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Acer rubrum 'Autumn Spire'¹

Steve McNamara and Harold Pellett
University of Minnesota Landscape Arboretum
Chanhassen, Minnesota 55317

Origin

Open-pollinated *Acer rubrum* L. seed was collected in 1968 from a specimen with good fall foliage color growing in the wild near the Grand Rapids Experiment Station, Grand Rapids, MN. Seedlings were evaluated at the University of Minnesota Landscape Arboretum near Chanhassen, MN. One seedling exhibited an upright growth habit and excellent fall color. This individual was clonally propagated by budding and grown out for further evaluation.

Description

'Autumn Spire' exhibits a broad-columnar growth habit. The original 24-year-old tree is 9 m (30 ft) tall with a spread of 3 m (10 ft) and a 13.3 cm (5.25 in) caliper (dbh). The tree may broaden with age but is expected to remain narrower than is typical of the species. Branches ascend at 25-degree angles to the trunk. Winter color of one-year stem is brownish-red (RHS 178A) (2). The trunk and main branches are light gray (RHS 201D). Dormant buds are reddish-purple (RHS 187B). Red (RHS 46C) staminate flowers typically appear from mid- to late-April in the Chanhassen, MN, area. This cultivar lacks female flower parts and produces no seeds.

Leaves are three-lobed with truncate to cordate bases and serrate margins (ca. 2.5 serrations/cm). Leaf blades average 9.9 cm (4 in) long by 9.0 cm (3.5 in) wide. Petiole length averages 6.7 cm (2.6 in). In summer, the upper side of the leaf blade is medium green (RHS 146B) and glabrous. The lower leaf surface is silver-green (RHS 192A) and glaucous with scattered hairs. 'Autumn Spire' produces an outstanding fall foliage display in late September to early October (at the University of Minnesota Landscape Arboretum). Leaf color develops progressively from a deep purple-red (RHS 184A) to a bright red (RHS 46A). Attractive fall color lasts for 6-10 days, depending on environmental conditions.

Adaptation

'Autumn Spire' is well adapted to northern climates. The cultivar exhibits an early cessation of growth and develops fall foliage coloration before most other *A. rubrum* cultivars. The tree has performed well in the Chanhassen, MN, (USDA zone 4a) area without winter injury. The average minimum winter temperature in Grand Rapids, MN, (USDA zone 3b) where the seedling originated is -36° C (-32° F).

Cultural Conditions

A. rubrum 'Autumn Spire' has the same cultural requirements as the species. Plants should be grown in full sun in moist, well-drained, slightly acidic soils. Plants are likely to develop foliar chlorosis and have reduced growth rates in alkaline soils.

Performance

Little is known about the performance of this cultivar outside of Minnesota. Selinger (3) reported that 'Autumn Spire' has consistently colored earlier and developed better fall color than the other *A. rubrum* cultivars in their Oregon production fields. Growth rate is faster than that of



Fig. 1. Photo of original tree of *Acer rubrum* 'Autumn Spire' showing its columnar growth habit.

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'Northwood' red maple. Average grade of three-year-old trees produced from softwood cuttings is 6 feet branched.

Propagation

Softwood cuttings are the preferred method for propagating 'Autumn Spire,' since graft incompatibility is often observed when *A. rubrum* cultivars are budded onto *A. rubrum* seedling understock. Acceptable rooting percentages have been achieved by following standard recommendations for the species (1).

Landscape Uses

Spectacular fall color, columnar growth habit, exceptional cold hardiness, and seedlessness make *A. rubrum* 'Autumn Spire' a valuable new ornamental tree for northern climates. This cultivar is particularly useful as a specimen or shade tree on sites where lateral space is limited, such as on small residential lots or near townhomes, apartment complexes or schools. 'Autumn Spire' also might be planted near multi-

story office buildings or shopping areas to soften harsh architectural features or to break up expansive vertical surfaces.

Availability

Acer rubrum 'Autumn Spire' was granted Plant Patent #7803 by the U.S. Patent Office in 1992 and cannot be reproduced without payment of patent royalties. Licensing information can be obtained by contacting Dr. Harold Pellett, University of Minnesota Landscape Arboretum, PO Box 39, 3675 Arboretum Drive, Chanhassen, MN 55317.

Literature Cited

1. Dirr, M.A. and C.W. Heuser, Jr., 1987. The Reference Manual of Woody Plant Propagation. Varsity Press, Inc., Athens, Ga.
2. Royal Horticulture Society. 1966. The Royal Horticultural Society colour chart. Royal Hort. Soc., London.
3. Selinger, D. 1992. Plant of the Month. Minnesota Nursery and Landscape Association News 16(4):13.