

Breaking Into Perennials: What Plants Do I Grow & How Do I Grow Them

Choosing Perennials

Growers today have access to a wide range of excellent perennial varieties. Breeders have increasingly focused on varieties which flower well without the need for vernalization, making producing and scheduling perennials much more like scheduling annual crops.

Which specific perennials to grow is influenced by the specific containers and sales windows a grower wants to target. Overall, perennials are more challenging to produce than annuals, but correct variety choice and proper planning can significantly improve a grower's chances of success.

Growing Perennials Successfully

Perennials are not overly difficult to produce successfully. There are some key concepts to understand, including the specific triggers for flowering, by variety. Common flowering triggers for perennials include day length (photoperiod) and vernalization.

Words of Caution

- ⤴ Not all "first year flowering" perennials flower to their full potential without vernalization (low uniformity and flower power) or in a reasonable amount of time, from a grower's point of view
- ⤴ Understanding the specific flowering keys for a given perennial variety is critical
- ⤴ Don't expect a schedule for one cultivar to always work for another cultivar
- ⤴ Don't expect a schedule for one sales window to always work for a different sales window
- ⤴ A poor quality blooming perennial is less marketable than a high quality non-blooming perennial

Recommended Recent Perennial Introductions

Alcea rosea 'Spring Celebrities' series – A 20-24" tall, double flowered, dwarf series. Similar to 'Queeny Purple' but wider color range: Carmine-Rose, Lemon, Purple, White, Formula Mix. Note: Japanese beetles love it. Flowers first year, 8-10 weeks after transplant. Hardy in zones 2-8

Arabis caucasica 'Snowfix' – 5" tall, first year flowering, white flowered variety. Should NOT be given a traditional vernalization period or plant quality will be low. Instead grow cool (55-65 F, ? C) and plants will flower in 7-8 weeks.

Armeria maritima 'Morning Star' series – 6" tall, first year flowering series available in Deep Rose and White. Long day, flowers 12-13 weeks after transplant.

Delphinium grandiflorum – all are day neutral, and flower first year, 7-9 weeks after transplant, and can be grown cool with longer crop time. Hardy in zones 2-7.

- ⤴ 'Summer' series – 10-14" tall, with spurred flowers. 'Summer Cloud' is new, a great navy blue flower with white center. Very sturdy, well-branched stems. Series includes other strong colors.
- ⤴ 'Blue Diamonds' – 16-24", spurless, floriferous F1 hybrid selection.
- ⤴ 'Mistral' series – 16-24" tall, suitable for cut use. Includes some unique colors. Use multiple plugs per container to ensure good pot fill.

Echinacea purpurea – a very popular North American native species, excellent butterfly plants

- ▲ ‘PowWow’ series – A floriferous, well-branched, dwarf series. Available in pink (‘PowWow Wild Berry’) and white (‘PowWow White’)
- ▲ ‘Prairie Splendor’ – an excellent, early flowering, mid-height variety
- ▲ ‘Double Scoop’ series PPAF – compact, well-branched habit with double “pom-pom” flowers. Zone 5 hardy.
 - ▲ ‘Double Scoop Bubblegum Pink’
 - ▲ ‘Double Scoop Raspberry’
 - ▲ ‘Double Scoop Cranberry’
 - ▲ ‘Double Scoop Orangeberry’

Echinacea hybrida – interspecific hybrids between and among a number of different *Echinacea* species. These hybrids give an expanded color range, including red, yellow, and orange shades. Not all interspecific hybrids have been well-tested for hardiness and longevity in a range of climates. For best results, trial new varieties before committing to large scale production.

- ▲ ‘Cheyenne Spirit’ – a mixed color, interspecific hybrid variety from seed. Excellent, vibrant colors on dwarf plants. 2013 All America Selections winner.
- ▲ ‘Sombrero’ series – Interspecific, vegetative hybrids from the breeding program that produced ‘Cheyenne Spirit’. All have well-branched, compact habits and horizontally-held ray petals in vibrant colors. Proven hardy in zone 5.
 - ‘Sombrero Hot Coral’
 - ‘Sombrero Lemon Yellow’
 - ‘Sombrero Salsa Red’ – red ray petals and with bronze cones. Undersides of petals are white, giving a two-toned appearance as petals expand.
 - ‘Sombrero Sandy Yellow’
- ▲ ‘Leilani’ – 36 to 30 inches tall by 30 to 36 inches wide. Floriferous, with clear, yellow ray petals and strong stems.

Gaillardia x grandiflora – Long day plants, hardy in zones 2-9

- ▲ ‘Arizona’ series – 12” tall, first year flowering series with novel colors for seed varieties. Flowers 12-14 weeks after transplant, under long days
 - ‘Arizona Sun’ – 12” tall. Golden yellow with red, bicolor flowers.
 - ‘Arizona Apricot’ – apricot-orange flowers
 - ‘Arizona Red Shades’ – flowers in red shades, some with yellow tips
- ▲ ‘Mesa Series’ – 16-18” tall, F1 hybrid, first year flowering series. Flowers 8-10 weeks after transplant.
 - ‘Mesa Yellow’ – Solid yellow flowers. AAS winner and Fleuroselect Gold Medal winner.
 - ‘Mesa Bright Bicolor’ – yellow flowers with with red centers of varying widths. Very attractive.
- ▲ ‘Gallo’ series – 10-12” tall vegetative series with compact height.

Gypsophila repens ‘Filou’ series – 6-8” tall, uniform and floriferous. Flowers 7-8 weeks after transplant. Available in Rose, White.

Heuchera x hybrida ‘Melting Fire’ – 15-18” tall in bloom. Attractive, purple ruffled foliage in a seed selection. Early vigor and germination are a bit lower than other seed Heucheras. Hardy in zones 4-9.

Heuchera x hybrida – there are an overwhelming number of varieties are on the market. Several offshore URC producers now have Heuchera cutting programs, so more varieties should be more widely available in the future.

Juncus effuses ‘Twiser’ (aka ‘Spiralis’) – 12-14” tall with twisted, “corkscrew” foliage. Pelleted seed which actually germinates consistently! Hardy in zones 4-8.

Lavandula angustifolia ‘Ellagance’ series (aka ‘Potpourri’ series) – excellent, uniform series of first year flowering varieties.

Phlox hybrida ‘Paparazzi’ series – Recently renamed after some of the most revolting celebrities on earth. Very long blooming and suitable for growing as an annual.

Rosmarinus officinalis ‘Gold Dust’ – 36-48” tall. Light green foliage with gold margins. Attractive and culinary. Unfortunately, shipping URCs from offshore has proved problematic. Hardy in zones 7-10.

Rudbeckia hirta – generally flower 9-10 weeks after transplant. Best grown as annuals, but theoretically hardy in zones 5-9. Typically only more vigorous, taller varieties overwinter in cold climates.

- ▲ ‘Cherry Brandy’ – 16-24” tall with flowers in red shades with darker centers. Very striking.
- ▲ ‘Denver Daisy’ – 18-28” tall, with variable-patterned, bicolor flowers. Excellent in massed plantings.
- ▲ ‘Tiger Eye Gold’ – 16-24” tall. Outstanding floriferous, mildew resistant F1 hybrid. Blooms heavily until frost. Excellent in containers and massed plantings.

Salvia nemorosa ‘Pink Friesland’ – 16-20” tall. A uniform pink flowered selection. Long day plant which flowers 7-9 weeks after transplant. ‘Indigo Blue’ is coming soon, a dark-blue-purple flower with a similar habit. Hardy in zones 4-9

Salvia x sylvestris – seed varieties generally flower in 7-9 weeks under long days.

- ▲ ‘Adora Blue’ – 12-15” tall. An excellent, uniform seed selection with dark blue-purple flowers. Likely the best blue *S. x sylvestris* from seed on the market.
- ▲ ‘New Dimension’ series – compact, well-branched series with strong, dark flower color.

Scheduling First Year Flowering Perennials

Schedules are based on 128 cell plugs or 72 cell liners transplanted 1 per pot for quart and smaller containers, 2-3 per pot for gallon, and growing temperatures of 68 °F (20 °C) unless otherwise indicated, under the proper photoperiod. Larger plugs and liners may finish 2-4 weeks faster, smaller plugs and liners 2-4 weeks slower. In gallon pots, some species may require 1-2 additional weeks to flower. For spring sales, long day (LD) perennials require artificial lighting.

Plant	Photoperiod*	Weeks to flower	Height (inches)	Sales Season
<i>Achillea</i> 'Anthea'	LD	8-9	14-18	Sp, Su, F
<i>Achillea</i> 'Moonshine'	LD	10-12	12-14	Sp, Su, F
<i>Achillea millefolium</i> 'Appleblossom', 'Heidi'	LD	8-10	Various	Sp, Su, F
<i>Achillea millefolium</i> 'Colorado', 'Summer Pastels'	LD	8-10	12-18	Sp, Su, F
<i>Achillea millefolium</i> 'Fireland', 'Summerwine'	LD	7-8	Various	Sp, Su, F
<i>Achillea millefolium</i> 'Paprika'	LD	6-8	16-24	Sp, Su, F
<i>Achillea millefolium</i> 'Terra Cotta'	LD	8-9	24-32	Sp, Su, F
<i>Agastache foeniculum</i> cultivars	LD	6-8	24-36	Sp, Su, F
<i>Agastache</i> 'Blue Fortune'	LD	5-6	14-22	Sp, Su, F
<i>Alcea rosea</i> 'Spring Celebrities' series	LD	10-12	20-24	Sp, Su, F
<i>Arabis caucasica</i> 'Snowfix' ‡	DN	7-8	5	Sp, F
<i>Armeria maritima</i> 'Morning Star' series	LD	12-13	6	Sp, Su, F
<i>Armeria pseudoarmeria</i> 'Joystick' series	LD	10-12	18-24	Sp, Su, F
<i>Asclepias tuberosa</i> ††	LD	8-10	12-14	Su
<i>Astilbe × arendsii</i> 'Astary' series **	LD	10-12	8-10	Sp, Su
<i>Buddleia davidii</i> vegetative cultivars ††	LD	5-6	Various	Su, F
<i>Campanula carpatica</i> 'Clips', 'Star', 'Uniform' series	LD	7-9	6-8	Sp, Su
<i>Campanula carpatica</i> 'Pearl' series	LD	6-8	5-6	Sp, Su
<i>Centaurea montana</i>	LD	7-8	12-16	Sp, F
<i>Centranthus ruber</i>	LD	6-8	24-36	Sp, F
<i>Coreopsis auriculata</i> 'Nana'	DN	9-10	6-12	Sp, Su, F
<i>Coreopsis grandiflora</i> 'Early Sunrise'	LD	10-12	18-24	Sp, Su, F
<i>Coreopsis grandiflora</i> 'Heliot', 'Rising Sun', 'Sunfire'	LD	9-10	18-24	Sp, Su, F
<i>Coreopsis × hybrida</i> 'Crème Brulee'	LD	8-10	20-24	Sp, Su, F
<i>Coreopsis rosea</i> ("American Dream")	LD	9-10	12-24	Sp, Su, F
<i>Coreopsis verticillata</i> 'Moonbeam', 'Zagreb' ††	LD	8-9	12-24	Sp, Su, F
<i>Delphinium grandiflorum</i> cultivars † ‡	DN	8-10	Various	Sp, F
<i>Delphinium × elatum</i> 'Magic Fountains' series	DN	9-11	18-28	Sp, F
<i>Delphinium × belladonna</i> cultivars	DN	8-10	20-28	Sp, F
<i>Dianthus</i> 'Eastern Star', 'Neon Star'	DN	8-10	6-8	Sp, Su, F
<i>Dianthus × alwoodii alpinus</i> †	DN	7-8	8-12	Sp, Su, F
<i>Dianthus barbatus</i> 'Dash', 'Pinacolada', 'Rondo Mix' †	DN	7-8	Various	Sp, Su, F
<i>Dianthus deltoides</i> 'Arctic Fire', 'Zing Rose' †	DN	7-8	4-6	Sp, Su, F
<i>Dianthus gratianopolitanus</i> 'Firewitch'	DN	6-8	6-8	Sp, Su, F
<i>Dianthus interspecific</i> 'Bouquet' series	DN	8-10	18-24	Sp, Su, F
<i>Digitalis purpurea</i> 'Camelot' series ††	LD	16-20	30-36	Su
<i>Echinacea purpurea</i> most seed cultivars	LD	14-16	36-48	Sp, Su, F
<i>Echinacea purpurea</i> 'Prairie Splendor'	LD	12-14	24-30	Sp, Su, F
<i>Echinacea purpurea</i> 'PowWow' series	LD	12-14	16-24	Sp, Su, F
<i>Echinacea hybrida</i> 'Cheyenne Spirit'	LD	12-14	24-32	Sp, Su, F
<i>Echinacea</i> 'Big Sky' series, most vegetative cultivars	LD	8-10	Various	Sp, Su, F
<i>Gaillardia</i> 'Fanfare' ††	LD	4-6	12-18	Sp, Su, F
<i>Gaillardia</i> 'Oranges & Lemons' ††	DN	4-6	12-18	Sp, Su, F
<i>Gaillardia × grandiflora</i> 'Arizona', 'Granada'	LD	12-14	12	Sp, Su, F
<i>Gaillardia × grandiflora</i> 'Mesa' series	LD	8-10	16-18	Sp, Su

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Plant	Photoperiod*	Weeks to flower	Height (inches)	
<i>Gaillardia</i> × <i>grandiflora</i> ‘Gallo’ series ††	DN	5-6	10-12	Sp, Su
<i>Helenium autumnale</i> ‘Helena’ series	LD	12-14	30-42	Sp, Su, F
<i>Heliopsis helianthoides</i> **	LD	8-10	30-36	Su
<i>Hibiscus</i> ‘Disco Belle’ series, ‘Southern Belle’ ** ††	LD	9-12	24-30	Sp, Su, F
<i>Hibiscus</i> ‘Luna’ series **	LD	8-10	20-24	Sp, Su, F
<i>Hypericum polyphyllum</i> ‘Grandiflorum’	LD	9-11	6-12	Sp, Su, F
<i>Lamium maculatum</i> cultivars	DN	5-6	8-12	Sp, Su, F
<i>Lavandula angustifolia</i> ‘Lady’, ‘Vicenza Blue’	LD	8-10	12-16	Sp, Su, F
<i>Lavandula angustifolia</i> ‘Ellagance’ (aka ‘Potpourri’) series	LD	7-9	12-18	Sp, Su, F
<i>Leucanthemum</i> × <i>superbum</i> ‘Snow Lady’, ‘White Knight’	LD	8-10	10-14	Sp, Su, F
<i>Litiodora diffusa</i>	LD	8-10	6-12	Sp, F
<i>Lobelia</i> × <i>speciosa</i> ‘Compliment’, ‘Fan’ Series	LD	9-10	18-30	Sp, Su, F
<i>Lupinus</i> × <i>hybrida</i> ‘Gallery’, ‘Camelot’ ‡	LD	8-9	20-24	Sp, F
<i>Nepeta</i> × <i>faassenii</i> ‘Walker’s Low’	LD	5-7	10-16	Sp, Su, F
<i>Oenothera missouriensis</i>	LD	9-11	10-12	Sp, Su, F
<i>Oenothera</i> ‘Siskiyou’	LD	5-7	10-18	Sp, Su, F
<i>Papaver alpinum</i> , <i>nudicaule</i> cultivars † ‡	DN	6-8	12-24	Sp, F
<i>Penstemon barbatus</i> ‘Rondo Mix’, ‘Pinacolada’ series	DN	10-12	14-16	Sp, Su, F
<i>Penstemon</i> × <i>mexicane</i> cultivars	LD	8-10	15-30	Sp, Su, F
<i>Penstemon smallii</i> ‘Violet Dusk’	DN	6-7	18-24	Sp, Su, F
<i>Phlox paniculata</i> cultivars	LD	10-12	Various	Sp, Su, F
<i>Platycodon grandiflorus</i> ‘Sentimental Blue’ ††	LD	6-8	4-6	Sp, Su, F
<i>Platycodon grandiflorus</i> ‘Astra’ series, ‘Mariesii’	LD	9-11	16-24	Sp, Su, F
<i>Polemonium caeruleum</i>	LD	10-12	20-26	Sp, Su, F
<i>Primula capitata</i> ‘Noverna Blue’, ‘Salvana’	LD	10-14	10-16	Sp, Su, F
<i>Rudbeckia fulgida</i> var. <i>sullivantii</i> ‘Goldsturm’	LD	14-16	18-30	Sp, Su, F
<i>Rudbeckia hirta</i> cultivars	LD	8-9	Various	Sp, Su, F
<i>Rudbeckia triloba</i> **	LD	15-16	36-42	Sp, Su, F
<i>Sagina subulata</i>	LD	5-6	3-4	Sp, Su, F
<i>Salvia greggii</i> cultivars	LD	5-6	36	Sp, Su, F
<i>Salvia guaranitica</i> ‘Black & Blue’ ††	LD	6-8	24-36	Sp, Su, F
<i>Salvia</i> × <i>sylvestris</i> ‘Adora Blue’, ‘Blue or Rose Queen’	LD	8-10	14-24	Sp, Su, F
<i>Salvia</i> × <i>sylvestris</i> ‘Blue Hill’, ‘Snow Hill’, ‘May Night’	LD	6-7	12-16	Sp, Su, F
<i>Salvia nemorosa</i> ‘Marcus’, ‘Sensation Rose’	LD	6-7	10-12	Sp, Su, F
<i>Salvia nemorosa</i> ‘East Friesland’, ‘Pink Friesland’	LD	6-7	16-24	Sp, Su, F
<i>Scabiosa columbaria</i> ‘Butterfly Blue’, ‘Pink Mist’	DN	8-10	12-16	Sp, Su, F

* LD indicates long days are required or beneficial

** Better performance when grown warm, 70-75 °F (21-24 °C)

† Additional 2-3 weeks for flowering under short days

†† Pinch at transplant for better pot fill

‡ Prefers cool growing temperatures, not good for summer sales window

‡‡ Light accumulator, needs high light levels

Scheduling Perennials from Vernalized Liners

Vernalized liners allow growers to treat perennials requiring vernalization as “first year flowering.” Vernalized liners are ideal for finishing under cool temperatures for early and late spring sales. This schedule is based on mature plugs and liners cooled 10 weeks at 38-41 °F (3-5 °C) and 60-68 °F (15.5-20 °C) temperatures (unless otherwise indicated), under the proper photoperiod. In gallon containers, 1-2 additional weeks may be required.

Plant	Photoperiod*	Weeks to flower	Height (inches)
<i>Achillea</i> ‘Moonshine’	LD	6-8	12-14
<i>Achillea</i> × <i>lewisii</i> ‘King Edward’	LD	6-7	4-10
<i>Achillea millefolium</i> ‘Paprika’	LD	5-6	16-24
<i>Achillea millefolium</i> ‘Terra Cotta’	LD	7-8	24-32
<i>Aquilegia alpina</i> †	DN	6-8	10-14
<i>Aquilegia vulgaris</i> , × <i>hybrida</i> (<i>cultorum</i>) cultivars †	DN	6-7	Various
<i>Arabis caucasica</i> cultivars ‡	DN	4-6	4-6
<i>Armeria</i> × <i>hybrida</i> ‘Dwarf Ornament Mix’	LD	10-12	6-10
<i>Armeria maritima</i> ‘Splendens’	LD	10-12	6-10
<i>Aubrieta</i> × <i>hybrida</i> ‘Grandiflora’, ‘Whitewall Gem’ ‡	DN	9-10	6-8
<i>Bellis perennis</i> cultivars ‡	DN	6-8	8-10
<i>Coreopsis auriculata</i> ‘Nana’	DN	5-6	6-12
<i>Coreopsis grandiflora</i> ‘Sunray’, ‘Baby Sun’ †	LD	6-8	20-30
<i>Coreopsis rosea</i> (“American Dream”)	LD	5-6	18-24
<i>Coreopsis verticillata</i> ‘Moonbeam’, ‘Zagreb’	LD	5-6	12-24
<i>Delphinium</i> × <i>belladonna</i> cultivars	DN	8-9	20-28
<i>Delphinium</i> × <i>elatum</i> ‘Magic Fountains’ series	DN	8-9	18-28
<i>Dianthus</i> ‘Eastern Star’, ‘Fire Star’, ‘Neon Star’	DN	4-6	6-8
<i>Dianthus barbatus</i> ‘Double Dwarf’, ‘Indian Carpet’	DN	8-9	6-12
<i>Digitalis grandiflora</i> (<i>ambigua</i>)	DN	6-8	14-18
<i>Echinacea purpurea</i> seed cultivars **, ***	LD	10-12	Various
<i>Echinops ritro</i>	LD	14-16	12-16
<i>Gaillardia</i> × <i>grandiflora</i> seed cultivars ***, †	LD	7-9	Various
<i>Geum chiloense</i> ‘Lady Stratheden’, ‘Mrs. Bradshaw’	DN	8-10	12-16
<i>Helenium autumnale</i> ‘Helena’ series	LD	10-12	30-42
<i>Heuchera sanguinea</i> ‘Ruby Bells’, ‘Splendens’ †	LD	7-8	12-24
<i>Iberis sempervirens</i> ‘Alexander’s White’, ‘Purity’	DN	4-5	6-10
<i>Iberis sempervirens</i> ‘Snowflake’, ‘Tahoe Snow White’	DN	6-7	6-10
<i>Leucanthemum</i> × <i>superbum</i> ‘Alaska’, ‘Crazy Daisy’ ***	LD	7-8	24-36
<i>Leucanthemum</i> × <i>superbum</i> ‘Becky’	LD	8-10	24-36
<i>Leucanthemum</i> × <i>superbum</i> ‘Snowcap’	LD	6-8	24-36
<i>Lithodora diffusa</i> cultivars	LD	7-9	6-12
<i>Monarda</i> ‘Jacob Cline’	LD	8-10	24-30
<i>Myosotis sylvatica</i> ‘Victoria’ series ‡	DN	5-7	6-10
<i>Nepeta</i> × <i>faassenii</i> ‘Walker’s Low’	LD	4-6	10-16
<i>Penstemon digitalis</i> ‘Husker’s Red’	LD	6-8	20-24
<i>Phlox paniculata</i> cultivars	LD	9-10	Various
<i>Phlox subulata</i> cultivars	DN	3-4	4-6
<i>Physostegia virginiana</i> ‘Alba’	LD	10-12	20-30
<i>Physostegia virginiana</i> ‘Rosea’	LD	12-15	30-36

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Plant	Photoperiod*	Weeks to flower	Height (inches)
<i>Polemonium caeruleum</i>	LD	4-6	20-26
<i>Primula</i> × <i>polyantha</i> (<i>elatior</i>), × <i>pruhoniciana</i> ‡	DN	7-8	4-10
<i>Rudbeckia fulgida</i> ‘Goldsturm’ †, **, ***	LD	12-14	18-24
<i>Rudbeckia triloba</i> **	LD	10-12	30-36
<i>Salvia</i> × <i>sylvestris</i> ‘Blue Hill’, ‘East Friesland’, ‘May Night’	LD	5-6	12-20
<i>Saxifraga</i> × <i>arendsii</i> ‘Purple Robe’	DN	7-8	6-8
<i>Scabiosa columbaria</i> ‘Butterfly Blue’, ‘Pink Mist’	LD	4-5	12-20
<i>Sedum</i> ‘Autumn Joy’	LD	8-10	18-24
<i>Veronica spicata</i> cultivars	LD	6-8	Various
<i>Veronica</i> ‘Giles Van Hees’	LD	8-10	6-15
<i>Veronica</i> ‘Sunny Border Blue’	LD	9-10	18-24

† These plants have a relatively long juvenility period and large liners are recommended to ensure flowering.

* LD indicates long days are required or beneficial for flowering

** Better performance when grown warm, 70-75 °F (21-24 °C)

*** Multiple plugs per pot recommended. Fuller plants and better pot fill when planted in fall and overwintered.

‡ Prefers cool growing temperatures, not good for summer sales window. Note: ‘Snowfix’ should NOT be vernalized