

Plant Evaluation Notes

A Comparative Study of *Platycodon grandiflorus* Cultivars

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At the risk of encouraging botanical vandalism, the plump buds of balloon flower almost beg to be popped. The inflated, nearly spherical floral buds give *Platycodon grandiflorus* its common name; however, its bell-shaped blossoms mark a familial resemblance to bellflowers (*Campanula* sp.) and lady bells (*Adenophora* sp.). Winsome buds and exuberant blossoms distinguish stalwart balloon flowers in the midsummer border.

Platycodon grandiflorus is a monotypic species of the bellflower family (Campanulaceae), which is native to Asia where it is cultivated for medicinal use. Balloon flower is a bushy, clump-forming perennial, to 3 feet tall, but often troubled by floppy stems. Cultivars have been bred for smaller size and compact habits; however, variability can be expected since most cultivars are seed grown. Throughout July and August, the tumescent buds burst open to blue, pink, or white starry flowers streaked with prominent veins. The broadly campanulate, five-lobed blossoms, to 3 inches wide, are borne in few-flowered clusters at the end of the stems. Bluish green leaves, generally

oval with toothed margins, are arranged in whorls on the lower portion of the glabrous stems but positioned alternately at the tips. In autumn, leaf color changes to dark purple or a mix of light purple and yellow, depending on the cultivar.

Hardy balloon flowers are best in well-drained soils in full sun to light shade and are long-lived under normal conditions. Their stems emerge late in the spring and may be accidentally disturbed by impatient gardeners. Marking their location each fall can help guard against any digging mishaps come spring. Balloon flowers are easy-care perennials with few pest problems, although deer enjoy the succulent stems and flower buds. Staking is almost a requirement for taller cultivars or when growing balloon flowers in light shade. Seed-grown cultivars may exhibit variations in plant size and flower color. Balloon flowers perpetuate themselves in the garden through self seeding, which sometimes results in subtle new color forms.

In the border or cottage garden, balloon flowers are good companions to other summer-blooming perennials such as Shasta daisies (*Leucanthemum* sp.), yarrows (*Achil-*

lea sp.), sages (*Salvia* sp.), and ornamental grasses. The dwarf cultivars are well suited to rock gardens and seasonal containers. Balloon flower is one of Japan's traditional seven flowers of autumn; they are considered auspicious and often cut for autumnal displays. As cut flowers, stems must be flame seared to stop the milky sap from flowing. In gardens enjoyed by children, planting a balloon flower or two is guaranteed to pique their curiosity.

The Evaluation Study

From 2001 to 2005, the Chicago Botanic Garden (USDA Hardiness Zone 5b, AHS Plant Heat-Zone 5) evaluated *Platycodon grandiflorus* and 19 cultivars, with the goal of recommending exceptional balloon flowers for northern gardens.

Plants were grown side by side for easy comparison of ornamental traits and landscape performance. The evaluation garden was openly exposed to wind in all directions and received full sun throughout the growing season, an average of 156 days per year. The well-drained, clay-loam soil was amended with composted leaves and had a pH of 7.4 during the trial.

Maintenance practices were kept to a minimum to simulate home garden culture, thereby allowing plants to thrive or fail under natural conditions. Water was provided as needed and mulch consisting of shredded leaves and wood chips helped with water conservation and weed suppression. Moreover, plants were not fertilized, winter mulched, or chemically treated for insect or disease problems.

Observations

The comparative evaluation of *Platycodon grandiflorus* cultivars included data collection on ornamental traits such as bloom period, flower color and size, and habit quality; cultural or environmental health issues related to soil, drainage, or climate; disease and pest problems; and winter survivability. Plant traits and final ratings for *P. grandiflorus* and 17 cultivars are shown in Table 1. A number of cultivars grew larger than published descriptions, resulting in a degree of



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Platycodon grandiflorus 'Astra Blue'



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Platycodon grandiflorus 'Fairy Snow'

uncertainty regarding identification; however, the plants of 'Mariesii' and 'Pumilum Album' were determined to be unquestionably incorrect and dropped from the trial.

Overall, the balloon flowers performed well, with 12 cultivars receiving four-star good ratings for floral display, habit quality, and plant vigor. Most cultivars produced an abundance of flowers over a long period, but the number of open flowers at any time was generally moderate, up to 50 percent coverage. Lower flower production, to only 20 percent coverage at any time, was noted on several taxa. Due to this flowering pattern there was no distinct peak bloom period observed.

The white flowers of 'Fairy Snow' were either blue veined or lavender tinged; whereas, the blue veins on 'Hakone White'

gradually faded when the flowers were fully open. 'Perlmutterchale' (Mother of Pearl) had delicate pale pink flowers with spidery dark pink veins; the slightly darker 'Fuji Pink' was likewise streaked with contrasting veins. 'Fuji Blue' produced both single and double flowers, while 'Fuji Pink' and 'Fuji White' were only single-flowered. Distinctively, the flower buds of 'Komachi' inflated to 1½ inches wide but rarely opened. Withered blossoms commonly remained attached after blooming; deadheading is recommended to keep plants tidy.

One drawback to balloon flowers is their often lax stems, which is particularly troublesome for taller plants. Shorter cultivars have been introduced to remedy this problem; however, some short cultivars in the trial grew larger than expected. 'Astra Blue', 'Fairy Snow', and 'Misato Purple' were 16, 12, and 6 inches taller, respectively, than typically cited. While 'Komachi' exhibited the correct floral traits, it was over 20 inches taller than it should have been. Despite the discrepancy in plant sizes, a compactness of habit was especially notable on 'Astra Blue', 'Baby Blue', 'Misato Purple', 'Sentimental Blue', and 'Zwerg'. These robust cultivars remained mostly upright during the bloom period but occasionally had relaxed or floppy stems by September.

Among the taller balloon flowers that remained fairly upright during the bloom period were *Platycodon grandiflorus*, 'Blau'e Glocke', 'Double Blue', 'Fuji Blue', 'Fuji Pink', 'Fuji White', 'Hakone Blue', 'Hakone White', 'Komachi', and 'Perlmutterchale'. Relaxed

to floppy stems were commonly observed in late summer. Conversely, 'Albus' and 'Shell Pink' were usually floppy in midsummer.

Balloon flowers are generally considered winter hardy to Zone 4; nevertheless, crown damage or plant loss was observed in at least one year on 'Albus' (crown damage on several plants, 2001-2002), 'Baby Blue' (one plant dead, 2004-2005), 'Fairy Snow' (three plants dead, 2002-2003), 'Komachi' (one plant dead, 2002-2003), and 'Sentimental Blue' (one plant dead, 2002-2003). For a short period in July 2003, deer browsing was noted on one or more plants of almost every cultivar because the electric fence was not functioning. In each case, browsed plants were bushier, shorter, and remained more upright than usual.

Summary

Twelve balloon flower cultivars received high ratings for their strong habits, generally upright stems, and good floral displays. Although open flowers were not present in huge quantities at any time, floral production over the course of the bloom period was quite good. Whether on short or tall stems, the curious flower buds and starry blossoms of balloon flowers enliven summer gardens.

References

Armitage, A. 2008. *Herbaceous Perennial Plants*, Third Edition. Champaign, IL: Stipes Publishing.

Rice, G., editor-in-chief. 2006. *American Horticultural Society Encyclopedia of Perennials*. New York, NY: DK Publishing, Inc.

Table 1: Plant Traits and Performance Ratings

Overall Rating	<i>Platycodon</i>	Flower Color	Flower Size	Bloom Period	Flower Coverage ¹	Height	Width	Fall Color
★★★	<i>grandiflorus</i>	purple blue	3 in.	early Jul-mid Sep	low	40 in.	30 in.	light purple
★★★	<i>grandiflorus</i> 'Albus'	white	3 in.	late Jul-early Sep	moderate	40 in.	40 in.	yellow
★★★★	<i>grandiflorus</i> 'Astra Blue'	lavender blue	3½ in.	early Jul-early Sep	moderate	22 in.	24 in.	purple yellow
★★★★	<i>grandiflorus</i> 'Baby Blue'	lavender blue	3 in.	early Jul-late Aug	moderate	20 in.	30 in.	purple yellow
★★★	<i>grandiflorus</i> 'Blau'e Glocke'	purple blue	2½ in.	mid Jul-early Sep	low	39 in.	24 in.	purple yellow
★★★★	<i>grandiflorus</i> 'Double Blue'	purple blue◆	3 in.	mid Jul-late Aug	moderate	34 in.	34 in.	purple yellow
★★★	<i>grandiflorus</i> 'Fairy Snow'	white	3 in.	late Jun-early Sep	low	22 in.	24 in.	purple yellow
★★★★	<i>grandiflorus</i> 'Fuji Blue'	purple blue◆	3 in.	early Jul-early Sep	moderate	40 in.	32 in.	purple yellow
★★★★	<i>grandiflorus</i> 'Fuji Pink'	pale pink	3 in.	early Jul-early Sep	moderate	38 in.	35 in.	purple yellow
★★★★	<i>grandiflorus</i> 'Fuji White'	white	3 in.	mid Jul-mid Sep	moderate	40 in.	32 in.	purple yellow
★★★★	<i>grandiflorus</i> 'Hakone Blue'	purple blue◆	3 in.	early Jul-early Sep	moderate	42 in.	32 in.	purple yellow
★★★★	<i>grandiflorus</i> 'Hakone White'	white◆	3 in.	mid Jul-early Sep	moderate	43 in.	34 in.	dark purple
★★★★	<i>grandiflorus</i> 'Komachi'	lavender blue	1½ in.	late Jul-mid Sep	moderate	47 in.	34 in.	dark purple
★★★	<i>grandiflorus</i> 'Misato Purple'	purple blue	3½ in.	early Jul-late Sep	low	24 in.	24 in.	dark purple
★★★★	<i>grandiflorus</i> 'Perlmutterchale'	pale pink	3 in.	mid Jul-early Sep	moderate	39 in.	32 in.	dark purple
★★★★	<i>grandiflorus</i> 'Sentimental Blue'	purple blue	3 in.	early Jul-early Sep	moderate	12 in.	12 in.	purple yellow
★★★	<i>grandiflorus</i> 'Shell Pink'	pale pink	3½ in.	early Jul-late Aug	moderate	25 in.	24 in.	purple yellow
★★★★	<i>grandiflorus</i> 'Zwerg'	purple blue	3 in.	mid Jul-early Sep	moderate	20 in.	28 in.	purple yellow

Overall ratings: ★★★★★ good, ★★★ fair.

◆ designates semidouble to double flowers.

¹Flower Coverage refers to the percent of open flowers observed at any time during the bloom period: moderate, to 50%; low, to 20%.