

# A Comparative Study of *Tradescantia* Cultivars

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*Tradescantia* 'Zwanenburg Blue'

**G**ardeners are very good at categorizing plants by flower color, plant size, garden usefulness, or any number of other delineations. They further rank plants in a hierarchy of garden-worthiness ranging from rare or must-have to tried-and-true or common. Where a plant falls on that continuum is subjective since gardening is a personal endeavor. For instance, *Tradescantia*, or spiderworts, are often cited as common garden plants, but are they in truth commonly grown? Spiderworts seem to be grown less than the wide selection of available cultivars would imply. While their distinctive flowers and lush foliage are undoubtedly appealing to many gardeners, perhaps their midsummer unruliness keeps other gardeners at bay.

There are approximately 70 herbaceous species of *Tradescantia* native to the New World. Linnaeus named the genus for John Tradescant the Elder, an eminent English plant explorer of the seventeenth century.

Despite the fact that *Tradescantia* is in the predominantly tropical dayflower family (Commelinaceae), spiderworts are indigenous to most of the continental United States, with species variously adapted to full sun, deep shade, high or low temperatures, and xeric habitats. *Tradescantia virginiana*, Virginia spiderwort, has a long ethnobotanical and horticultural history. Native Americans used Virginia spiderwort to treat a variety of ailments from stomachaches to cancer, as well as for food. It was among the first North American plants to be introduced to European gardens in the early 1600s. Interestingly, some spiderworts are natural Geiger counters of a sort. The fuzzy filament hairs in the flower change from blue to pink when exposed to low levels of nuclear radiation.

Many temperate spiderworts are useful garden plants, while tropical species such as wandering Jew (*Tradescantia zebrina*) and Moses-in-a-boat (*T. spathacea*) are

valuable houseplants. Most of the commercially available and commonly grown hardy garden spiderworts are of complex hybrid origin, derived from crosses between *T. virginiana*, *T. ohiensis* (bluejacket), and *T. subaspera* (zigzag spiderwort), which occur naturally in overlapping ranges in the eastern United States. Selections of these hybrids are often lumped erroneously under the invalidly named *T. xandersoniana*, but are more appropriately designated Andersoniana Group.

A kaleidoscopic palette of colors—sumptuous blues, rich purples, lush violets, vibrant pinks, and brilliant whites—mark the ephemeral blossoms of spiderworts. Flowers last for one day only; hence, the origin of the common name dayflower. Flowers are actually open for less than a day, since the delicate petals curl up by afternoon as the heat of the day rises. Flowers may remain open longer on cool or cloudy days or when grown in shade.



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*Tradescantia* 'Blue Stone'

Another common name, trinity flower, hints at the tripartite composition of the flower—three sepals, three petals, and six stamens. Up close, the whimsical flowers are vaguely Seuss-like in appearance. Bright yellow anthers sit atop fuzzy filaments within the center of the broadly triangular petals. The 2- to 3-inch tricorne flowers are clustered in terminal umbels, with buds opening daily over several weeks in late spring and early summer. Flowering stalls as summer enters its dog days; in fact, the entire plant may go dormant after the first flower cycle. Flowering resumes sporadically in the cool latter days of summer and early autumn. A single spiderwort plant is self-sterile, which means that on its own it will not produce seed. However, when two or more plants are grown together, an abundance of seed is ensured. Plants resulting from this seed will probably not look like the parents.

Although spiderworts are free-flowering, there always seems to be more plant than flower. The slightly fleshy, strap-shaped leaves come in shades of green but may be blue-green, chartreuse, or yellow. Spiderworts form dense, fairly wide-spreading clumps with upright to arching succulent stems to 24 inches tall. The common name, spiderwort, refers likely to the mucilaginous secretion exuded from cut or broken stems, which hardens into web-like threads. The Andersoniana Group closely resembles each other in habit but offers a variety of flower color, plant size, and foliage color.

Spiderworts are easy-care plants for full sun to partial shade. Flower production is better in full sun, but part shade is beneficial where summer temperatures are hot. Spiderworts prefer moist, well-drained soils, but do not like their roots to be overly wet or dry. Withered

petals tend to hang brown on the plant, so deadheading is recommended to improve appearance. Removing spent flowers will also reduce the chance of seedlings that may be inferior or become weedy. Leaves tend to decline naturally after the first bloom period, or may go dormant prematurely in hot, dry weather. Providing extra moisture during the summer may slow down foliar decline. Shearing stems to the ground when foliar quality deteriorates or plants become overgrown or untidy in appearance encourages healthy new leaves later in the season. Providing supplemental water after shearing will hasten regrowth of fresh foliage. Slugs, snails, leaf spot, and foliar rust may be problems. Foliar diseases are exacerbated by frequent overhead irrigation. Garden spiderworts are winter hardy in USDA Zones 4-9.

While the jewel-toned flowers of spiderworts are beautiful in garden borders, their slightly wild mien lends itself especially well to informal landscapes such as cottage gardens, woodlands, and waterside plantings. Butterflies and bees frantically visit the ephemeral blossoms, making the most of the short bloom days. In their spring and early summer glory, spiderworts are great companions to sunny garden neighbors such as geraniums (*Geranium*), catmints (*Nepeta*), bluestars (*Amsonia*), and grasses. In shady gardens, hostas (*Hosta*), astilbes (*Astilbe*), lungworts (*Pulmonaria*), and ferns are among their perfect cohorts. Planted cheek by jowl with other perennials will leave a less obvious hole when spiderworts get cut back or go dormant in midsummer.

*Tradescantia* 'Bilberry Ice'

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## The Evaluation Study

Between 2005 and 2009, the Chicago Botanic Garden (USDA Hardiness Zone 5b, AHS Plant Heat Zone 5) evaluated 31 taxa of *Tradescantia* in full-sun trials. The goal of the comparative trial was to identify outstanding spiderworts for the Upper Midwest. The study concentrated on the Andersoniana Group because of their adaptability to a variety of cultural conditions. The trial was generously supported by a grant from the Perennial Plant Association, Hilliard, Ohio.

Five plants of each taxon were grown in side-by-side plots for easy comparison of ornamental traits and landscape performance. The evaluation garden was openly exposed to wind in all directions and received approximately 10 hours of full sun daily during the growing season, an average of 171 days per year. The clay-loam soil was amended with composted leaves and had a pH of 7.4 throughout the evaluation term. The site was normally well drained, but at times the soil retained moisture for short periods in summer and winter.

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.



*Tradescantia ohienensis*

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*Tradescantia* 'Sylvana'

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## Performance Report

At the outset of the comparative trial, 31 taxa, mainly of the Andersoniana Group, were acquired from commercial sources. Plants were monitored regularly during the evaluation period for descriptive traits such as flower color, bloom period, plant size, and plant habit. In addition, data was collected on disease and pest problems, winter injury, and habit quality and plant health issues related to and/or affected by cultural and environmental conditions. Fourteen hardy garden spiderworts received four-star good ratings for their strong habits, good flower production, and greater resistance to fungal leaf spotting.

Twenty-six of the 31 taxa finished the five-year trial. Table 1 (next page) lists their traits and final performance ratings, which are based on flower production, habit quality (prior to and following midsummer decline), plant health, and winter hardiness. Of the five eliminated taxa, 'Charlotte', 'Osprey', and 'Satin Doll' were incorrectly identified and not retested. 'Sweet Kate' is synonymous with 'Blue and Gold', which is the valid name. And *Tradescantia* 'Blushing Bride' died during the winter of 2006–07 and was not retested. Wherever possible, nomenclature follows the recommendations of the Royal Horticultural Society (RHS Plant Finder, 2010).

By standard measures of flower production, spiderworts would not be considered exceptionally strong bloomers. Although most plants produced an abundance of many-flowered inflorescences over the course of



*Tradescantia* 'Blue and Gold' with leaf-spotting fungus.

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*Tradescantia* 'Red Cloud'

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the bloom period, usually one cluster per stem, only one or a few flowers per cluster were open at any time. A good floral display consisted of open flowers on 50 percent of inflorescences at peak bloom. The highest flower coverage, 70 percent at peak, was observed on 'Red Cloud', which was also the most robust of the cultivars. Additionally, good floral displays were consistently observed on 'Blue Stone', 'Concord Grape', 'Innocence', 'Karminglut', 'Mariella', 'Perinne's Pink', 'Snowcap', 'Sylvana', 'White Doll', and 'Zwanenburg Blue'. Conversely, 'Lord Nelson' and 'Rubra' were the least floriferous cultivars, with only 10 percent coverage on average.

Of course, flower coverage varied greatly depending on the time of day. The best floral displays occurred in the morning and were either greatly reduced or finished shortly after noon. While open flowers in late afternoon were uncommon, 'Red Cloud' reliably produced flowers throughout the day. In addition, late-day flowers were occasionally observed on 'Bilberry Ice', 'Blue Stone', 'Concord Grape', 'Innocence', 'Karminglut', 'Little Doll', 'Perinne's Pink', 'Snowcap', 'Valour', 'White Doll', and 'Zwanenburg Blue'. Unlike other cultivars, the flowers of 'Lord Nelson' did not open fully, which further reduced its overall floral impression. *Tradescantia* 'Blushing Bride' did not bloom.

Table 1: Plant Traits and Ratings

Overall Rating	<i>Tradescantia</i> <sup>1</sup>	Flower Color	Flower Size	Bloom Period <sup>2</sup>	Leaf Color	Plant Height	Plant Width	Leaf Spotting <sup>3</sup>
★★★★	'Angel Eyes'	white, purple	1¼ in.	early Jun-late Sep	green	18 in.	32 in.	low
★★★★	'Bilberry Ice' (AG)	white, lavender	1½ in.	early Jun-mid Sep	green	22 in.	36 in.	low
★★★	'Blue and Gold' (AG)	purple blue	1¾ in.	late May-mid Sep	yellow	16 in.	30 in.	moderate
★★★★	'Blue Stone' (AG)	lavender blue	2 in.	mid May-late Sep	yellow green	22 in.	36 in.	low
★★★★	'Concord Grape' (AG)	purple	1½ in.	mid May-Sep	blue green	24 in.	36 in.	low
★★★★	'Danielle' (AG)	white	2 in.	late May-mid Aug	yellow green	20 in.	32 in.	low
★★★	'Innocence' (AG)	white	2 in.	early Jun-Sep	yellow green	16 in.	30 in.	moderate
★★★★	'Jeannene'	purple	1½ in.	late May-late Sep	green	20 in.	34 in.	low
★★★	'Karminglut' (AG)	purple	2 in.	early Jun-Sep	yellow green	22 in.	40 in.	moderate
★★★	'Little Doll' (AG)	light blue	1½ in.	late May-mid Sep	green	12 in.	32 in.	severe
★★★	'Lord Nelson'	dark purple	1 in.	early Jun-late Aug	blue green	15 in.	26 in.	low
★★★	'Mariella' (AG)	purple blue	2 in.	early Jun-Sep	green	20 in.	36 in.	moderate
★★★★	'Mrs. Loewer' (AG)	lavender blue	1½ in.	mid Jun-mid Sep	blue green	18 in.	34 in.	low
★★★★	'Perinne's Pink' (AG)	pink	1½ in.	early Jun-late Sep	blue green	24 in.	40 in.	low
★★★★	'Purple Profusion'	light purple	1¾ in.	mid May-mid Sep	blue green	15 in.	30 in.	low
★★★	'Red Cloud'	rosy red	1¼ in.	mid May-late Jul	green	24 in.	60 in.	low
★★★★	'Red Grape' (AG)	magenta	1½ in.	mid Jun-mid Sep	blue green	24 in.	36 in.	low
★★★	'Rubra' (AG)	deep violet	1½ in.	early Jun-mid Sep	green	20 in.	36 in.	low
★★★	'Snowcap'	white	1½ in.	late May-mid Aug	yellow green	20 in.	32 in.	moderate
★★★	'Sylvana' (AG)	violet magenta	1¾ in.	early Jun-early Oct	green	22 in.	30 in.	severe
★★★★	'Therese'	pink	1½ in.	early Jun-Sep	gray green	24 in.	30 in.	low
★★★	'Valour' (AG)	purple	1½ in.	late May-early Sep	green	18 in.	30 in.	moderate
★★★	'White Doll'	white	1½ in.	early Jun-mid Sep	yellow green	18 in.	32 in.	severe
★★★★	'Zwanenburg Blue' (AG)	purple blue	2 in.	late May-mid Sep	green	20 in.	36 in.	low
★★★★	<i>ohiensis</i>	lavender blue	1¼ in.	mid Jun-early Sep	blue green	18 in.	36 in.	low
★★★★	<i>virginiana</i> 'Caerulea Plena'	blue, double	1½ in.	early Jun-early Aug	green	24 in.	34 in.	low

Overall Ratings: ★★★★★ excellent, ★★★★ good, ★★★ fair, ★★ poor, ★ very poor

<sup>1</sup>(AG) designates Andersoniana Group per Royal Horticultural Society

<sup>2</sup>Bloom Period: inclusive of initial bloom cycle and subsequent late-season flowering

<sup>3</sup>Leaf Spotting: severe >50%; moderate 21-50%; low <20%

Spiderwort flowers do not "melt away" as readily as noted in some garden references. In fact, the withered petals remained attached to the plant for an extended period. Although the brown petals eventually fall away, they give an impression of untidiness or poor health that might trouble some gardeners. Given their ephemeral flowering habit—each blossom opens for one day only—regular deadheading to eliminate the long-lasting spent blossoms would improve the display.

Deadheading also decreases reseeding potential. A spiderwort plant is self-sterile, which means that no seed is produced unless another plant is nearby. However, when several plants are grown together they will freely produce seed. For example, 'Sylvana' was in the trial garden by itself from 2002 until 2005 and did not produce any seedlings during this period, but seedlings were discovered growing nearby two years after the start of the

full trial in May 2005. The first flowering seedlings were observed in 2007, which coincides with the two-year period that it takes for spiderworts to flower from seed. Abundant multicolored seedlings were present in the trial plots in 2007, 2008, and 2009, often growing directly out of the crown of an established spiderwort. In fact, the proliferation of seedlings became a serious weed issue in the final years of the trial.

Without exception, the trial plants had good habits early in the season. Fresh grassy leaves—green, yellow-green, blue-green, or yellow—formed tight clumps in spring. Plant habits generally became upright bushy to broadly mounded as they matured in early summer. ‘Red Cloud’ always had the lushest habit but became floppy at the start of the bloom period and was often messy by early June. It was the only cultivar to also have its new growth flop in autumn. ‘Blue and Gold’, and likewise ‘Sweet Kate’, were by far the least vigorous taxa in the trial, due in part to winter crown loss and the ensuing competition from seedlings. By 2009, only a small portion of the original plants were still living.

Hardy garden spiderworts naturally decline and/or die back as summer temperatures increase, especially if adequate water is not available. By the end of the primary bloom cycle, typically seven to eight weeks after first bloom, plant health and habit quality began declining. In alternate years, plants were either allowed to decline naturally or were cut back to the base in early August. There was no significant difference noted in the speed of rejuvenation between sheared and unshaired plants; however, unshaired plants were unsightly during this period. Most plants regenerated healthy foliage by early September, although ‘Lord Nelson’ and ‘Mariella’ were particularly slow to resprout and formed only weak mounds by the end of the season.

Unfortunately, fungal leaf spotting exacerbated the tatty appearance of the foliage as summer progressed, perhaps accelerating the natural decline of the foliage. In July 2007 infected leaves and stems were tested for pathogens by the University of Illinois Extension Plant Clinic. The fruiting bodies on the leaves and stems yielded spores typical of *Colletotrichum* spp., a causal agent of anthracnose on *Tradescantia* spp. Fruiting bodies and spores of *Phyllosticta* spp., which is reported to cause leaf spot on *Tradescantia* spp., were also detected on the samples. Rather than differentiating between the two fungi on every leaf, we designated the problem generically as leaf spotting.

The onset of leaf spotting varied each year, from May to August, but the earliest incidence of infection was noted on May 11, 2007. Early in the season foliar streaking was mostly cosmetic and did not seem to adversely affect plant health. As leaf spotting worsened, plant health declined accordingly. All taxa had leaf spotting at varying levels in one or more years, but the greatest prevalence was observed in 2006. Twenty-six of the 31 taxa were infected at some level, with severe leaf spot damage on more than half of the taxa. Except in 2005 when no leaf spotting was observed, the lowest infection levels were noted in 2007 and 2009. Sixteen of the 20 taxa with foliar disease in 2009 had low-level infections under 10 percent. It is important to note that plants were cut back in 2006 and 2008; therefore, it is possible that the reduction in the number of severe infections in 2007 (none) and 2009 (2) was due in part to the removal of diseased stems early in the preceding season. We observed that taxa with blue-green leaves were generally less troubled by leaf

spotting than green-leaved plants. Infection levels on blue-green-leaved plants in most years were low or none but never severe; however, ‘Lord Nelson’, ‘Perinne’s Pink’, and ‘Purple Profusion’ had moderate infections in 2006 only. Winter hardiness was not a concern in the spiderwort trial. With the exception of ‘Blushing Bride’, the majority of taxa is listed hardy to at least USDA Zone 5. Crown injury and plant loss was sporadic and insignificant overall; however, most injury was noted in 2006–07, which was the coldest winter of the trial (see Table 2 on page 7). ‘Blushing Bride’ lived through one winter but died during the second winter of 2006–07. In addition, two plants of ‘Blue and Gold’ had severe crown loss in 2006–07; four of the five plants of ‘Mrs. Loewer’ had 75 percent crown loss in 2006–07; one plant of ‘Red Grape’ had 75 percent crown loss in 2006–07; two plants of *Tradescantia ohiensis* died and three suffered 75 percent crown loss in 2006–07; and two plants of ‘Lord Nelson’ suffered 75 percent crown loss in 2005–06.



*Tradescantia* ‘Innocence’





Jessie V. Stevens

*Tradescantia* 'Concord Grape'**Table 2: Weather Summary for 2005–2009**

	2005	2006	2007	2008	2009
Lowest temperature °F (°C)	-2 (-19)	-8 (-22)	-10 (-23)	-6 (-21)	-17 (-27)
Lowest temperature date	12/7	2/18	3/5	1/20	1/16
Highest temperature °F (°C)	100 (38)	100 (38)	96 (35)	93 (34)	96 (35)
Highest temperature date	6/24	7/31	7/9	7/17	8/9
Number of growing season days <sup>a</sup>	158	143	196	181	175
Number of days below 0°F (-18°C)	2	2	11	16	8
Number of days above 90°F (32°C)	24	15	20	6	7
Last frost date	5/4	5/7	4/16	4/30	4/18
First frost date	10/23	10/12	10/28	10/28	10/10
Annual rainfall in inches (cm) <sup>b</sup>	24.4 (61.9)	42.5 (107.9)	41.0 (104.1)	49.5 (125.7)	38.8 (95.5)
Annual snowfall in inches (cm) <sup>c</sup>	44.4 (112.7)	23.4 (59.4)	38.5 (97.8)	78.5 (199.4)	28.8 (75.2)

<sup>a</sup>Average length of growing season is 161 days.

<sup>b</sup>Average rainfall is 35.8 inches (90.9 cm).

<sup>c</sup>Average snowfall is 38.1 inches (96.8 cm).

Data collected at Chicago Botanic Garden weather station

Latitude: 41°51'N. Longitude: 87°37'W. Altitude: 578.74 ft. (176.4m)

## Summary

Just over half of the spiderworts in the study received four-star good ratings for their performance and ornamental qualities. With few exceptions, the spiderworts were fully adapted to the environmental and cultural conditions of the test garden. The majority of the cultivars closely resembled each other in habit, but they exhibited a variety of flower colors, plant sizes, and foliage colors. A pull out reference table showing traits and performance ratings can be found on page 9.

Foliar disease, midsummer decline in health, and reseeding were the primary challenges to growing spiderworts in the trial. The mono-cultural nature of a comparative trial contributes unnaturally to increased levels of a particular disease such as fungal leaf spot of *Tradescantia*. In a typical garden setting where fewer plants of one type are grown, it is likely that disease levels would be greatly reduced. Recommendations to

prevent or minimize fungal diseases include selecting disease-resistant plants, eliminating overhead watering, and removing all diseased plant parts when they occur or at the end of the season.

The natural decline of spiderworts after flowering can cause consternation for some gardeners. Growing spiderworts in light shade and supplying adequate water throughout the growing season may hold off the onset of foliar decline. As plants begin to turn shabby from decline or leaf spotting, shearing stems to the base will encourage a flush of new growth later in the season. An additional benefit to removing withered stems and spent flowers is that reseeding will be reduced, thereby decreasing the potential weediness of spiderworts.

Spiderworts are useful in a variety of garden settings, particularly in landscapes such as

cottage gardens, woodland edges, and meadow plantings. Understanding their nature will ensure that gardeners know how to deal with them come midsummer. Spiderworts may be pegged as common garden plants, but their unique flowers and strong habits mark them as uncommonly good garden plants.

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*Tradescantia* 'Perrine's Pink'

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