

Hemerocallis L. ‘Chesapeake Belle’

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The production of herbaceous perennials is the fastest growing segment of American agriculture. Daylilies (*Hemerocallis* L., Liliaceae Juss.) are one of the leading perennials in sales (Cameron et al., 2000). Daylilies are grown widely in a variety of settings from roadsides to the garden border. There is a need to develop specific daylily cultivars for different locations. Cultivars used in roadside plantings should have large, vigorous growth habits and tall, strong inflorescences. Cultivars used in garden borders should have small, compact growth habits and short inflorescences. Although there is a wide range of plant habits and inflorescence heights found within *Hemerocallis*, most cultivars have a relatively large plant habit (2-cm-wide and 50-cm-long leaves), with medium to tall inflorescences (≈ 1 m).

Efforts have been under way for some time to develop short-statured cultivars, the most popular of which is ‘Stella de Oro’ (Griesbach, 1989). This cultivar is planted widely in home and commercial landscapes, as well as along roadsides. However, the popularity of ‘Stella de Oro’ is not based upon its stature, but rather on its ability to produce multiple shoots that flower throughout the growing season. Most daylilies typically form new shoots and their resulting flower buds in the fall under a shorten-

ing daylength (Arisumi and Frasier, 1968; Voth et al., 1968). After cold treatment during the winter, the shoots break dormancy and their floral meristems expand to produce flowers during the summer. Most cultivars and species flower only once a year. ‘Stella de Oro’ expresses two recessive mutations that allow it to form new shoots and flowers without either short day or cold treatment.

One of the mutations that allows ‘Stella de Oro’ to reflower is derived from *H. minor* Mill. (Fig. 1). *Hemerocallis minor* is native to northeastern Asia and typically flowers once in early summer (Hu, 1968). However, certain clones of *H. minor* are known to flower a second time in early fall (Stout, 1946). This second flowering is associated with new growth that is initiated in fall under exposure to a shortening daylength. New growth does not flower without a cold temperature treatment in the wild-type *H. minor*. However, in the mutant *H. minor*, new inflorescences are initiated without cold treatment (R.A. Griesbach, personal communication). This temperature response mutation is manifested in one of the parents of ‘Stella de Oro’, ‘Bitsy’, which reliably reflowers twice per year.

The ability of ‘Stella de Oro’ to initiate new shoots in the absence of a shortening daylength is derived most likely from its unknown parent (Fig. 1). Even though this parent is unknown, many cultivars express this mutation. However,

new shoots do not flower in these cultivars until the next growing season after a cold treatment. When this daylength response mutation is coupled with the temperature response mutation, the new shoots flower without exposure to cold temperature.

The double mutation in ‘Stella de Oro’ resulted in a plant with an unique growth habit and flowers that are continuously produced. Since ‘Stella de Oro’ produces small flowers (≈ 5 cm wide) on relatively long inflorescences (≈ 50 cm tall), a breeding program was initiated at the U.S. National Arboretum (USNA) to develop an improved ‘Stella de Oro’-like daylily with a more balanced, dwarf growth habit.

Origin

It was noted by Stout (1946) that certain clones of *H. minor* were able to flower more than once a season. These clones were extensively used to breeding to create reblooming cultivars. Of these cultivars, the most widely grown is ‘Stella de Oro’. ‘Stella de Oro’ was self-pollinated by Jablonski in the mid-1970s and over 100 seedlings were grown. Although most of the seedlings were nearly identical to ‘Stella de Oro’ (personal observation), two seedlings with shorter inflorescences (≈ 25 cm tall) resulted and were selected for release. One of these seedlings was introduced by Al Rogers as ‘Elfin Stella’, while the other seedling was released by Roy Klehm as ‘Shortie’ (personal communication with Klehm and Rogers). ‘Elfin Stella’ is a miniature version of ‘Stella de Oro’. Its leaves, inflorescences, and flowers are nearly half the size. ‘Shortie’ is not a miniature version, as it has leaves and flowers that are about the same size as ‘Stella de Oro’. However, its petals are nearly one-third wider and its inflorescences less than half as long. Flower color can be very accurately measured using the Munsell color system (Nickerson, 1946).

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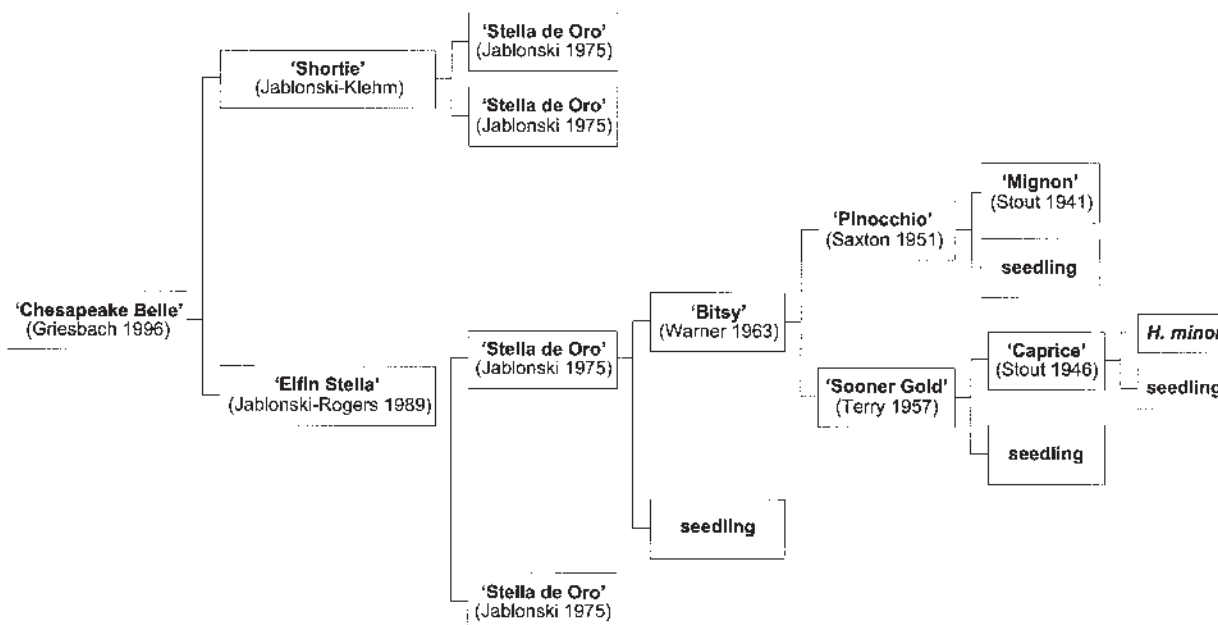


Fig. 1. Parentage of *Hemerocallis* ‘Chesapeake Belle’. The originator and date of introduction (Hemerocallis Registration Authority, American Hemerocallis Society, Rolesville, N.C.) is listed under the cultivar name.

In the Munsell color system, color is defined by its hue, value or lightness, and chroma or saturation (i.e., hue value/chroma). Since the Munsell color chips are specifically defined, one can readily interpolate between colors if precise matches can not be found. This is not possible with the Royal Horticultural Society's Colour Chart. The flowers of 'Elfin Stella' are the same color (2.5Y 8.5/12) as 'Stella de Oro', while 'Shortie's flowers are not as darkly colored (2.5Y 8.5/8). Both cultivars displayed the reflowering characteristic of 'Stella de Oro'.

At the USNA, 'Shortie' was crossed with 'Elfin Stella' in order to increase flower size and petal width while maintaining the short inflorescence length and reflowering ability. Out of 200 resulting seedlings, 'Chesapeake Belle' was selected for its dwarf stature, large full flowers, and ability to reflower. 'Chesapeake Belle' was field tested for 7 years in Maryland and 4 years in Wisconsin, Ohio, Tennessee, and Georgia.

Description

'Chesapeake Belle' is a diploid deciduous herb reaching 10 to 15 cm tall (Fig. 2). The fibrous-rooted rhizome produces leaves that are 1 to 2 cm wide and 25 to 35 cm long. The leaves are glabrous, linear, acute, and slightly canaliculate. The inflorescence is raceme, 18 to 28 cm tall, with 5 to 10 flowers. The perianth is funnellform, 7 to 9 cm wide, and vivid yellow (2.5Y 8.5/10). The perianth segments are obovate, obtuse, and 4 to 6 cm wide. The filaments and style are the same color as the perianth.

Under good growing conditions (see culture section), 'Chesapeake Belle' begins flowering in early June and finishes in late November in Ellicott City, Md. (USDA Hardiness Zone 5; www.usna.usda.gov). Under less ideal growing conditions, fewer inflorescences are initiated.

'Chesapeake Belle' can be distinguished from other closely related cultivars by its stature and flower color, size, and shape. 'Elfin Stella' has leaves that are shorter (15–25 cm) and more narrow (<1 cm) and flowers that are smaller (5–7 cm) and more saturated in color (2.5Y 8.5/12). 'Shortie' has leaves that are longer (35–45 cm) and wider (2–3 cm) and flowers that are larger (9–11 cm) and less saturated in color (2.5Y 8.5/8).

Culture

'Chesapeake Belle' is designed for the garden border, rock garden, or containers. Its small stature makes it unsuitable for planting in the center of a landscape with other large nearby plants or along highways. However, 'Chesapeake Belle' is very effective in mass



Fig. 2. Photograph of *Hemerocallis* 'Chesapeake Belle'.

plantings along the edge of a walkway or garden.

'Chesapeake Belle' will grow and flower in partial shade and dry soil, but produces more flowers in full sun with even moisture. In the absence of adequate light and water, fewer new shoots are produced, resulting in a reduced ability to reflower. Also, 'Chesapeake Belle' will grow and flower in wet, heavy clay soils and soils with a pH range of 6.0 to 8.0. It has survived winter temperatures as low as -26°C (USDA Hardiness Zone 4).

Because of its ability to produce many shoots, 'Chesapeake Belle' quickly forms a large, dense clump of shoots. In order to maintain flower production, these clumps should be divided every 3 to 4 years. Very large dense clumps produce small, immature shoots that do not flower well.

Availability

Plants are available from Day Lily Nursery, 471 Mud Creek Road, Rock Island, TN 38581; William Natrop Co., 8601 Snider Rd., Mason, OH 45040; and McCorkle Nurseries, 4904 Luckey's Bridge Rd., Dearing, GA 30808.

Literature Cited

- Arisumi, T. and L.C. Frazier. 1968. The initial and early developmental stages of the floral scape in *Hemerocallis*. *Proc. Amer. Soc. Hort. Sci.* 93:604–609.
- Cameron, A., B. Fausey, R. Heins, and W. Carlson. 2000. Firing up perennials—Beyond 2000. *Greenhouse Grower* 18:74–78.
- Griesbach, R.J. 1989. Selection of a dwarf *Hemerocallis* through tissue culture. *HortScience* 24:1027–1028.
- Hu, S.-Y. 1968. The species of *Hemerocallis*. *Amer. Hort. Mag.* 47:86–111.
- Nickerson, D. 1946. The Munsell color system. *Illum. Eng.* 61:549–560.
- Stout, A.B. 1946. Types of anthesis in *Hemerocallis* and their heredity in F_1 hybrids. *Bul. Torrey Bot. Club* 73:134–140.
- Voth, P.D., R.A. Griesbach, and J.R. Yeager. 1968. Developmental anatomy and physiology in daylily. *Amer. Hort. Mag.* 47:121–151.