

Plant Evaluation Notes

Hibiscus moscheutos Cultivars and Horticultural Hybrids

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Exotic, tropical, non-hardy. These are words that are often used to describe *Hibiscus moscheutos* cultivars and horticultural hybrids when first encountered. Indeed exotic and tropical in appearance, this species is listed hardy in USDA zones 4-9 (Clausen 1989). Rose mallow is not the same plant as the more familiar florist or tropical hibiscus. Perhaps it is this confusion that in part accounts for its lack of presence in the cultivated landscape.

Hibiscus moscheutos L. (Malvaceae) is native to marshes in the eastern United States from Massachusetts to Michigan and south to Alabama and Georgia. The horticultural hybrids are variable crosses between *Hibiscus moscheutos*, *H. coccineus* and *H. militaris*, but are often listed as cultivars of *H. moscheutos* (Clausen 1989). Nomenclature is inconsistent in the literature and the nursery trade, with the same cultivars listed as hybrids, or assigned either to species or subspecies (Huxley 1992). In this report "rose mallow group" signifies the *Hibiscus moscheutos* cultivars and horticultural hybrids collectively.

Plant habit, foliage and flowers differ

from cultivar to cultivar, but it is the flower which ultimately attracts the most attention. The large, funnel-form flowers, are up to 30 cm (12 in.) across, solitary and borne in the axils of the leaves. The five-petaled corolla can be white, pink, red, rose-colored or bicolored and typically has a crimson center or eye. The intensity of the petal color and prominence of the eye also vary between cultivars, from brilliant pink with a bright red eye to pure white without an eye. Flower form can be flat or shallow to sharply-cupped, with petals overlapping to distinctly separate.

Rose mallow is a few- to many-stemmed herbaceous shrub. Stem height ranges from 0.91-2.4 m (3-8 ft.), most commonly reaching 1.5 m (5 ft.) tall. Leaves are alternate to 20.3 cm (8 in.) long, lanceolate to broadly ovate, entire or 3- or 5-lobed, grey-green above and white pubescent beneath. The deeply lobed, maple-like leaves are a striking contrast to the rounded flowers.

Hibiscus moscheutos grows best in a moist, organic soil but tolerates a wide range of moisture conditions (Giles 1980). Full sun is preferred but it also tolerates partial shade. Rose mallow, also known as

swamp rose mallow or mallow rose, can be used in the perennial border, mixed with shrubs, as a hedge or screen, or massed near a water feature. Whether planted en masse or individually, the variety of plant forms and sizes make the rose mallow group versatile landscape plants. Rose mallow is a dramatic point in a formal or naturalized landscape.

Evaluation Project

The huge, brightly colored flowers of the rose mallow group are a curiosity in the temperate Midwest. Some gardeners have grown or are familiar with the rose mallow cultivars 'Disco Belle', 'Southern Belle' and 'Frisbee', but are not so familiar with the myriad of other cultivars now available (Table 1). Prior to the onset of the evaluation project, the Chicago Botanic Garden collection contained only 'Southern Belle' and 'Disco Belle'.

The general lack of local information on the rose mallow group as well as the overuse of the same few cultivars were primary considerations for developing the research project. Three basic goals were defined for the project: 1) to compare



Hibiscus moscheutos 'Clown'

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Hibiscus moscheutos 'Poinsettia'

M. Hicks



Hibiscus 'Snow Queen'

R. Hawke

commercially available cultivars for ornamental quality and vigor; 2) to determine the cultural parameters, including winter hardiness; and 3) to evaluate the landscape potential for the Chicago area.

From 1987-1989, 29 taxa were acquired and grown on in the nursery as stock plants (Table 1). By the spring of 1989 six cultivars had died in the nursery of an undetermined cause. Each evaluation group of four same-aged plants were obtained during the propagation phase, 1987-1989 (see Propagation Information, page 3).

The Herbaceous Test Garden (HTG) was developed in 1989 to provide a uniform site for evaluating herbaceous perennial and annual plants. The test site was located on the eastern shore of the Garden's lagoon system, received full sun and was fully exposed to wind in all directions. All trial plots received similar exposure to wind and 8-9 hours of full sun per day during the growing season. Planting beds were excavated to a depth of 30.5 cm (12 in.) and raised 15.2 cm (6 in.) above ground level to improve drainage. The soil mix ratio was one part composted leaves to four parts soil. Soil pH in HTG during the evaluation period was 7.7. All trial plots were surrounded by turf grass paths.

Cultural practices and maintenance in the trial plots was kept to a minimum. The test plants received adequate moisture because the surrounding turf grass was irrigated on a regular basis. Supplemental irrigation was supplied as necessary. The plants were not fertilized during the evaluation period. A mulch of shredded leaves and wood chips was maintained on the surface of the plots throughout the year for aesthetic and water conservation purposes. The plants were top-dressed with an additional 5-7.6 cm (2-3 in.) of mulch in the winter. Plants in the trial plots were cut back to 15.2 cm (6 in.) in the autumn or winter. The stubs identified where the plants were located so that no damage occurred from cultivation or foot traffic in late May or early June before the new shoots emerged.

No pest or disease was ever observed or

noted on any cultivar or horticultural hybrid. Several cultivars exhibited stem fasciation in 1992, with varying degrees of severity. Subsequent lab tests of affected plant material showed viral infection; leafhoppers were the suspected cause. Fasciation did not appear to adversely affect the general health or floral display of the plants. The test site was surrounded by a low voltage electric fence to deter deer browsing since a small degree of damage

by deer had been noted on parent plants in the production nursery between 1987-89. No deer damage occurred to the plants in the Herbaceous Test Garden.

Observations and Results

The plant characteristics and performance specifics observed from 1989 to 1992 are outlined in Table 2. Of the original 29 taxa acquired for evaluation, 21 taxa completed the project and are described in the table. Rose mallow cultivars that lived more than one season were determined winter hardy in the trials at the Chicago Botanic Garden (USDA Hardiness Zone 5b). Lack of winter hardiness was not concluded as the cause of death in plants that did not live more than one year. Retesting was not possible because the cultivars originally received from Fleming's Flower Fields could not be replaced.

During the evaluation term plants were observed and data collected on the following characteristics or activities: flower color, size, form, overall floral effect/coverage¹, bloom season; plant height, width and form; leaf form, color and health; stem color and strength; shoot emergence date; and winter hardiness. The evaluation criteria were assessed to determine an overall rating and this rating was converted to a simple three-star system (Table 2). For example, 'Intense Pink' was exceptionally well-formed and vigorous but had approximately 5% flower production during the season. This cultivar received one star, a below-average rating based on its poor flower production.

Observations and information specifically pertaining to each taxon, including the overall performance rating, are contained in Table 2. General observations, relating to more than one cultivar, were also recorded for flowers, fruit, habit and foliage.

The flowers of rose mallow opened by mid-morning, with the exception of 'Sleeping Beauty', and lasted for one day only. Spent blossoms often dropped onto the foliage and persisted there until disinte-

¹ Coverage defined as percentage of plant with open flowers at peak bloom.

Table 1: Hibiscus Evaluation Group and Sources

'Anna J. Hemming' 1
'Big Red' 2 *
'Bright Eyes' 2
'Brilliant Coriso' 1
'Candy Apple' 2 *
'Candy Stick' 2
'Cerise Queen' 2 *
'Intense Pink' 1
'Lewis Beck' 1
<i>moscheutos</i> 'Blue River II' 1
<i>moscheutos</i> 'Clown' 1
<i>moscheutos</i> 'Cotton Candy' 1 *
<i>moscheutos</i> 'Crimson Wonder' 1
<i>moscheutos</i> 'Giant Maroon' 1
<i>moscheutos</i> 'Lester Riegal' 1
<i>moscheutos</i> 'Lord Baltimore' 1
<i>moscheutos</i> 'Lord's Pink' 3
<i>moscheutos</i> 'Pink Giant' 1
<i>moscheutos</i> 'Poinsettia' 3
<i>moscheutos</i> 'Radiation' 3
<i>moscheutos</i> 'Ruby Dot' 1
<i>moscheutos</i> 'Super Rose' 1
<i>moscheutos</i> 'White Beauty' 1 *
'Red Cutleaf' 2
'Royal Rose' 2 *
'Sleeping Beauty' 1
'Snow Queen' 1
'Strawberries 'n' Cream' 2 *
'Strawberry Swirl' 2 *

* Lived for one year only

Sources

- 1 Carroll Gardens, 444 East Main Street, Westminster, MD 21157
- 2 Fleming's Flower Fields, out of business
- 3 Andre Viette Farm & Nursery, Route 1, Box 16, Fisherville, VA 22939

grated by time and weather. The size and abundance of flowers made this a significant aesthetic consideration. Removing spent blossoms before abscission alleviated this situation. Most of the cultivars were free-flowering from late July to early October, although low flower production was regularly recorded on 'Anna J. Hemming', 'Blue River II', 'Giant Maroon', 'Intense Pink' and 'Lewis Beck' (Table 2). The plants flowered on the average one month earlier than usual in 1991 due to warmer summer temperatures.

The deep rose-colored cultivars, 'Crimson Wonder' and 'Poinsettia', appeared to be without an eye because of the intensity of the flower color. 'Blue River II' was unique because it was pure white without an eye.

Hibiscus are reputed to self sow freely (Giles 1980) but at no time in the evaluation period were seedlings discovered in or around the test plots. Seed was produced and dehisced each year.

Plant habits varied among the cultivars with the majority broader than tall. 'Brilliant Cerise' was a rounded shrub of equal height and width. 'Intense Pink' was taller than broad with a dense habit, whereas 'Anna J. Hemming' and 'Lord Baltimore' had open, loose habits. Stem color was green, reddish or burgundy. All cultivars with pink or white flowers had green stems. With few exceptions, cultivars with red or rose-colored flowers had red to burgundy stems (Table 2).

The foliage of several cultivars exhibited varying degrees of red coloration throughout the growing season. Red petioles, veins and leaf margins were most prominent on 'Anna J. Hemming' and 'Red Cutleaf', and less so on 'Lord Baltimore'. The intensity of red was deepest as the leaves emerged and markedly dissipated as the season progressed. These three cultivars were also the only plants with deeply lobed leaves.

Conclusions

The purpose of the project was to observe and evaluate the broad to specific aspects of

the rose mallow group. First, all the cultivars were grown side by side for easy comparison of ornamental characteristics and vigor. The plants were compared by floral character, habit and general plant health, and the overall comparison provided the base for the evaluation project. Next, the cultural requirements of the group were determined and with few exceptions the common rose mallow cultivars were fully adaptable to our site. The test plants were given minimal cultural care and thrived throughout the evaluation term. Lastly, the cultivars that adapted the best to the growing conditions and showed the most ornamental quality were introduced into the local nursery industry through a plant release program in the spring of 1993.

The rose mallow cultivars that are highly recommended, as established by the Chicago Botanic Garden trials, are: 'Candy Stick', 'Clown', 'Crimson Wonder', 'Pink Giant', 'Poinsettia', 'Sleeping Beauty' and 'Super Rose'. Cultivars in this group exhibited superior ornamental attributes and were successfully cultivated at the Chicago Botanic Garden. Plants receiving an average rating are also recommended.

The hibiscus trials generated much interest from the general public and nursery professionals throughout the course of the evaluation project. The display in late summer was always spectacular and the giant flowers captured the interest and piqued the curiosity of visitors. Several local nurseries requested cultivars when the collection was deaccessioned in the spring of 1993.

Whether used as a backdrop for other perennials or as an accent point in the garden, the boldly exotic character of rose mallow draws attention in the late summer and early autumn when most plants are finished flowering for the season. Perhaps with the increasing availability of new cultivars, rose mallow will become more visible in the midwestern landscape. The range of flower colors, flower sizes, foliage types and habits make this a plant group with variety enough for many landscape uses. ☞

References

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Propagation Information

by Jeff Epping, Propagator,
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Hibiscus moscheutos cultivars and horticultural hybrids are propagated by cuttings, division and seed. Softwood cutting propagation is the most common and efficient means of multiplication of this plant. Seed propagation may be less expensive but named cultivars do not come true-to-type. Softwood cuttings may be taken from May through July after new growth has hardened slightly. Cuttings may be successful later in the season as long as growth continues after rooting. Blind cuttings may result the following spring after over-wintering without this growth. Shoot tip cuttings root fastest, but secondary cuttings will also work.

Rose mallow has been successfully rooted in a 2:1 mixture of peat and perlite under intermittent mist with 70°F bottom heat. Rooting hormones hasten the rooting process. 4000 ppm IBA talc and 3000 ppm IBA/NAA quick-dip were equally successful resulting in 95 - 100% rooting.

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Table 2: Hibiscus Cultivar and Hybrid Evaluation Data, 1989-1992

Rating	Cultivar/hybrid	Height Range ¹	Width Range	Bloom Period ²	Flower Size	Flower Color	Flower Character and Effect ³	Foliar/stem Character
**	'Anna J. Hemming'	122 - 160 cm (48 - 63 in.)	40.6 - 76.2 cm (16 - 30 in.)	late Aug - Sept	14 - 16.5 cm (5½ - 6½ in.)	red	base of petals and pistil column white; overlapping petals; less than 20% open at peak	deeply lobed, with long central lobe; red veins, petioles and margins; burgundy stem color
*	'Bright Eyes'	76.2 - 109.2 cm (30 - 43 in.)	84 - 142 cm (33 - 56 in.)	late Jul - early Oct	17.8 - 19 cm (7 - 7½ in.)	white	crimson eye; pink flush, overlapping petals, cup-shaped; petals slightly crinkled; 20-30% open at peak	minor stem fasciation in 1992
**	'Brilliant Cerise'	114.3 - 162.5 cm (45 - 64 in.)	114.3 - 162.5 cm (45 - 64 in.)	Aug - Oct	20.3 - 26.6 cm (8 - 10½ in.)	purplish red	red eye; shallow-cupped to flat; up to 60% open at peak	green stems
***	'Candy Stick'	61 - 111.7 cm (24 - 44 in.)	89 - 162.5 cm (35 - 64 in.)	late Jul - Sept	22.8 cm (9 in.)	red	fully red with almost black veins; flat to shallow cupped; 40-80% open at peak	reddish stems; deep green leaves
*	'Intense Pink'	165 - 208 cm (65 - 82 in.)	114 - 122 cm (45 - 48 in.)	Aug - Sept	15 cm (6 in.)	pink	cupped, overlapping petals; 5% flower production throughout season	green stems; tall, robust cultivar production throughout season
*	'Lewis Beck'	78.7 - 139.7 cm (31 - 55 in.)	83.8 - 152 cm (33 - 60 in.)	mid Aug - Oct	24 cm (9½ in.)	pink	flat, overlapping petals, less than 20% flower production throughout season	green stems
*	<i>moscheutos</i> 'Blue River II'	57 cm (22 in.)	40.6 cm (16 in.)	late Aug - late Sept	17.8 - 19 cm (7 - 7½ in.)	white	pure, no eye; less than 5% open at a time	green stems
***	<i>moscheutos</i> 'Clown'	127 - 160 cm (50 - 63 in.)	165 - 203 cm (65 - 80 in.)	late Jul - Oct	16.5 - 19 cm (6½ - 7½ in.)	pink/ white	red eye; ruffled margins; cupped overlapping petals; 20-40% open at peak, similar to 'Pink Giant'	green stems
***	<i>moscheutos</i> 'Crimson Wonder'	122 - 170 cm (48 - 67 in.)	177.8 - 231 cm (70 - 91 in.)	late Jul - Oct	20.3 - 22.8 cm (8 - 9 in.)	deep rose	eye not discernible; cupped; up to 60% coverage at peak; similar to 'Poinsettia' in size and color	green stems
*	<i>moscheutos</i> 'Giant Maroon'	106.6 - 132 cm (42 - 52 in.)	88.9 - 152 cm (35 - 60 in.)	late Jul - Oct	20.3 cm (8 in.)	red	deep red eye; shallow cup-shaped; under 20% flower coverage through-out season	green stems and leaves; open, sprawling habit
*	<i>moscheutos</i> 'Lester Riegel'	109.2 - 137 cm (43 - 54 in.)	114.3 - 152 cm (45 - 60 in.)	late Jul - Oct	20.3 - 21.6 cm (8 - 8½ in.)	pink	red eye, darker pink veins; flat, slightly ruffled margins; less than 40% coverage at peak	green stems; flopping habit; chlorosis
**	<i>moscheutos</i> 'Lord Baltimore'	160 - 210.8 cm (63 - 83 in.)	89 - 116.8 cm (35 - 46 in.)	late Jul - Oct	17.8 - 21.6 cm (7 - 8½ in.)	crimson red	shallow to flat; up to 60% coverage at peak tends to break at base	burgundy colored stems; deeply lobed; similar to 'Anna J. Hemming';
*	<i>moscheutos</i> 'Lord's Pink'	124.5 - 134.6 cm (49 - 53 in.)	101.6 cm (40 in.)	late Jul - early Oct	16.5 - 21.6 cm (6½ - 8½ in.)	pink	cupped, overlapping petals; 20% coverage at peak	green stems
***	<i>moscheutos</i> 'Pink Giant'	165 - 203 cm (65 - 80 in.)	177.8 - 241.3 cm (70 - 95 in.)	late Jul - Oct	19 cm (7½ in.)	pink/ white	red eye; similar to 'Clown'; shallow cupped; up to 60% flower coverage at peak	green stems; robust habit, similar to 'Intense Pink'; better flower coverage; taller version of 'Clown'
***	<i>moscheutos</i> 'Poinsettia'	127 - 162.5 cm (50 - 64 in.)	134.6 - 165 cm (53 - 65 in.)	late Jul - Oct	16.5 - 20.3 cm (6½ - 8 in.)	deep rose	cup-shaped, overlapping petals; up to 60% coverage at peak; eye not discernible	green stems and leaves; most uniform habit; mild chlorosis 1992
*	<i>moscheutos</i> 'Radiation'	170 cm (67 in.)	152.4 cm (60 in.)	mid Aug - late Sept	24 cm (9½ in.)	pink	red eye; 40-60% coverage at peak	green stem with slight red tint
*	<i>moscheutos</i> 'Ruby Dot'	124.4 - 157.4 cm (49 - 62 in.)	114 - 147 cm (45 - 58 in.)	mid Jul - Oct	20.3 - 24 cm (8 - 9½ in.)	white	pale ruby eye; saucer shaped with overlapping petals; 30-40% flower coverage at peak	green stems and leaves; terminal growth moderately fasciated in 1992; stems break at the base, open habit
***	<i>moscheutos</i> 'Super Rose'	91.4 - 137 cm (36 - 54 in.)	122 - 152 cm (48 - 60 in.)	early Aug - Oct	22.8 cm (9 in.)	pink	red eye; darker pink veins; shallow cupped; overlapping petals; up to 80% flower coverage at peak; most floriferous cultivar	green stems and entire leaves; slight foliar scorch in 1992
**	'Red Cutleaf'	91.4 - 111.7 cm (36 - 44 in.)	91.4 - 122 cm (36 - 48 in.)	mid Jul - Oct	19 - 22.8 cm (7½ - 9 in.)	rose red	shallow cupped with overlapping petals; up to 60% flower coverage at peak; flowers fully open in morning and afternoon	red stems; green, deeply lobed; terminal fasciation in 1992; somewhat weak stemmed, breaks at base
***	'Sleeping Beauty'	139.7-167.6 cm (55 - 66 in.)	114 - 139.7 cm (45 - 55 in.)	mid Jul - Oct	12.7 - 15 cm (5-6 in.)	white	with a pink blush, red eye; petals do not overlap; not fully open until afternoon; up to 60% coverage at peak	green stems and leaves
**	'Snow Queen'	101.6 - 114 cm (40 - 45 in.)	152 - 177.8 cm (60 - 70 in.)	mid Jul - Oct	25.4 - 30.5 cm (10½ in.)	white	red eye; largest flowers; shallow cupped, overlapping petals; up to 40% flower coverage at peak	green stems and leaves; sprawling

Performance Ratings: *** - Above average, ** - Average, * - Below average

¹ Height range for a 3-4 year old plant from rooted cutting

² Average bloom period; approximately one month earlier in 1991 due to warmer weather

³ Peak bloom is when the greatest flower coverage or production occurs, approximately one month after first flowers open

⁴ Died after two years in program

⁵ Only three years in trials, 1990-92



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