir has grown well. In addition, the Nordmann fir trees we transplanted from Kellogg Forest in 2003 continue to do well at our Horticulture Research Stations in East Lansing, Clarksville, and Traverse City. This broad adaptability suggests that Nordmann fir has significant potential as a Christmas tree species in much of Michigan. Nordmann fir also responds well in container production. During the 8th international Christmas Tree Research and Extension Conference in Denmark (see related article in this issue of *Great lakes Christmas Tree Journal*), conference participants toured Gl. Kirstineberg Planteskole, Europe's leading producer of container-grown Nordmann fir. The nursery produces approximately 100,000 three- to four-foot tall Nordmann firs as living Christmas trees each year. The trees are grown in three-gallon containers in a Pot-in-Pot system for up to four years to reach marketable size. The Kirstineberg nursery has worked extensively on their packaging, marketing trees to retail garden centers and as business gifts via direct shipping.

Fast Facts on Nordmann fir:

Native range: The native range of Nordmann fir forms a crescent along the east end of the Black sea in the mountains of Turkey, Georgia and Russian Caucases. It occurs at elevations between 3000 and 7000 feet in areas with rainfall in excess of 40" per year.

Related species: The taxonomy of the Mediterranean firs is muddled due in part to wide variation within species and also hybridization among species. Turkish fir and Trojan fir are closely related to Nordmann fir and are sometimes listed as separate species (*Abies*



Nordmann fir (on left) is also an outstanding ornamental tree as shown by this specimen at the MSU Plant and Soil Sciences building. Photo: Bert Cregg.

Marketing makes it happen. Danish growers work to establish a brand identify for Nordmann fir.



bornmülleriana and *A. equi-trojani*, respectively) or as sub-species or varieties of *Abies nordmanniana*.

Ornamental cultivars: Nordmann fir is an outstanding landscape ornamental as a straight species. In addition, the American Conifer Society's Conifer Database (www.conifersociety.org) lists 14 named cultivars of *A. nordmanniana*, a handful of which are available from specialty nurseries. 'Golden spreader' is a dwarf, spreading form with bright gold foliage. 'Tortifolia' is a conical, intermediate grower (6–12" per year) with upturned needles. 'Prostrata' is a prostrate, ground covering form with dark green needles.

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