



By Paul Pilon

Echinacea 'Cheyenne Spirit'

A STRONG GARDEN PERFORMER, THIS RICH-COLORED CONEFLOWER IS A FIRST-YEAR FLOWERING PERENNIAL THAT REQUIRES LITTLE MAINTENANCE.



'Cheyenne Spirit' brings together a mixture of rich shades of yellow, orange, purple and red. (Photos: Kieft Seed)

Echinacea has become a mainstay in the American landscape. Although this perennial genera is not new to the industry, the last decade has seen an abundance of colorful new cultivars hitting the marketplace and reviving the interest of a traditional perennial. Until recently, the new and improved coneflowers have largely been available through tissue culture; this is where 'Cheyenne Spirit' comes into the picture.

Echinacea 'Cheyenne Spirit' from Kieft Seed is an innovation in breeding and provides a brilliant color range available for the first time from seed. Well-branched plants, compact growing habit and first-year flowering are only a few of the desirable attributes it offers. 'Cheyenne Spirit' currently consists of a mixture of rich shades of cream, golden yellow, orange, purple, rosy-red, scarlet and tomato-red. The flowers develop atop very sturdy stems in mid-summer.

In the landscape it performs best in locations with full sun to partial shade and develops attractive clumps reaching 18 to 24 inches tall by 16 to 20 inches wide. With hardiness to Zone 4, this coneflower can be grown throughout much of the country. 'Cheyenne Spirit' does not require a lot of water and can be used

in perennial borders, mass plantings, butterfly gardens and as a cut flower.

With its great attributes and strong garden performance, echinacea 'Cheyenne Spirit' was a Fleuroselect Gold Medal Winner in 2012 and also was recognized as an All-American Selections Flower Award winner in 2013. 'Cheyenne Spirit' is a well-branched, strong-performing, low-maintenance and first-year flowering perennial that deserves the accolades it has received and would be a worthwhile addition to any perennial program.

Propagation

Echinacea 'Cheyenne Spirit' is easily propagated by seed. The seeds are commonly sown into 288-cell or larger tray sizes. It is best to cover the seed lightly with germination mix or medium-grade vermiculite to help keep the seeds moist during germination. Moisten the trays after sowing and move them to an environment where warm temperatures can be maintained. The most rapid and uniform germination occurs with soil temperatures between 68 to 77° F. Placing the trays inside a germination chamber will result in the fastest germination and better germination rates, but chambers are not critical in order to successfully germinate echinacea. During germination maintain high humidity (95 percent) around

the seeds and keep the growing media uniformly moist but not wet. The seeds begin to germinate in four to five days; it may take up to 14 days for the seeds to finish germinating.

Once germinated, the moisture levels can be reduced slightly, keeping the media surface wet to the touch, but not saturated. The soil temperatures can also be lowered to 68 to 72° F following germination. Begin applying water soluble fertilizers containing micronutrients once the true leaves are present, applying 75- to 100-ppm nitrogen with every irrigation. At these temperatures, it will take five to six weeks from sowing to produce a transplant-ready 288-cell plug.

Cover is scheduled in more detail below; however, there are some strategies that can be implemented during propagation to improve the appearance and flowering of the final containers. 'Cheyenne Spirit' is a short day-long day plant which flowers best when the plants are grown under short day lengths for several weeks prior to growing them under long days. Research results indicate the best flowering is obtained when 10 to 12 hour day lengths are provided in the plug stage beginning once two true leaves have developed. Continue short days for six weeks or until seven true leaves have unfolded, and then the plug trays are ready for transplanting.

Production

Echinacea 'Cheyenne Spirit' is suitable for production in a range of container sizes. When growing it in intermediate to small container sizes (trade gallon or smaller), plant one plug per pot; when growing 'Cheyenne Spirit' in large container sizes (8 inches and larger), transplant multiple plugs into each container. The plugs should be planted so the original soil line of the plug is even with the surface of the growing medium of the new container.

Echinacea perform best when grown in a moist, well-drained medium. Many commercially available peat- or bark-based growing mixes work well provided there is good water holding ability and adequate drainage. Growers planning to overwinter coneflowers would benefit from using growing mixes containing bark, which provides better

drainage and helps to avoid extended periods with overly wet root zones during the winter months.

'Cheyenne Spirit' performs best when it is grown with moderate fertility levels. Growers using water soluble fertilizers can apply 100- to 125-ppm nitrogen with every irrigation or use 200 ppm as needed.

Controlled-release fertilizers are commonly incorporated into the growing medium prior to planting at a rate equivalent to 1.1 pounds of elemental nitrogen per yard of growing medium. It is recommended to use fertilizers that are predominantly derived from nitrate nitrogen with low phosphorus and high

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In locations where short day lengths cannot be provided and first year flowering is desired, it is recommended to sow 'Cheyenne Spirit' using the following guidelines.

Latitude	Sow By
Latitude lower than 35°	No limit
N36° - N40°	No later than week 9
N41° - N45°	No later than week 8
N46° - N50°	No later than week 7
N51° - N55°	No later than week 6

potassium. I find using formulations with approximately a 3N:1P:3K ratio works well (for example, 17-6-17). Maintain the pH between 5.5 and 6.2.

During the growing season, echinacea requires an average amount of irrigation. It is best to grow them at fairly consistent moisture levels and to avoid moisture extremes (both overly wet and drought).

During the first growing season when growing 'Cheyenne Spirit' in containers, the plants are usually less than 20 inches tall and may not require height-management strategies. Several growth regulators are effective at managing the plant height of echinacea. I prefer to use the tank mixture of 2,000- to 2,500-ppm daminozide

plus uniconazole (Concise or Sumagic) at 3 to 5 ppm to control the height of echinacea; one or two applications is usually sufficient.

During the winter months, it is best to keep coneflowers on the dry side as crown and root rot diseases often develop when the root zones are kept too moist. Reduce the fertility levels in the fall and go into the winter with low ECs (<0.7 mmhos/cm). Botrytis also attacks the foliage while the plants are dormant and can cause significant injury and losses.

Insects and Diseases

Although there are several insects that feed on echinacea, they can generally be grown without significant damage. Be on the lookout for aphids, leafhoppers and whiteflies. Of these, leafhoppers is probably the most problematic, not because of the physical damage they cause, but due to the transmission of aster yellows which causes the flowers to appear deformed.

There are several diseases including Aster yellows, bacterial leaf spots (*Pseudomonas*), Botrytis, fungal leaf spots (*Alternaria*, *Cercospora* and *Septoria*), *Fusarium*, powdery mildew and root/crown rot diseases growers may occasionally observe when growing echinacea.

Scheduling

Echinacea 'Cheyenne Spirit' is a first-year flowering perennial and can be easily grown and marketed in flower during the first growing season. They are cold beneficial plants, but vernalization is not necessary for them to bloom reliably.

As mentioned above, 'Cheyenne Spirit' is a short day-long day plant and flowers more uniformly and produces more blooms when they grown under short day lengths (10 to 12 hours) for six weeks prior to growing under naturally longer day lengths. This is particularly important when producing a crop specifically intended for fall sales. Crops of 'Cheyenne Spirit' grown for late spring and early summer sales are often exposed to naturally short day lengths in the early stages of production and do not require a short day treatment. Otherwise, the most uniform flowering occurs when the plants are grown with 14-hour day lengths.

The best quality plants are produced when they are grown with temperatures between 60° F and 68° F. From the onset of long days, it takes approximately 10 weeks for 'Cheyenne Spirit' to flower at these temperatures.




Well-branched plants perform well in locations with full sun to partial shade.



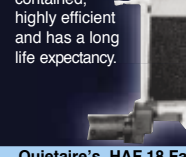
This coneflower does not require a lot of water and has many uses including perennial borders, mass plantings and butterfly gardens.

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
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Availability

Echinacea 'Cheyenne Spirit' is brought to the market by Kieft Seed (www.kieftseed.com). To obtain seed, contact your Ball sales representative (www.ballhort.com). Plug flats can also be obtained through your Ball sales representative or various reputable perennial plant brokers and propagators. [G]

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