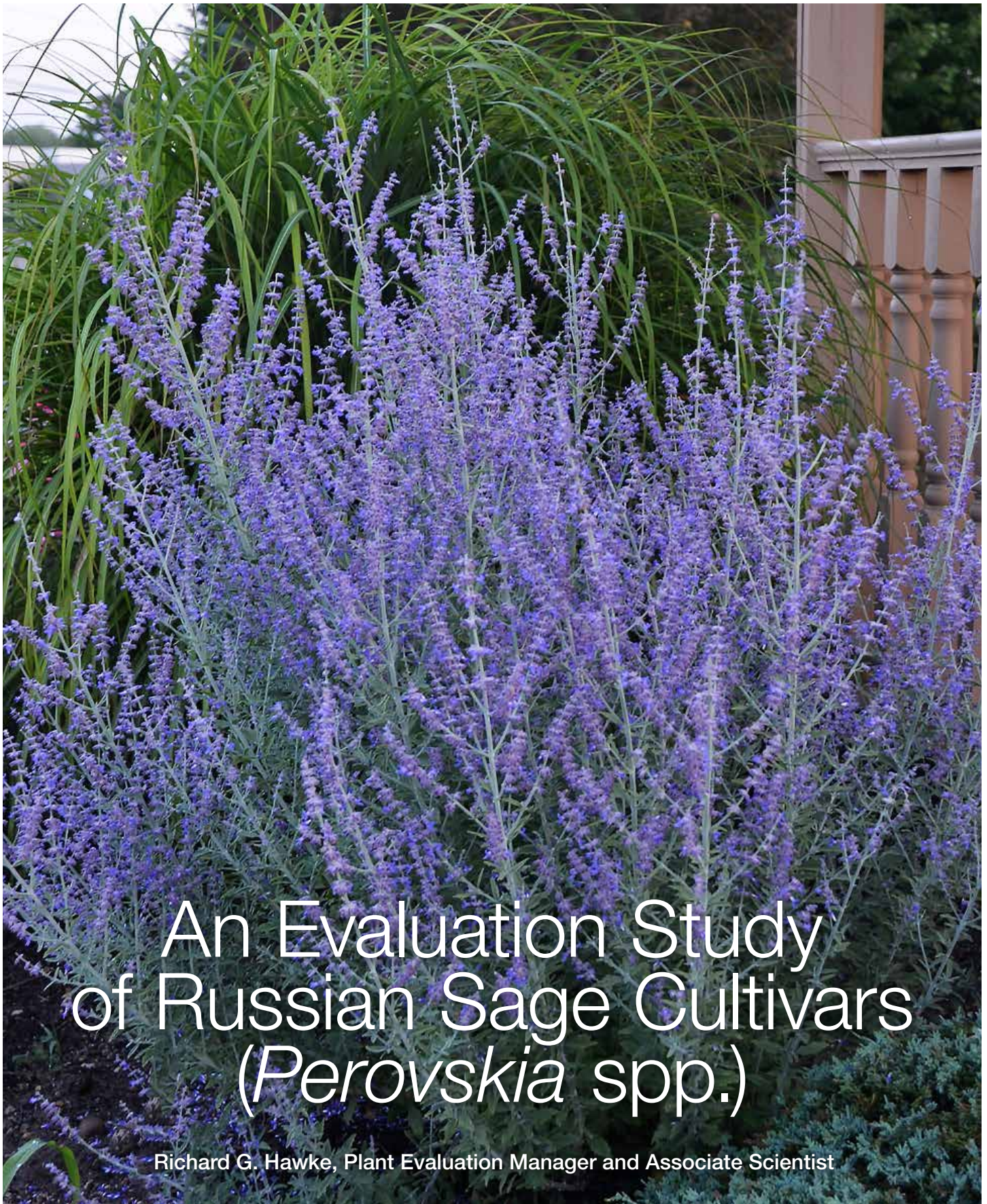




CHICAGO BOTANIC GARDEN

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# An Evaluation Study of Russian Sage Cultivars (*Perovskia* spp.)

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*Perovskia atriplicifolia*

**Russian sage is a popular garden and landscape plant valued for its lavender-blue flowers over a generous bloom period, silvery green leaves, shrubby habit, and companionability with many other plants. Long cultivated as an herbaceous perennial—it was introduced into the United Kingdom in the early twentieth century—Russian sage is technically a subshrub, which is a plant with a woody base that produces herbaceous stems during the growing season. Incidentally, in spite of its common name, Russian sage is not native to Russia.**

*Perovskia* spp. is a member of the mint family (Lamiaceae) with seven species native to southwestern and central Asia.

A number of cultivars attributed to Russian sage (*P. atriplicifolia*) are widely cultivated; another species, Caspian sage (*P. abrotanoides*) is less common in gardens. However, botanical traits of *P. abrotanoides*—most notably bipinnately dissected leaves and narrow flower panicles—are present in some cultivars of *P. atriplicifolia*, leading to the presumption that these cultivars may be hybrids between the two species. Recent taxonomic developments subsumed *Perovskia* into the genus *Salvia*, and *P. atriplicifolia* specifically, has been renamed *Salvia yangii*.

The cultivars of Russian sage offer up a subtle variation in flower colors compared to perennials such as autumn sage (*Salvia greggii*) and garden phlox (*Phlox paniculata*).



*Perovskia atriplicifolia* 'Superba'



ta) that come in a rich variety of colors. Shades of lavender-blue prevail, with slight differences in flower and calyx colors noted among the cultivars. The small bilabiate flowers—typically half an inch long and one-quarter inch wide—feature broad, four-lobed upper lips and narrow lower lips. Flowers open randomly and sporadically from early July into October in Chicago, and although bountiful over the entire season, they are not open in great enough quantities at any time to be truly impactful on their own. Instead, the fuzzy purple calyces that nestle the flowers command the floral display; calyces are colorful before flowers open and persist long after the flowers have dropped. By late summer to early autumn, the fading calyces begin abscising and the ghostly skeletons that remain, together with the silvery stems, provide some ornamental appeal in the winter months.

Like other mint relatives, Russian sage flowers are arranged in whorls or verticillasters along the gray-white downy inflorescent branches. The shape and density of the many-flowered terminal inflorescences influence the floral display; inflorescences range from airy, branching panicles to more compact, crowded panicles. The color show is more intense on cultivars that feature closely spaced flowers such as 'Denim 'n Lace' and 'Blue Jean Baby'; conversely, color is more diffused—often appearing lighter—on cultivars with widely spaced verticillasters such as LITTLE LACE™ and BLUE SPRITZER™.

In a similar manner to the inflorescences, the foliage of *Perovskia atriplicifolia* and *P. abrotanoides* are distinct from each other. The ovate-oblong leaves of *P. atriplicifolia* are entire or sparsely to bluntly toothed, whereas the ovate leaves of *P. abrotanoides* are bipinnatifid, or twice pinnately cleft. The hybrid origin of commercially available Russian sages in the United States is suggested by the foliar traits of the cultivars, which vary from ovate to lanceolate with entire, serrate, or deeply incised margins. The silvery to gray-green leaves range from 1 to 2 inches long and are pungently aromatic when crushed. Like the inflorescences, the square stems are covered in grayish



*Perovskia atriplicifolia* 'Denim 'n Lace'

*Perovskia atriplicifolia* 'Blue Jean Baby'







*Perovskia atriplicifolia*

white hairs. Plant sizes and habits vary among the cultivars. Older cultivars such as ‘Filigran’ and ‘Superba’ tend to be large—4 feet or taller—loose in habit, and may develop lax to floppy stems even in full sun. Newer cultivars such as ‘Blue Jean Baby’ and ‘Rocketman’ have sturdy, compact habits, and are typically less than 3 feet tall.

For best growth and performance, Russian sage requires full sun and good soil drainage, which is essential in surviving wet winters. Russian sage will flower in partial shade but the habit will be lax to sprawling. Warm summers are necessary for strong flower production; however, Russian sage does not like overly hot, humid climates. Drought tolerance, deer resistance, and low maintenance are sustainable aspects of Russian sage. Deadheading is unnecessary and does not increase flower production or lengthen the bloom period. Cut all stems down to at least 6 inches in the spring, although stems are often killed to the snowline or lower in cold climates. Regrowth in the spring will be weaker in wet

conditions. Russian sage is relatively disease-free, although fungal leaf spot and stem canker disease can be problems.

In gardens and landscapes, Russian sage is used to great effect in large masses or as specimen plants. Russian sage is a perfect companion for fine-textured grasses such as prairie dropseed (*Sporobolus heterolepis*) and fountain grass (*Pennisetum alopecuroides*), while its lacy foliage contrasts beautifully with the bolder leaves of garden phloxes (*Phlox paniculata*), coneflowers (*Echinacea* spp.), and beardtongues (*Pentstemon digitalis*). The silvery leaves are a fantastic foil for the vibrantly colored flowers of other perennials and the lavender-blue blossoms nicely complement pink, yellow, orange, purple, and deeper blue flowers. At the Chicago Botanic Garden, sweeps of *Perovskia atriplicifolia* and *Coreopsis verticillata* ‘Golden Shower’ make an inspired pairing on Evening Island—a simple, yet brilliant contrast of color, texture, and form. Russian sages are pollinator-friendly and attract bees, butter-

flies, and hummingbirds. *Perovskia atriplicifolia* was honored as the Perennial Plant of the Year® in 1995; an award recognizing its garden merits and reliability.

### The Evaluation Study

The Chicago Botanic Garden (USDA Hardiness Zone 5b, AHS Plant Heat-Zone 5) completed an eight-year comparative trial of Russian sages in October 2020. A goal of the trial—beyond observing overall garden performance and distinguishing the ornamental traits of commercially available *Perovskia*—was to consider the possible hybrid status of each cultivar based on floral and foliar morphology. Fourteen taxa were evaluated for a minimum of four years between 2013 and 2020; not all taxa had been introduced at the outset of the trial in spring 2013. ‘Blue Jean Baby’, BLUE SPRITZER™, ‘Denim ‘n Lace’, and ‘Rocketman’ entered the trial in the spring of 2015. Sources for a few commonly referenced cultivars such as ‘Blue Spire’ and ‘Blue Haze’ could not be found so were not included in the trial. *Perovskia atriplicifolia*



'Little Spire' was confirmed incorrect in 2015 and removed from the trial but not replaced. Despite the recent nomenclatural reassignment of *Perovskia* to *Salvia*, plant names cited here remain unchanged due to their widespread usage by gardeners and the green industry.

Three plants of each taxon were grown in side-by-side plots for easy comparison of ornamental traits and landscape performance. The full-sun evaluation garden received up to ten hours of sunlight daily during the growing season and was openly exposed to wind in all directions. The clay-loam soil had a pH of 7.4 during the trial period, and although typically well-drained, the site occasionally retained excess moisture for short periods in all seasons.

Maintenance practices were kept to a minimum, thereby allowing the plants to thrive or fail under natural conditions. Trial beds were irrigated via overhead sprinklers as needed, mulched with composted leaves once each summer, and regularly weeded. Moreover, plants were not deadheaded, fertilized, winter mulched, or chemically treated for insects or diseases. Plants were cut back to approximately 6 inches in spring before new growth began.

### The Performance Report

The Russian sages were regularly observed for their cultural adaptability to the soil and environmental conditions of the full-sun evaluation garden; diseases and pests; winter hardiness and survivability; and ornamental qualities associated with leaves, flowers, and plant habits. Table 1 shows the final performance ratings, which are based on foliage and habit quality, flower production and floral display, plant health and vigor, and winter hardiness. Five cultivars earned five-star excellent ratings for their superior floral displays and consistently strong habits.

### Top-rated Russian Sages

The lavender-blue flowers and purple calyces of *Perovskia atriplicifolia* 'Balperobritz' BLUE SPRITZER™ were noticeably lighter in color than other selections and loosely



*Perovskia atriplicifolia* 'Balperobritz' BLUE SPRITZER™

gathered in airy spires. Flower production decreased gradually over the bloom season but the purple calyces extended the color show into early October. Like most cultivars, the floral display finished a week or two before hard frost, which historically is October 15 at the Chicago Botanic Garden. BLUE SPRITZER™ featured egg-shaped, silvery green leaves with entire margins, although some leaves were occasionally serrated. The bushy, vase-shaped habit—30 inches tall and 36 inches wide—and the prolific floral display were reliable every year.

*Perovskia atriplicifolia* 'Blue Jean Baby' is a compact selection just under 30 inches tall and 32 inches wide. The full, bushy plants were consistently uniform in size and shape, which was a trait not always evident on other cultivars. From early July to October, a profusion of lavender-blue and purple flowers were densely borne in compact panicles. The inflorescences began thinning in early August as spent calyces abscised; typically, up to 50 percent of calyces held a vibrant color into early October, although no flowers were present by then. The deeply dissected sage green leaves had a soft textural quality compared to the entire leaves of BLUE SPRITZER™.



*Perovskia atriplicifolia* 'Blue Steel'



*Perovskia atriplicifolia* 'CrazyBlue'



*Perovskia atriplicifolia* 'Novaperlac' LITTLE LACE™

*Perovskia atriplicifolia* 'Blue Steel', a seed cultivar that displayed uniform bushy habits and heavy flower production, compared favorably to vegetative cultivars. The dark lavender-blue flowers, nestled in purple calyces, were borne in airy panicles from mid-July to October. The retention of the calyces varied from year to year, ranging from 30 to 90 percent holding and colorful in early October. The ovate, green leaves had bluntly serrated, wavy margins and were citrus-scented. Plants were roughly as tall as wide—32 inches tall and 34 inches wide—with a comparable but tighter habit than BLUE SPRITZER™.

LITTLE LACE™ (*Perovskia atriplicifolia* 'Novaperlac') provided an impressive flower show from early July into October. The medium lavender-blue flowers with purple calyces were loosely clustered in terminal panicles on sturdy stems. Thinning of the inflorescences began in early August, although up to 30 percent of the calyces remained colorful into early October. The compact bushy plants—32 inches tall and 38 inches wide—had a fine-textured appearance due to the deeply incised gray-green leaves and the airy inflorescences. While not fully comparable, LITTLE LACE™ resembled a shorter, more refined version of 'Filigran'.

The lavender-blue and purple flowers of *Perovskia* 'Denim 'n Lace' were densely clustered in upright panicles, giving the inflorescences a more substantial appearance. A profusion of blooms topped upright, sturdy stems from mid-July to mid-October. Bees and other insects were constant visitors during the long bloom period. The dark purple calyces dominated the floral display and remained colorful after the small flowers had dropped. Calyces began fading and abscising in early September; between 30 and 60 percent of the calyces regularly retained a vibrant color into early October. At 33 inches tall and 48 inches wide, 'Denim 'n Lace' was mid-range between PEEK-A-BLUE® and 'Filigran'; all three cultivars had a lacy appearance because of the dissected foliage.

Certain floral, foliar, and habit traits were similar among the taxa. All exhibited heavy flower production but only about 30 percent of flowers were open at any time, which underscored the significance of the persistent colorful calyces in the overall floral display. Bloom periods generally began in early to mid-July and ended in early to mid-October when most to all of the calyces had faded and/or abscised. Flowers were small, ranging in size from ½ inch to ¾ inch long and ¼ inch to ⅝ inch wide (see Table 1). The margins of the lanceolate to ovate leaves ranged from nearly entire to serrate to incised (see Figure 1).

A lack of habit uniformity and/or inferior traits such as open crowns or lodged stems, were the main reason for lower ratings. After five years in the trial, the habits of 'Longin' and 'Filigran' consisted of several smaller plantlets in a patchy cluster rather than a central crown. LACEY BLUE™ ('Lisslitt') was the only taxon to receive a poor rating because of a consistently inferior habit. The plant health, flower production, and habit quality of LACEY BLUE™ were equal to other varieties until mid-July when crowns splayed open and stems lodged; the plant width noted in Table 1 reflects the broader size due to flopped stems. The habit quality and ornamental display of LACEY BLUE™ recovered slightly in mid-September as new vertical stem growth emerged from crown centers. Unfortunately, the season-long display overall was inferior to all other cultivars.

The Russian sages generally remained healthy and thrived in the trial site. Excessive moisture in the fall of 2015 and the winter of 2015-2016 resulted in the death of several plants. A single plant each of 'Filigran', LITTLE LACE™, 'Rocketman', and PEEK-A-BLUE® died over winter in a poorly drained area of the trial bed, while the remaining plants of each taxon were unaffected. The cause of the fragmenting of a central crown into smaller plantlets was unresolved. Winter crown injury or rhizomatous stems rising apart from the main





*Perovskia atriplicifolia* 'Rocketman'



*Perovskia atriplicifolia* 'Novaperlac' LITTLE LACE™

plant may have contributed to the open habits; age was another possible factor—'Longin' and 'Filigran' were among the oldest plants in the trial in 2018 when this trait was first observed.

Plants were typically killed to within several inches of the ground every winter during the 2013-2020 trial period regardless of snow cover; however, plants of 'CrazyBlue', 'Filigran', and 'Superba' were regularly killed to the snowline only, which varied in height based on annual snowfall. Unexpectedly, all plants were alive below the snowline—a depth of approximately 8 inches—during the winter of 2018-2019, which recorded a nearly record low of -23° Fahrenheit on January 30, 2019. In some years, a small portion of stems did not resprout in the spring after being cut back. Left in place, the bare stubs looked untidy and detracted from habit quality, most noticeably in the spring and early summer. There were no diseases or pests observed during the trial period; foliar chlorosis was a minor issue observed on all taxa in most years.

### Summary

New introductions of Russian sages in recent years have expanded offerings beyond traditional cultivars such as 'Longin',



Loose crown on *Perovskia atriplicifolia* 'Longin'

*Perovskia atriplicifolia* 'Novaperlac' LITTLE LACE™



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*Perovskia atriplicifolia* 'Denim 'n Lace'

'Filigran', and 'Superba'. Plant size is the main distinction between new and old cultivars; most new introductions have shorter, more compact habits. Additionally, more condensed, crowded inflorescences have amplified the color show on some new selections. Like other Russian sages, the compact cultivars also boast long bloom periods, attractive disease-free foliage, and garden reliability. The smaller plants are valuable in restricted urban spaces; however, their neat habits seem more formal than the billowy look of the larger selections.

Five of the 13 taxa that completed the trial received the highest marks for strong plant habits and outstanding floral displays. The top-rated Russian sages were 'Blue Jean Baby', BLUE SPRITZER™, 'Blue Steel', 'Denim 'n Lace', and LITTLE LACE™. All taxa in the trial had impressive floral displays over a protracted period, but typically lost points for inferior habits. LACEY BLUE™ was the only taxon to receive a poor overall

rating, which was solely due to its persistent floppy habit. Several taxa exhibited patchy crowns of small satellite plants surrounding a declining central crown. While perhaps more tolerable in mass plantings, the loose, irregular habits would be less desirable for a specimen plant.

One goal of the trial was to determine, if possible, the hybrid nature of Russian sages in cultivation. The trial revealed that many of the botanical traits of the various cultivars appear to be intermediate between *Perovskia atriplicifolia* and *P. abrotanoides*. However, this is based on the gross appearance of the cultivars and not on any genetic information. The Royal Horticultural Society has adopted the name change from *P. atriplicifolia* to *Salvia yangii*, although it will undoubtedly take time for the new name to settle with gardeners.

Cover photo: *Perovskia atriplicifolia* 'Rocketman' © Walters Gardens, Inc.

Prized for their fuzzy lavender-blue flowers and silvery-filigreed foliage, Russian sage remains popular because they are dependable garden plants, are suitable to a variety of landscapes, and are great companions to a myriad of perennials and grasses. The newer cultivars exemplify the positive aspects of Russian sage, while increasing their versatility in smaller spaces. Whether tall or short, Russian sages provide structure and a long season of bloom that gardeners can count on.

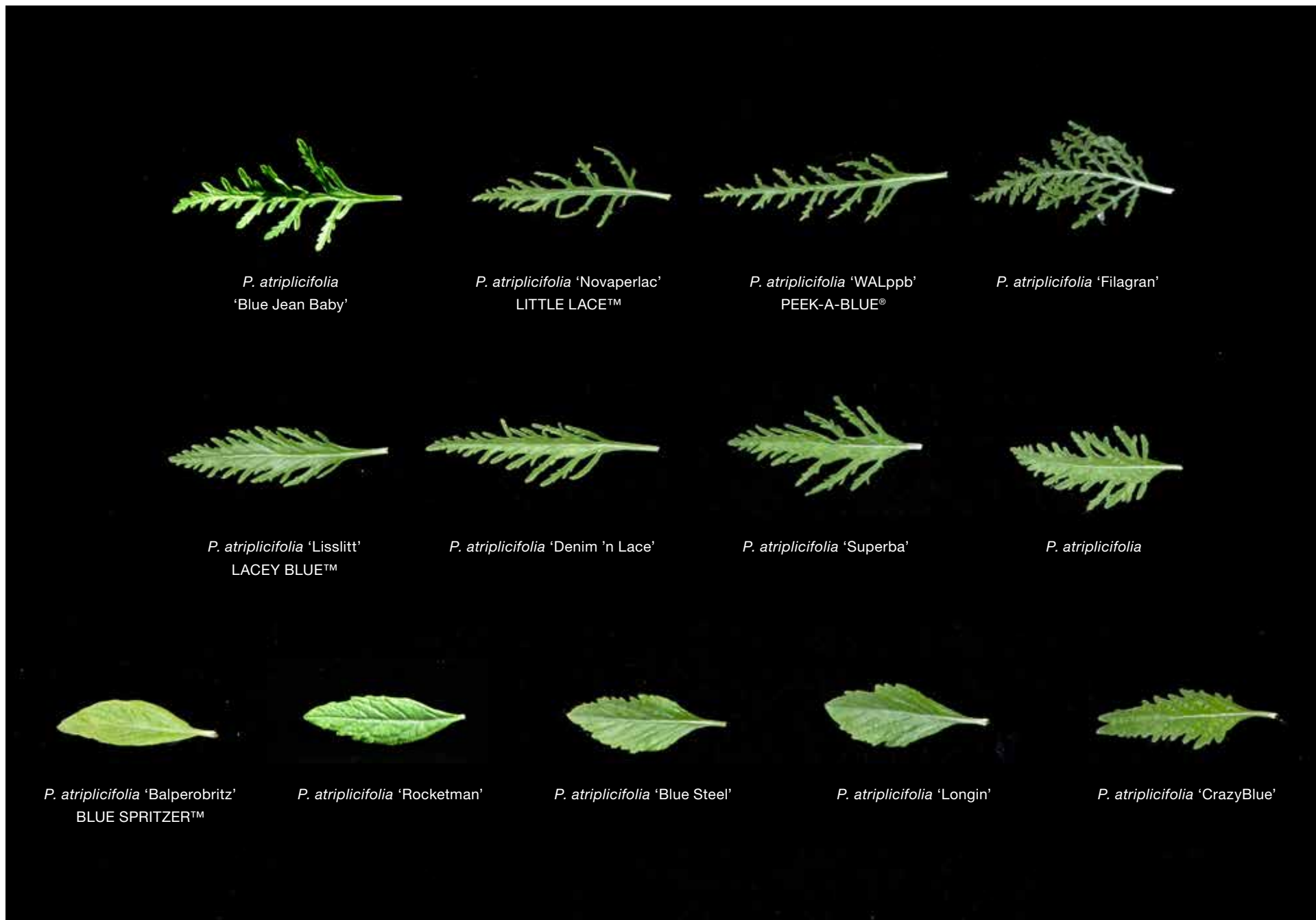
### References

Armitage, A.M. 2020. *Herbaceous Perennial Plants*, Fourth Edition. Champaign, IL: Stipes Publishing L.L.C.

Phillips, E. and C.C. Burrell. 2004. *Rodale's Illustrated Encyclopedia of Perennials*. Emmaus, PA: Rodale Inc.

Royal Horticultural Society, England. [rhs.org.uk](http://rhs.org.uk).







**Table 1: Observed plant traits and performance ratings**

Rating <sup>1</sup>	<i>Perovskia</i>	Flower Color (Long/Wide)	Calyx Color (Long/Wide)	Flower Size	Inflorescence Size <sup>2</sup>	Bloom Period	Height	Width	Leaf Shape
★★★	<i>atriplicifolia</i>	lavender-blue	light purple	5/8 in. / 3/8 in.	18 in./7 in.	early July to mid-October	55 in.	58 in.	ovate, dissected
★★★★★	<i>atriplicifolia</i> 'Balperobritz' BLUE SPRITZER™	light lavender-blue	light purple	1/2 in. / 3/8 in.	15 in./8 in.	mid-July to early October	30 in.	32 in.	ovate, entire
★★★★★	<i>atriplicifolia</i> 'Blue Jean Baby'	lavender-blue	purple	1/2 in. / 1/4 in.	14 in./5 in.	early July to early October	28 in.	32 in.	lanceolate, deeply dissected
★★★★★	<i>atriplicifolia</i> 'Blue Steel'	dark lavender-blue	purple	1/2 in. / 1/4 in.	13 in./6 in.	mid-July to early October	32 in.	34 in.	ovate, bluntly serrated
★★★★	<i>atriplicifolia</i> 'CrazyBlue'	dark lavender-blue	purple	1/2 in. / 3/8 in.	19 in./11 in.	early July to mid-October	35 in.	48 in.	ovate, shallowly dissected
★★★	<i>atriplicifolia</i> 'Filigran'	lavender-blue	purple	1/2 in. / 1/4 in.	16 in./7 in.	early July to mid-October	48 in.	64 in.	ovate, deeply dissected
★★	<i>atriplicifolia</i> 'Lisslitt' LACEY BLUE™	medium lavender-blue	silvery purple	1/2 in. / 1/4 in.	14 in./5 in.	mid-July to early October	22 in.	48 in.	lanceolate, moderately dissected
★★★	<i>atriplicifolia</i> 'Longin'	light lavender-blue	purple	1/2 in. / 1/4 in.	11 in./4 in.	mid-July to mid-October	48 in.	45 in.	ovate, slightly serrated
★★★★★	<i>atriplicifolia</i> 'Novaperlac' LITTLE LACE™	medium lavender-blue	purple	1/2 in. / 1/4 in.	16 in./6 in.	early July to early October	32 in.	38 in.	lanceolate, deeply dissected
★★★★	<i>atriplicifolia</i> 'Rocketman'	lavender	purple	1/2 in. / 1/4 in.	9 in./3 in.	early July to early October	22 in.	22 in.	lanceolate, entire to serrated
★★★★	<i>atriplicifolia</i> 'Superba'	light lavender-blue	purple	5/8 in. / 3/8 in.	24 in./9 in.	early July to early October	50 in.	60 in.	ovate, moderately dissected
★★★	<i>atriplicifolia</i> 'WALppb' PEEK-A-BLUE®	lavender-blue	silvery purple	5/8 in. / 1/4 in.	8 in./8 in.	mid-July to early October	22 in.	30 in.	lanceolate, deeply dissected
★★★★★	'Denim 'n Lace'	lavender-blue	purple	1/2 in. / 1/4 in.	24 in./8 in.	mid-July to mid-October	33 in.	48 in.	lanceolate, shallowly dissected

<sup>1</sup>Rating: ★★★★★ excellent, ★★★★ good, ★★★ fair, ★★ poor

<sup>2</sup>Inflorescence Size: length measured from tip to lowest floral branching on inflorescences