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Andromeda, A Red and Orange Heliconia for Cut-Flower Use

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Andromeda

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Introduction

The genus *Heliconia* (Heliconiaceae) includes about 150 species of mostly Neotropical herbaceous plants. They have banana-like foliage and range in height from 0.3 m to 6 m. Some species have reddish or multi-colored foliage, making them useful landscape plants for tropical regions. Heliconias have erect or pendulous terminal inflorescences consisting of stiff, boat-shaped bracts which are often brightly colored. Depending on the species, up to 20 tubular florets are produced sequentially in a bract, each lasting several days before senescing. Among heliconias with erect inflorescences, *H. psittacorum* shows considerable potential as a commercial cut flower crop. The species has attractive flowers, long, straight, clean peduncles, continuous prolific flower production, excellent postharvest characteristics, and few insect and disease pests. The inflorescences somewhat resemble those of bird-of-paradise (*Strelitzia reginae*) except that the bracts also are colorful in *H. psittacorum*. The flowers of this heliconia are less massive than those of bird-of-paradise and are thus more easily incorporated into smaller floral arrangements.

Origin

Heliconia psittacorum is a widespread species found throughout northern South America, and many forms exhibiting a wide range of flower characteristics exist. 'Andromeda' is one clone that shows promise as a commercial cut flower. The precise origin of Andromeda is unknown. Our plants were obtained from Andromeda Gardens, a private garden in Barbados, W.I. by A. A. Will in 1978. These plants have been evaluated in 20-liter containers and in raised ground beds under varying light intensities, fertility levels, and irrigation frequencies at the Agricultural Research and Education Center, Fort Lauderdale, Florida, from 1978 to 1983.

Description

Heliconia psittacorum 'Andromeda' ranges in height from 1.0 to 1.8 m, depending on plant density, fertility level, and irrigation intensity. Plants grew taller under crowded, well-watered, high fertility situations. Foliage is dark glossy green with individual leaf lamina averaging 60 to 70 cm in length and 10 to 12 cm in width. Five leaves are normally produced per shoot. Leaves are followed by a terminal inflorescence. Peduncles average 35 to 45 cm long (Table 1), and primary bracts average 12 to 14 cm in length. Inflorescences of Andromeda typically have three or four bracts, the first being substantially larger than the others. Bracts are red, fading to light orange at their bases. The lower half of each bract, as well as the upper 2 to 3 cm of the peduncle, is covered with a waxy white bloom. Florets are orange with black tips, and the main axis of the inflorescence is also orange.

Performance

Flower production of Andromeda grown outdoors in southeastern Florida generally begins in April or May unless the previous winter was exceptionally cold. Temperatures below 10°C cause injury to *H. psittacorum*, but above this temperature, growth and flowering are continuous. The optimum temperature range for heliconia production is 21 to 35°C, with greater growth and production at the higher temperatures. Under typical south Florida summer growing conditions, a harvestable flower is produced eight to nine weeks after emergence of a new shoot. Rate of plant spread is rapid with shoot densities exceeding 700/m² in two-year-old beds where only flower-bearing stalks were removed.

In southeastern Florida, production generally peaks in the months of July through September, declines in October and November and stops altogether once night temperatures drop below 10°C. Production in first year beds which had not reached their maximum density averaged 130 flowers/m² in southeastern Florida under full sun and high fertility (3.6 kg of 18-6-12/m²/yr), while crowded second year beds produced 160 flowers/m²/yr under similar conditions (Table 1). Growing plants under 63% shade reduced flower production to about 35 flowers/m²/yr in first year beds and 65 to 75 flowers/m²/yr in second year beds. Production in heated greenhouses continues year round, with photoperiod having no apparent effect on growth or flowering. Flower production was reduced, however, from December through April in a Gainesville, Florida greenhouse study where temperatures were maintained between 16°C and 25°C. A second year bed in this study produced about 175 flowers/m²/yr.

Postharvest life of cut inflorescences placed in deionized water

Table 1. Effects of light intensity and fertilization rate on production, size, and postharvest life of *H. psittacorum* 'Andromeda' flowers grown outdoors in southeastern Florida.

Light intensity	Fertilization rate (kg/m ² /yr)	Bract length (cm)	Peduncle length (cm)	Total height (cm)	No. of flowers/m ² (1981)	No. of flowers/m ² (1982)	Postharvest life (days)
63% shade	0.7	13.4	36.1	168.1	34.1	77.6	15.5
	2.2	13.7	35.6	178.5	31.4	70.9	15.2
	3.6	14.2	32.2	175.4	35.9	65.0	14.6
Full sun	0.7	12.5	39.1	159.8	98.9	118.8	14.4
	2.2	13.6	43.8	181.2	106.7	161.9	14.9
	3.6	13.1	39.8	174.2	130.5	161.9	14.4

averages 14 to 17 days at 23°C for this cultivar. Insect and disease pests of heliconias are few. Aphids often colonize the nectar-laden flowers, but these are easily controlled with common insecticides. Thrips and mites have been reported on Andromeda under greenhouse conditions, but have not been observed in outdoor beds in south Florida. Nematodes can cause damage to other varieties of *H. psittacorum*, but the relative susceptibility of Andromeda to nematodes is not known. No other insect or disease problems have been encountered under south Florida production conditions.

Culture

Andromeda heliconias should be grown in ground beds no wider than 75 cm. Wider beds result in less light penetration to the soil in the center of the bed with resultant stretching of shoots produced there. Beds should be slightly raised for good drainage and should be surrounded by solid barriers not less than 30 cm in depth to prevent the rhizomes from spreading throughout the aisles. Well-drained, slightly acid media should be used in the beds, and inclusion of dolomitic limestone in addition to macro- and micronutrient fertilizers is essential. Fertilization at the rate of 3 kg of 18-6-12 per m² per year results in rapid growth and flowering, but does not detract from flower quality (Table 1).

Clumps of plants about 10 to 20 cm across should be planted on 30-cm centers in the beds. The medium should be kept uniformly moist, but not waterlogged. Water stress is indicated when the leaves begin to curl about the midvein. Sites regularly receiving winds greater than 15 to 20 km/hr should be avoided, as wind can cause abrasion damage to the flowers. Flowers can be cut when they reach the desired state of maturity, since further opening of the bracts does not occur once the flowers are cut. They are usually cut when the first two bracts have opened, but slightly tighter or more open flowers can also be used effectively in floral arrangements. In order to allow more light to penetrate through the dense canopy of heliconia beds, it is necessary to remove the entire stalk with the flower. Stalks can be cut near ground level or pulled out, as they will snap off just below the soil surface. New shoots will replace removed stalks, flowering about eight to nine weeks later. After cutting, heliconia flowers must be maintained at temperatures above 10°C to prevent injury. Commercially available floral preservatives have no effect on postharvest life of heliconia flowers.

H. psittacorum is considered a weed in many areas where it is native, spreading long distances by seeds and locally by rhizomes. Flowers are pollinated exclusively by a genus of hummingbirds whose bill is adapted for extracting nectar from the flowers. Since no hummingbirds with bills long enough to probe *H. psittacorum* flowers

exist anywhere in the United States, seed set has never been observed here. Although these plants spread rapidly by means of underground rhizomes, they can easily be contained by planting in beds surrounded by a solid barrier 30 cm deep. Plants which are allowed unrestricted growth will form continuous patches, rather than dispersed plants, and thus are easily controlled. Because of their extreme susceptibility to cold temperatures, *H. psittacorum* will not survive unprotected in any but the most tropical areas in south Florida. For these reasons it is quite unlikely that *H. psittacorum* could ever become a serious weed in Florida.

Availability

Information regarding the availability of Andromeda heliconias may be obtained from the authors.

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