

# 'Galaxy' Magnolia<sup>1</sup>

Frank S. Santamour, Jr.<sup>2</sup>

U.S. National Arboretum, U.S. Department of Agriculture, Science and Education Administration, Agricultural Research, Washington, DC 20002

*Magnolia (liliflora 'Nigra' x sprengeri 'Diva')* 'Galaxy', Accession No. 28352-14 and PI 433306, is a new introduction from the U.S. National Arboretum as part of its continuing program to develop new and improved cultivars of important landscape trees and shrubs. It is an upright, single-stemmed deciduous tree with strong branches and a pyramidal habit (Fig. 1). The large red-purple flowers are borne in profusion and open sufficiently late in the spring to avoid any significant frost damage.

## Origin

This new cultivar was selected from a group of seedlings derived from the cross of *M. liliflora* Desrouss. 'Nigra' (= *M. quinquepeta* Buc'hoz 'Nigra') NA 2901 as seed parent with *M. sprengeri* Pampan. 'Diva' NA 4268 as pollen parent. The cross was made in 1963 by William F. Kosar at the U.S. National Arboretum. Apparently 134 filled seed were harvested and 47 seedlings were field planted in rows in 1966. The trees were moved to wider spacing in 1969. 'Galaxy' first flowered in 1972, at 9 years of age from seed.

## Description

'Galaxy' is a strong, upright, growing tree that can be easily maintained as a single-trunked specimen. Growth rate is moderate. In December, 1972, the original tree was 4.8 m in height and had a diameter at breast height (1.4 m above ground level) of 6 cm. In December, 1977, at 14 years of age from seed, the tree was 7.6 m in height with a diameter of 18 cm. Height growth has been reduced in recent years because of flower buds forming on the terminal leader.

The leaves are slightly keeled, ovate (to 22 x 11 cm), and have an acute base and an acute to mucronulate tip. Leaf margins are entire and undulate. Leaf veins are impressed on the medium green upper surface but raised on the lighter green lower surface.

Flowers have 11 to 12 tepals arranged in whorls of about 4 tepals each. The tepals are pigmented on the outer surface at the base Red Purple 64 A (1) shading to Red Purple 64 C toward

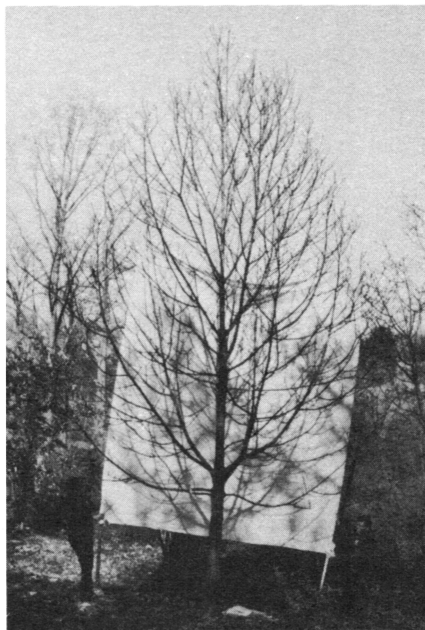


Fig. 1. 'Galaxy' magnolia in dormant condition showing tree form and branching pattern.

the tip. The inner surface of the tepals is a paler Red Purple 65 C. Anther filaments and the base of the receptacle to which they are attached are Red Purple 64 A, while the anther connective tissue is Red Purple 64 C. The size of the tepals in the outer and middle whorls are up to 12 cm long by 5.5 cm wide. Those in the inner whorl are usually shorter and narrower, but seldom

shorter than 8 cm. Flowers of the 1979 crop had about 94 anthers and 101 stigmas.

The flowering period in Washington, D.C. is intermediate between those of the parent cultivars, and is usually sufficiently late so that spring frosts cause little or no damage to the flowers. No flowering occurred on the terminal leader until the fifth year of flowering. Although 'Galaxy' is a pentaploid hybrid with  $2n = 95$  chromosomes, and is partially sterile, it may occasionally produce fruit and viable seed.

## Culture

'Galaxy' has proved adaptable to a wide range of soil and cultural conditions including sod culture, making it eminently suitable as a specimen tree for landscape use. Evaluation trials have proved that it can survive in Zone 4a (2) with some cold injury, but it appears to be perfectly hardy in Zone 5b. Cuttings root easily from semi-hardwood cuttings taken after stem elongation has ceased. Best results (over 80%) have been obtained using a coarse perlite medium and a commercial 0.8% IBA powder dip.

## Availability

Public release of this cultivar will be made in 1980. Propagation stock has been provided to wholesale production nurseries. Plants are not for sale at the National Arboretum but a distribution will be made in 1981 to cooperating arboreta and botanical gardens.

## Literature Cited

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# 'Molino' and 'Tonto' Arizona Rosewood<sup>1</sup>

LeMoyné Hogan, Warren Jones, and Chi Won Lee<sup>2</sup>

Department of Plant Sciences, University of Arizona, Tucson, AZ 85721

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Arizona rosewood (*Vauquelinia californica* Torr), Rosaceae, is native to southern Arizona and northern Mexico

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<sup>2</sup>Professor of Horticulture, Professor of Landscape Architecture and Assistant Professor of Plant Sciences, respectively.

at elevations of 750 to 1500 m (1). 'Molino' and 'Tonto' Arizona rosewood were released by the Arizona Agricultural Experiment Station to provide evergreen, drought-tolerant, flowering shrubs adapted to the low and medium deserts of the southwestern United States and similar regions of the world.

## Origin

The 2 cultivars were derived from crosses made in 1973. One parent was grown from seeds collected from the

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<sup>2</sup>Research Geneticist.

Tonto National Forest in 1963. The other parent was grown from seeds collected from the Molino Basin in the Santa Catalina Mountains in 1964.

### Description

'Molino' (Fig 1) is a dense, evergreen, woody shrub that grows 1.7 m in height and 1 m in width in 7 years. Branches are low to the ground and ascending. The color of bark in older branches and trunks is grey, that of new growth is reddish brown. Internodes are short, leaves are simple, lanceolate, unlobed, serrate, with a mean length of 6-8 cm and a mean width of 1.5-2 cm. Petioles are 1.5 cm long and with 4 spines/cm of leaf margin. Leaves are medium to dark green on the upper surface, light green on the lower surface. The leaves are twisted, making an average of  $\frac{1}{2}$  revolution, therefore, the leaves appear shorter than is actually the case.

'Tonto' (Fig 2) is more open and upright than 'Molino' and has a definite narrow ascending branching habit. Plants reach a height of 2.5 m and a width of 1 m in 7 years. Color of bark in older and new branches is reddish brown. Internodes are longer than 'Molino' but leaves are of equal length and width. The leaf does not twist, but has slightly undulating edges with 2 to 3 spines/cm of leaf margin. Leaves are darker, glossier green on the upper surface than 'Molino'. They both have the same light green lower surface as is characteristic for the species.

Both cultivars are precocious bloomers, beginning with the 3rd growing season. Flowers are numerous, in flat-topped, cymose panicles, 10 to 30 cm in width, petals are white, stamens 15, pistils 5, connate at the base, becoming somewhat woody follicles. Seeds have a thin, elongate, terminal wing. Both cultivars flower in Tucson from May through July. Four to 5 months are required from floral initiation to seed ripening.

### Propagation

For the last 20 years Arizona rosewood has been grown from seed by Arizona nurserymen in limited quantities for arid landscape use. Seedlings



Fig. 1. 'Molino' Arizona rosewood.



Fig. 2. 'Tonto' Arizona rosewood.

are variable in form and size. Terminal cuttings of Arizona rosewood have been rooted at the University of Arizona using mist, bottom heat, and 4,000 ppm

indolebutyric acid. Rooting percentages vary from 30 to 60% depending on the cultivar and time of year.

### Outstanding characteristics and uses

Both 'Molino' and 'Tonto' are adapted to dry, hot, low humidity environments similar to that found in Tucson. They flower profusely when young and are useful as specimen plants or as unclipped hedges. 'Molino' also makes an excellent container plant. Both cultivars maintain their form without pruning.

### Availability

Unrooted cuttings may be obtained in limited quantities from LeMoyne Hogan, Department of Plant Sciences, University of Arizona, Tucson AZ 85721.

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## 'Ennis' and 'Butler' Filberts<sup>1</sup>

H.B. Lagerstedt<sup>2</sup>

U.S. Department of Agriculture, Agricultural Research, Science and Education Administration, Corvallis, OR 97331

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'Ennis' and 'Butler' are the first filbert (*Corylus avellana* L.) introductions to be made from the Pacific Northwest in over 40 years. Cultivars more recently introduced from the northeastern U.S. and Canada have not proved to be satisfactory in Oregon and Washington. About 85% of the U.S. filbert production comes from a single cultivar, 'Barcelona', introduced from Europe in 1885. Another 10% of the production comes from 'Daviana', a cultivar which functions primarily as a pollinizer for 'Barcelona'. 'Ennis' is being introduced as a main crop cultivar to replace 'Barcelona' for the in-shell trade. 'Butler' is introduced as a pollinizer to replace 'Daviana'. The new introductions will, in part, be described by comparing them to the cultivars they are expected to replace (Fig. 1 and 2).

### Origin

'Ennis' and 'Butler' were evaluated during the past 10 years as "Grower Selections," that is, as 2 of several selections identified by filbert growers rather than by public agencies. Eight selections were brought to the attention of Oregon State University Extension personnel during the 1960's in response of a call for superior, unusual, or high-yielding trees. Locations of promising trees were given the USDA and Oregon Agricultural Experiment Station researchers who obtained nut samples and evaluated nut quality. Parentage of the grower selections is unknown. 'Ennis' is believed to have come from a nursery in Washington state about 40 years ago. The source is unknown and trees bearing similar nuts have not been seen in other orchards. 'Butler' originated as a seedling tree in the orchard of its discoverer, Mr. Joseph C. Butler of Wilsonville, Oregon.

### Descriptions

'Ennis'. This cultivar was selected primarily for its large nut size and yielding capacity. Over 50% of its nuts fall in the 2 largest grades, giant ( $\geq 23.8$  mm in diameter) and jumbo ( $\geq 22.2$  mm in diameter). This compares to 'Barcelona' which has only 10 to 15% of its nuts in the 2 larger grades. The

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<sup>2</sup>Research Horticulturist.