

Plant Evaluation Notes

A Comparative Study of Cultivated Catmints

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Catmints are dependable garden plants prized for their profusion of flowers, long season of bloom and handsome foliage. Gardeners also favor catmints for their easy culture and landscape versatility. In fact, *Nepeta* 'Walker's Low' was named the 2007 Perennial Plant of the Year by the Perennial Plant Association, an honor that places it among other award-winning garden stalwarts such as *Athyrium niponicum* var. *pictum* (Japanese painted fern) and *Phlox paniculata* 'David' (garden phlox).

Nepeta, or catmint, is part of the mint family (Lamiaceae), which includes notable garden favorites such as giant hyssop (*Agastache*), bee balm (*Monarda*) and lamb's ears (*Stachys*), as well as sweetly aromatic herbs such as lavender (*Lavandula*), rosemary (*Rosmarinus*) and thyme (*Thymus*). They all share common family traits including bilabiate (two-lipped) flowers, square stems and opposite leaves, which often contain fragrant essential oils. There are approximately 250 species of *Nepeta* originating in temperate regions of Europe and Asia, with 20 species

commonly grown in gardens. Unfortunately, like the neighborhood alley cat, the pedigree of many cultivated catmints is sketchy.

Catmint flowers are clustered in many-flowered verticillasters (false whorls) above the foliage. Flower color typically ranges from purple-blue to lavender and white, although *Nepeta gowaniana* has yellow blossoms. Catmints have a long bloom period, beginning in late spring to early summer and continuing well into late summer and fall. Many commonly grown catmints feature pubescent, grayish green leaves, although a number of less familiar species have green leaves. Catmints generally have bushy habits with shoots emerging early in the spring and quickly developing into sizeable mounds.

The leaves and stems of many catmints contain nepetalactone, an essential oil, which, when vaporized, triggers a variety of behavioral responses in cats. The narcotic effect of catmint affects cats differently, causing them to become mellow, frisky or aggressive. Rubbing,

licking or biting the leaves releases the nepetalactone vapors that produce the short-lived high, while eating the leaves may act as a sedative. By all accounts, true catnip, *Nepeta cataria*, is particularly intoxicating but several other common catmints also attract cats.

Catmints as a rule prefer to grow in full sun and well-drained soils, and some are drought-tolerant once established. In contrast, *Nepeta subsessilis* is adaptable to

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partial shade and prefers moist soils. Catmints are rarely troubled by diseases or pests, but their health and vigor will quickly decline in poorly drained soils. Fertilizer is unnecessary and encourages floppy stems.

Catmints are well-suited to perennial borders, herb gardens and rockeries, and can be used as ground covers, edging plants or for spilling over rock walls. Billowy catmints soften the hard surfaces of walks, patios and steps, and help blur the formal lines of a border. Catmints are equally wonderful as accents or massed in large groups, and combine nicely with yarrows (*Achillea*), hardy geraniums (*Geranium*), gauras (*Gaura*), sages (*Salvia*) and ornamental grasses. Catmint will undoubtedly draw cats to your garden, but butterflies, bees and hummingbirds love catmints too.

The Evaluation Study

The Chicago Botanic Garden (USDA Hardiness Zone 5b, AHS Plant Heat-Zone 5) evaluated 36 taxa of *Nepeta* between 1999 and 2006. Thirty taxa successfully completed a minimum four-year trial, although some taxa were evaluated for the full eight-year period. The goal of the comparative trial was to identify outstanding *Nepeta* through an assessment



Nepeta 'Walker's Low'

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of their ornamental traits, disease and pest resistance, cultural adaptability and winter hardiness.

Five plants of each taxon were grown in side-by-side plots for easy comparison. The evaluation site received approximately 10 hours of full sun during the growing season and was openly exposed to wind in all directions. The well-drained, clay-loam soil was amended with composted leaves and had a pH of 7.4 throughout the evaluation term.

Maintenance practices were kept to a minimum to simulate home garden culture. Water was provided as needed and no fertilizer was applied. Plants were not routinely cut back after flowering, but occasionally stems were pruned to the ground to rejuvenate foliage and improve plant health. Mulch consisting of shredded leaves and wood chips was placed around the plants for water conservation and weed suppression.

Observations

The comprehensive evaluation of *Nepeta* tracked their ornamental traits; cultural adaptability to the soil and

environmental conditions of the test site; disease and pest problems; and winter injury. In addition, plant habits were closely observed after flowering to determine whether they recovered without treatment or required maintenance to rejuvenate. Plant traits and overall ratings for 30 taxa that completed the trial are noted in Table 1. *Nepeta clarkei*, *N. goviana*, *N. longipes*, *N. racemosa* 'Snowflake', *N. stewartiana* and *N. transcaucasica* 'Blue Infinity' were evaluated for less than four years and are not included in Table 1.

Top-rated Catmints

Four catmints received five-star excellent ratings based on heavy flower production, robust plant habits, good health and winter hardiness. In general, the top-rated catmints featured abundant lavender-blue flowers over a protracted bloom period and hoary green leaves. Plant habits were strong throughout the bloom period, and did not require shearing to rejuvenate habits or health.

Lavender-blue-flowered *Nepeta* 'Joanna Reed' was one of the tidiest catmints in the trial because its stems did

not flop and new growth quickly concealed the declining flower stems. At 24 inches tall and 48 inches wide, 'Joanna Reed' is a bushy catmint producing a wealth of flowers from mid-May through October. Billowy 'Six Hills Giant' is taller than 'Joanna Reed' but exhibited a similarly floriferous and robust habit all summer.

Nepeta xfaassenii 'Select Blue' is a low-mounded catmint, to 14 inches tall and 30 inches wide, that also remained tight and compact well into the late season. Although its flowers are touted as darker blue than typical Faassen's catmint, they are in fact lavender, but with a dark calyx that gives the inflorescence an overall swarthier complexion. *Nepeta racemosa* 'Walker's Low' lived up to its accolades and was a top performer in our trial too. A profusion of luminous blue flowers clothed its upright stems beginning in mid-May. 'Walker's Low' is not as small as its name implies—actually named for a garden in Ireland—but was comparable in height to 'Six Hills Giant'.

Performance Summary

The catmints in the trial were mainly

Table 1: Plant Traits and Performance Ratings

Overall Rating	<i>Nepeta</i>	Flower Color	Bloom Period	Flower Coverage ¹	Leaf Color	Plant Height	Plant Width
★★★★★	'Blue Whisper'	very pale lavender	late Apr-early Sep	good	gray-green	16 in.	33 in.
★★★★★	'Dropmore'	lavender-blue	mid May-early Sep	excellent	gray-green	18 in.	36 in.
★★★★★	'Ice Blue'	very pale blue	early May-late Sep	good	sage green	12 in.	30 in.
★★★★★	'Joanna Reed'	lavender-blue	mid May-late Oct	excellent	dusty green	24 in.	48 in.
★★★★★	'Six Hills Giant'	lavender-blue	early Jun-Oct	excellent	gray-green	30 in.	48 in.
★★★★★	'Veluw's Blauwtje'	pale blue	early Jun-late Sep	good	gray-green	30 in.	36 in.
★★★	<i>amethystina</i> ssp. <i>laciniata</i>	lavender-pink	early Jun-early Sep	fair	silvery green	14 in.	18 in.
★★★★½	<i>xfaassenii</i> 'Kit Cat'	lavender-blue	mid Jun-mid Sep	fair	gray-green	8 in.	20 in.
★★★★★	<i>xfaassenii</i> 'Select Blue'	lavender	late May-mid Sep	excellent	dusty green	14 in.	30 in.
★★★★★	<i>grandiflora</i> 'Bramdean'	blue	mid Jun-late Sep	good	gray-green	32 in.	40 in.
★★★★★	<i>grandiflora</i> 'Dawn to Dusk'	pale pink	mid Jun-late Aug	fair	sage-green	43 in.	36 in.
★★★★★	<i>grandiflora</i> 'Pool Bank'	lavender-blue	mid Jun-early Oct	good	gray-green	52 in.	52 in.
★★★★★	<i>grandiflora</i> 'Wild Cat'	lavender-blue	mid Jun-late Sep	good	green	52 in.	60 in.
★★★	<i>nervosa</i>	blue	early Jun-early Oct	good	green	21 in.	28 in.
★★★	<i>nervosa</i> 'Forncett Select'	blue	mid Jun-late Sep	good	green	20 in.	25 in.
★★★★★	<i>parnassica</i>	lavender	mid Jun-Sep	excellent	medium green	48 in.	32 in.
★★★★★	<i>racemosa</i>	purple-blue	late Apr-Sep	good	gray-green	14 in.	36 in.
★★★★★	<i>racemosa</i> 'Blue Ice'	very pale lavender	early May-mid Sep	good	gray-green	10 in.	30 in.
★★★★★	<i>racemosa</i> 'Blue Wonder'	lavender-blue	late May-mid Sep	excellent	gray-green	18 in.	38 in.
★★★★★	<i>racemosa</i> 'Little Titch'	purple-blue	late Apr-Aug	good	gray-green	10 in.	30 in.
★★★★★	<i>racemosa</i> 'Superba'	lavender	early Jun-Sep	good	gray-green	24 in.	40 in.
★★★★★	<i>racemosa</i> 'Walker's Low'	lavender-blue	mid May-late Sep	excellent	gray-green	30 in.	36 in.
★★★★★	<i>sibirica</i> 'Souvenir d'André Chaudron'	lavender-blue	mid Jun-Sep	excellent	green	36 in.	36 in.
★★★★★	<i>subsessilis</i>	lavender-blue	late May-early Sep	good	green	32 in.	32 in.
★★★★★	<i>subsessilis</i> 'Candy Cat'	light violet	mid Jun-Oct	excellent	green	14 in.	27 in.
★★★★★	<i>subsessilis</i> 'Cool Cat'	lavender	early Jun-Oct	excellent	green	30 in.	36 in.
★★★★★	<i>subsessilis</i> var. <i>sensibilis</i>	lavender-blue	late May-early Sep	good	green	30 in.	30 in.
★★★★★	<i>subsessilis</i> 'Sweet Dreams'	pink	early Jun-late Sep	excellent	green	30 in.	36 in.
★★★★★	<i>ucranica</i>	lavender-blue	mid Jun-late Aug	good	medium green	56 in.	60 in.
★★★★½	<i>yunnanensis</i>	blue	mid Jun-early Sep	excellent	green	47 in.	40 in.

Overall Ratings: ★★★★★ excellent, ★★★★ good, ★★★ fair, ★★ poor; half-star ratings are included in table.

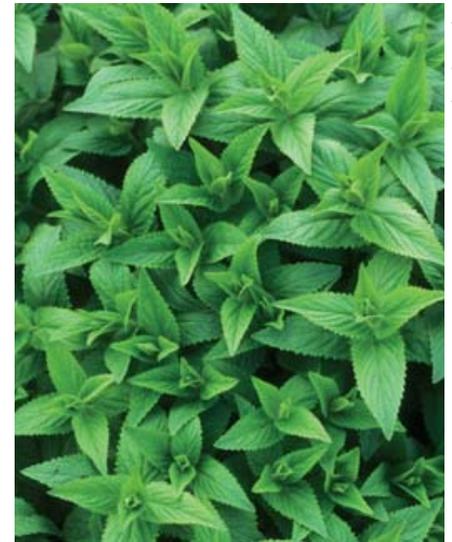
¹Flower coverage ratings: excellent 80-100%; good 60-80%; fair 40-60%; poor <40%.



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Nepeta 'Six Hills Giant'

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Nepeta racemosa 'Blue Ice'

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Nepeta 'Souvenir d'André Chaudron'

lavender-blue-flowered, with little difference noted between 'Dropmore', 'Joanna Reed', 'Kit Cat' or 'Blue Wonder'. The flowers of *Nepeta* 'Ice Blue', 'Blue Whisper' and 'Blue Ice' were the palest lavender fading to white, especially in bright sunlight. The purple-blue flowers of *N. racemosa* were the darkest in the trial, although blue-flowered *N. yunnanensis* was also quite dark. Some catmints featured flowers accentuated by a darker calyx. For example, the pale pink flowers of *N. grandiflora* 'Dawn to Dusk' were highlighted by violet calyces, while *N. grandiflora* 'Pool Bank' featured lavender-blue flowers and reddish purple calyces.

The flowers of *Nepeta xfaassenii*, *N. grandiflora* and *N. racemosa*, as well as most of the hybrid cultivars, were typically small, between $\frac{1}{4}$ inch and $\frac{1}{2}$ inch long, although their inflorescences were often up to 12 inches or longer. The larger flowers of *N. sibirica* ($1\frac{1}{4}$ inches long), *N. subsessilis* (1 inch long), *N. ucranica* ($\frac{3}{4}$ inch long) and *N. yunnanensis* ($1\frac{1}{4}$ inches long) were borne in shorter inflorescences, usually to 6 inches long.

The majority of catmints were consistently strong bloomers, often with flower production above 80% during the peak bloom period, which was usually two to three weeks after the first flowers opened. Distinct bloom periods, marked by a short interval without any flowers present, were occasionally observed. However, it was more common to see flowers blooming continually, albeit at low levels, until the end of the year. Plants were not commonly deadheaded or sheared after flowering; therefore, no observations were made

regarding whether or not flower production increased due to deadheading. 'Walker's Low' and other similar catmints continued to bloom without deadheading, indicating that removing spent flowers is not required to prolong or renew flowering.

Deadheading to improve ornamental display was not necessary for most taxa; however, a few catmints were particularly nonornamental after flowering. For example, *Nepeta subsessilis* and all of its cultivars held their spent flowers brown, which greatly detracted from the display later in the season. The ornamental display of *N. 'Veluw's Blauwtje'* and *N. sibirica 'Souvenir d'André Chaudron'* also benefited from removing spent flowers.

For ease of comparison, catmints were grouped by foliage color; namely, gray-green or green. Describing the leaf color of *Nepeta xfaassenii*, *N. grandiflora* and *N. racemosa* was somewhat subjective and depended on the amount of pubescence, level of sun light and the size and age of the leaves. In general, most gray-green-leaved taxa were described as being dusty green, referring to a medium to light green tinged with gray. When placed side-by-side, the individual leaves of these taxa were similar to or identical in color, although when viewed all together on their respective plants, the foliage appeared slightly more gray- to blue-green. The aromatic leaves of these species were up to $2\frac{1}{2}$ inches long with heart-shaped or truncated leaf bases. Green-leaved species such as *N. nervosa*, *N. sibirica*, *N. subsessilis* and *N. yunnanensis* had larger leaves, ranging from 3 to 4 inches long.

Due to the tendency of many catmints to relax after flowering, the plant habit

rating was based on the habit in the early season, up to and directly following primary bloom. Ratings were not unduly reduced because stems relaxed or flopped after flowering, unless stem regeneration was weak and habit quality did not rebound quickly. Conversely, taxa with stems that flopped consistently before or during the primary bloom period received a lower rating.

The gray-green-leaved catmints typically produced a second flush of new shoots during the primary bloom period, which eventually caused the early flowering stems to be pushed to the outside of the developing shoots. This occasionally resulted in a temporary flattened appearance until the new growth covered up the older stems. It is not essential that the older stems be cut back at this time, because many catmints are self-rejuvenating and retain robust habits without any maintenance. Taxa that remained upright throughout the bloom period and were resilient without shearing included *Nepeta* 'Joanna Reed', *N. 'Six Hills Giant'*, *N. xfaassenii* 'Kit Cat', *N. xfaassenii* 'Select Blue', *N. racemosa*, *N. racemosa* 'Blue Ice', *N. racemosa* 'Blue Wonder', *N. racemosa* 'Little Titch', *N. racemosa* 'Superba' and *N. racemosa* 'Walker's Low'. Conversely, some taxa exhibited messy habits after flowering and were regularly sheared to the ground. This group included *N. 'Veluw's Blauwtje'*, *N. grandiflora* 'Bramdean', *N. grandiflora* 'Dawn to Dusk', *N. grandiflora* 'Pool Bank', *N. parnassica*, *N. sibirica* 'Souvenir d'André Chaudron', *N. ucranica* and *N. yunnanensis*.

Plants were generally left alone to



Carol Freeman

Nepeta racemosa

Mark Rudy

Nepeta subsessilis 'Sweet Dreams'

determine how quickly and to what extent plant health and habit quality rebounded following a period of heavy flower production. In most cases, plant health improved on its own within a few weeks after the primary bloom cycle ended. In some cases, plant health declined sharply and was slow to improve without maintenance. The removal of older stems each year quickened recovery and improved the overall ornamental display of *Nepeta* 'Blue Whisper', *N.* 'Dropmore', *N.* 'Ice Blue' and *N. grandiflora* 'Wild Cat'. Unfortunately, a few catmints suffered serious decline in health after flowering and did not rebound well, whether left alone or sheared; among this group were *N. amethystina* ssp. *laciniata*, *N. nervosa*, *N. nervosa* 'Forngett Select' and *N. yunnanensis*. *Nepeta yunnanensis* was the only taxon with little or no stem regeneration after shearing each summer.

In general, the catmints were well-adapted to the growing conditions of the test site and untroubled by diseases or pests. A section of one test bed was discovered to be draining poorly during a period of heavy rainfall in the spring of 2000, consequently diminishing the health of eight taxa in the area. Just prior to the inundation, *Nepeta racemosa* 'Blue Ice' and 'Little Titch', and *N. transcaucasica* 'Blue Infinity' were planted in this section; all plants declined throughout the summer and were

eventually removed. The health of *N. grandiflora* 'Dawn to Dusk', *N. racemosa* 'Walker's Low', *N. sibirica* 'Souvenir d'André Chaudron', *N. subsessilis* and *N. subsessilis* var. *sensibilis* also declined during the summer of 2000, despite having been planted since 1998. These five taxa were divided and replanted after the drainage issue was corrected in September. A second trial of 'Blue Ice' and 'Little Titch' was started in 2001 but *N. transcaucasica* 'Blue Infinity' was not retested. Foliar chlorosis was an occasional problem for *N. parnassica* and *N. subsessilis*, although *N. subsessilis* var. *sensibilis* suffered moderately severe chlorosis in multiple years.

Overall, the catmints were determined to be winter hardy. Crown loss or plant death was noted in all years except 2005-2006; however, excessive soil moisture or poor drainage during the winter months, rather than a lack of cold hardiness, was the likely cause of injury. Taxa with one or more plants killed during a single winter only included *Nepeta* 'Blue Whisper', *N. xfaassenii* 'Select Blue', *N. grandiflora* 'Dawn to Dusk', *N. grandiflora* 'Pool Bank', *N. parnassica*, *N. racemosa* 'Superba', *N. subsessilis* 'Candy Cat' and *N. subsessilis* 'Sweet Dreams'. Several taxa had crown injury and plant loss in multiple years, including *N. nervosa* and *N. nervosa* 'Forngett Select' (1998-1999; 1999-2000; 2001-2002); *N. yunnanensis* (1999-2000;

2001-2002; 2002-2003); and *N. amethystina* ssp. *laciniata* (2001-2002; 2002-2003; 2003-2004). All plants of *N. clarkei*, *N. govaniiana*, *N. longipes*, *N. racemosa* 'Snowflake' and *N. stewartiana* died during their first winter in the trial. These taxa were not retested; therefore, lack of cold hardiness was not conclusively determined as the cause of death.

Seven of the 30 taxa that completed the trial received fair or poor ratings based on inferior habits (*Nepeta* 'Veluw's Blauwtje'), low flower production (*N. grandiflora* 'Dawn to Dusk'), severe foliar chlorosis (*N. subsessilis* var. *sensibilis*) and/or winter injury (*N. grandiflora* 'Dawn to Dusk' and *N. yunnanensis*). *Nepeta amethystina* ssp. *laciniata*, *N. nervosa* and *N. nervosa* 'Forngett Select' suffered from a general lack of health and vigor throughout the trial, as well as plant losses in successive winters.

Summary

Award-winning *Nepeta* 'Walker's Low' is just one of many outstanding catmints that received top performance ratings in our trials. Twenty-two of the 30 catmints that completed the trial were rated highly for heavy flower production, robust plant habits, good health and winter hardiness. In addition to 'Walker's Low', *N.* 'Joanna Reed', *N.* 'Six Hills Giant' and *N. xfaassenii* 'Select Blue' took top honors.

Catmints are free-flowering, easy-care perennials combining handsome foliage with an exuberant floral display. Their adaptability to average gardens as well as droughty conditions attests to their landscape versatility. Whether in a public parkway or garden border, their vivid blue flowers over many weeks in summertime are an incomparable sight.

References

- Armitage, A. M. 1997. *Herbaceous Perennial Plants*, Second Edition. Champaign, IL: Stipes Publishing.
- Heger, M. and J. Whitman. 1998. *Growing Perennials in Cold Climates*. Chicago, IL: Contemporary Books.
- Rice, G., editor-in-chief. 2006. *American Horticultural Society Encyclopedia of Perennials*. New York, NY: DK Publishing, Inc.

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