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# *Ulmus* ‘Frontier’

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The U.S. National Arboretum presents *Ulmus* ‘Frontier’, an elm tree of moderate stature with attractive red fall color. ‘Frontier’ hybrid elm combines a high level of tolerance to Dutch elm disease, moderate resistance to elm leaf beetle, small leaves, and a lovely red-purple autumn coloration. It is perfect for use in smaller landscapes, along city streets, and under power lines. ‘Frontier’ blazes a trail for elms in the urban landscape.



**U.S. National Arboretum Plant Introduction**  
Floral and Nursery Plants Research Unit

U.S. National Arboretum, U.S. Department of Agriculture, Agricultural Research Service, 3501 New York Ave. NE., Washington, DC 20002





# 'Frontier' hybrid elm

<b>Botanical name:</b>	<i>Ulmus</i> 'Frontier' ( <i>U. minor</i> × <i>U. parvifolia</i> ) (NA 55393; PI 536049)
<b>Family:</b>	Ulmaceae
<b>Hardiness:</b>	USDA Zones 4–10
<b>Development:</b>	'Frontier' is a selection that resulted from controlled pollination of <i>U. minor</i> (as <i>U. carpinifolia</i> ) with <i>U. parvifolia</i> by A. M. Townsend in 1971.
<b>Significance:</b>	'Frontier' represents the first commercial release of an elm cultivar with spring-flowering species ( <i>U. minor</i> ) and fall-flowering species ( <i>U. parvifolia</i> ) as parents. A small- to intermediate-sized tree with unusual red-purple fall color, this hybrid elm exhibits both a high level of disease tolerance to the fungus that causes Dutch elm disease and moderate resistance to the elm leaf beetle in laboratory and field tests. In addition, 'Frontier' appears highly tolerant to natural infections of elm yellows and produces little to no seed. Released 1990.
<b>Description:</b>	<p><b>Height and Width:</b> 25 feet tall and 15 foot crown spread at 19 years under sod culture.</p> <p><b>Habit:</b> Small- to intermediate-sized, single-trunked, upright-pyramidal, deciduous tree. Symmetrical shape. Faster growing than its male parent, <i>U. parvifolia</i>.</p> <p><b>Foliage:</b> Small, glossy, dark green leaves, turning red-purple in fall.</p> <p><b>Bark:</b> Smooth, grey-green with orange lenticels; not exfoliating.</p> <p><b>Fruit:</b> Rarely flowers; no seed production observed.</p>
<b>Culture:</b>	Tolerant of urban conditions. Performed well in diverse locations including California, Ohio, Oregon, Oklahoma and Maryland. Avoid planting close to buildings in areas with high elm leaf beetle populations. Slower growing in sod culture.
<b>Propagation:</b>	Roots easily from softwood cuttings under mist, after treatment with 3000-8000 ppm IBA, in 3-5 weeks. 'Frontier' has also been propagated successfully by tissue culture.
<b>Landscape use:</b>	Excellent medium-sized tree for use under power lines, along parking areas and highways, and in landscape plantings.
<b>Availability:</b>	Readily available from wholesale nurseries and some retail nurseries.

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