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FLOWERS

Wildflowers in Colorado

no. 7.233

by J.E. Klett and R.A. Cox¹

Quick Facts...

Wildflower plantings have a different appearance throughout the growing season.

Commercial seed mixes are developed to show variation in height, bloom color and time.

Choose a wildflower seed mix best for your site conditions.

The best site for wildflowers has well-drained and aerated soil.

Control weeds prior to seeding wildflowers.

Water as needed for germination and maintenance.

Wildflowers are ideal for a more natural, less formal appearance. A planting of wildflowers will become a complex, interactive plant community, not just a collection of individual plants. You may choose to model wildflower plantings after surrounding native-plant communities or use wildflowers to provide bold splashes of color.

The term "wildflower" does not necessarily imply that such plants are native to our area. Rather, it refers to an overall "look" or "feel" of an informal planting. Many plants in wildflower seed mixes are not native to Colorado.

A wildflower planting provides change throughout the growing season as different plants in the mix come into bloom. Due to varying characteristics of plants in a wildflower mix, the appearance of the planting may differ from year to year as some species thrive and dominate less aggressive species.

The type of wildflower seed mix you choose depends on site conditions and the effect you want to create. Commercial seed mixes may be formulated using a variety of flowers with different heights, colors and bloom times. Usually, a mix of self-seeding annuals, biennials and perennials is most effective. Wildflower mixes also may contain some grass species, which can fill in spaces around flowers, add texture and color contrast, and provide support and protection to wildflowers. Grasses also can reduce soil erosion and enhance wildlife habitat. On steep slopes, existing or seeded grasses can reduce soil erosion until wildflowers become established. Use plastic netting, jute twine or straw mulches on the soil surface to help establish wildflowers on steep slopes.

Because some wildflowers can be aggressive, you may lose the diversity of a wildflower planting. Their aggressiveness can be compounded by site conditions. Some species invade areas where they are not wanted. See Table 3.

Site Preparation and Weed Control

Choose a mix suitable for specific site conditions, such as dry, hot, south exposures; cooler, shaded, north and east exposures; or moist meadows. These conditions require different plant species. Seed companies often formulate their mixes for different site conditions. Most wildflowers grow best on well-drained, well-aerated soils. Others are adapted to moist meadows. On sites with poor



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Reviewed 9/98.

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Maintenance

- After wildflowers are established, pull weeds as soon as they can be identified and before they set seed.
- During extended dry spells, supplemental water can help wildflowers look their best.
- If initial soil preparation was done, little if any fertilizer is required.
- After plants brown from killing frost, mow wildflower areas to distribute seeds set by plants. Cut stalks to 4 to 6 inches and leave clippings on the ground.
- In the second and succeeding years, the appearance of the wildflower planting may differ due to bloom of biennial and perennial species. Additional seeding can be beneficial if your wildflower stand is not satisfactory or plant growth was spotty or poor.
- Some species of wildflowers are toxic to grazing livestock (e.g., lupines and larkspurs).
- Observe which wildflowers escape from your landscape to rangeland, open space, wetlands or other natural areas. Remove escaped plants and replace them with less aggressive species.

or compacted soil or extensive weed populations, considerable soil preparation and weed control are necessary.

If weeds predominate on the site or if the soil has been disturbed by rototilling or construction activity, it may take up to a year to control weeds before you can plant wildflowers. Eliminating weeds prior to planting wildflowers is easier and less expensive than identifying and controlling them in newly seeded sites. Water to stimulate weed-seed germination and growth. Then spray or pull the resulting weeds.

One method of sowing wildflower seeds with minimal soil preparation is to lightly cultivate or break the soil with a rake prior to sowing. If the soil is compacted, heavy clay, you may need to do some soil improvement. Incorporate organic matter, such as compost or sphagnum peat moss, into the top 6 inches. Three cubic yards of organic matter per 1,000 square feet, or about enough to cover soil 1 inch deep, generally is sufficient.

After incorporating organic matter, water the area to germinate any existing weed seeds. Spray these weed seedlings with glyphosate (Roundup), glufosinate (Finale) or another appropriate herbicide. As with any pesticide, read and follow label directions. Remove dead weed debris prior to planting wildflowers. The number of times you need to repeat this water/spray process depends on the degree of weed infestation and types of weeds prevalent.

On sites where other desirable vegetation exists, cultivate the soil lightly or break it with a rake, then sow wildflower seeds so they contact the soil.

Seeding

Fall is a good time to sow wildflower seed because subsequent winter cold and snow (moisture) will promote seed germination the following spring. You may need to water in the spring to germinate seeds if winter moisture is insufficient. For spring or summer seedings, water to germinate seeds if rains are insufficient.

To prevent seed from blowing, provide additional protection on exposed, windy sites. Seedlings emerging in late summer may not become well established and may be killed by fall frosts.

Depending on the mix or species selected, sow 4 to 8 ounces of seed per 1,000 square feet. Exceeding recommended seeding rates may result in poor stands, especially of perennials shaded out by too-dense annuals.

For an even distribution of wildflower seed, mix six parts dry sand with one part seed. For small areas, spread the mix by hand. On larger areas, use a cyclone-type fertilizer/seed spreader. For small areas, light raking can help ensure good seed contact with soil. For large areas, it's faster to pull a section of chain-link fence behind a tractor.

Wildflower "sod" is available as an alternative to seeding. Although considerably more expensive than seeding, you may wish to use it on steep slopes or where you want quick establishment of wildflowers.

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Table 1: Wildflowers most commonly available in seed mixes.

- a Type: A = Annual, B = Biennial, P = Perennial, TP = Tender Perennial
 b Exposure: S = sun, PS = partial shade, SH = shade
 c Soil moisture preference: D = dry, M = moist (needs supplemental irrigation) * = Native to Colorado
 d Season of bloom: SP = spring, SU = summer, F = fall
 e Very aggressive, may eventually dominate planting

Plant Name	Type ^a	Flower Color	Exposure ^b	Moisture ^c	Season of Bloom ^d
* <i>Aquilegia</i> spp. Columbine	P	Yellow, red, blue	S/PS	M	SP/SU
<i>Aster novae-angliae</i> Aster (New England)	P	Violet	S/PS	D or M	F
<i>Campanula carpatica</i> Carpathian harebell	P	Blue	S/PS	M	SU
<i>Centaurea cyanus</i> Cornflower	A	Blue	S/PS	D	SU
<i>Clarkia unguiculata</i> Clarkia	A	Pink, lavender	S	D or M	SP/SU
<i>Consolida ambigua</i> Larkspur	A	White, pink, violet	S/PS	M	SU
<i>Coreopsis lanceolata</i> Coreopsis (lanceleaf) ^e	P	Yellow	S/PS	D or M	SU/F
* <i>Coreopsis tinctoria</i> Coreopsis (plains) ^e	A	Yellow/maroon	S/PS	D	SU/F
<i>Cosmos bipinnatus</i> Cosmos ^e	A	Pink, white, red	S/PS	D	SU/F
<i>Dianthus barbatus</i> Sweet William	B/P	Pink, red, white	S/PS	D or M	SU
<i>Dimorphotheca aurantiaca</i> African daisy	A	White, orange	S	D	SU/F
<i>Echinacea purpurea</i> Purple coneflower	P	Purple	S/PS	D or M	SU
* <i>Erigeron speciosus</i> Showy daisy (fleabane)	P	Violet	S/PS	D or M	SP/SU
<i>Eschscholzia californica</i> California poppy ^e	TP	Yellow/orange	S	D	SP/SU
* <i>Gaillardia aristata</i> Gaillardia (perennial)	P	Yellow/red	S	D	SU
<i>Gaillardia pulchella</i> Gaillardia (annual)	A	Yellow/red	S	D	SU
<i>Gypsophila elegans</i> Baby's breath (annual) ^e	A	White	S/PS	D	SU
<i>Iberis umbellata</i> Candytuft (annual)	A	Pink, white	S/PS	D or M	SU
<i>Leucanthemum x superbum</i> (<i>Chrysanthemum x superbum</i>) Shasta daisy	P	White	S/PS	M	SU
<i>Linaria maroccana</i> Snapdragon (spurred)	A	Pink, yellow, violet	S/PS	D	SP/SU
<i>Linum grandiflorum rubrum</i> Flax (scarlet)	A	Scarlet	S/PS	D or M	SU
* <i>Linum perenne lewisii</i> Flax (blue) ^e	P	Blue	S	D or M	SP/SU
<i>Lobularia maritima</i> Sweet alyssum ^e	TP	White, lavender	S/PS	D or M	SP/SU
<i>Lupinus</i> spp. Lupine	A/P	Blue, pink, red	S/PS	D or M	SP/SU
<i>Oenothera missouriensis</i> Ozark sundrop	P	Yellow	S/PS	D	SU
<i>Papaver rhoeas</i> Poppy (corn), Shirley poppy	A	White, pink, red	S/PS	D	SU
* <i>Penstemon strictus</i> Penstemon (Rocky Mountain)	P	Blue	S/PS	D	SU
<i>Phacelia campanularia</i> California bluebell	A	Blue	S	D	SP/SU
* <i>Ratibida columnifera</i> Mexican hat, prairie coneflower	B/P	Yellow/red	S/PS	D	SU

<i>Rudbeckia hirta</i> Black-eyed Susan ^e	A/P	Yellow	S/PS	D or M	SU/F
<i>Silene armeria</i> Catchfly	A/B	Pink	S/PS	D	SU
* <i>Viguiera multiflora</i> Showy goldeneye	P	Yellow	S/PS	D or M	SU/F
<i>Viola</i> spp. Johnny jump-up	P	Purple/yellow	S/PS	M	SP/SU/F

Table 2: Additional species for consideration (seed or started plants often available)

Plant Name	Type ^a	Flower Color	Exposure ^b	Moisture ^c	Season of Bloom ^d
* <i>Anemone patens</i> Pasque flower	P	Purple	S/PS	D	SP
* <i>Artemisia</i> spp. Sage	P	Gray foliage	S	D	—
* <i>Asclepias tuberosa</i> Butterfly weed	P	Orange	S	D	SP/SU
* <i>Castilleja</i> spp. Indian paintbrush	P	Red, orange, purple	S/PS	D or M	SU/F
* <i>Chamerion (Epilobium) angustifolium</i> Fireweed ^e	P	Pink	S/PS	D or M	SU
* <i>Eriogonum umbellatum</i> Sulfur flower	P	Yellow	S	D or M	SU
* <i>Erysimum</i> spp. Wallflower	P/B	Yellow, orange	S/PS	D or M	SP/SU
* <i>Eustoma grandiflorum</i> Prairie gentian	TP	Blue/purple	S	M	SU/F
* <i>Ipomopsis aggregata</i> Scarlet gilia	B	Red	S/PS	D or M	SU
* <i>Liatris punctata</i> Spotted (dwarf) gayfeather	P	Purple	S	D or M	SU
* <i>Machaeranthera</i> spp. Aster	A/B	Purple	S/PS	D	SU/F
* <i>Melampodium leucanthum</i> Melampodium	TP	Yellow	S	D or M	SU/F
* <i>Mirabilis multiflora</i> Desert four o'clock	P	Pink/purple	S/PS	D	SU/F
* <i>Monarda fistulosa</i> Pink bergamot	P	Pink	S	D or M	SU
* <i>Oenothera caespitosa</i> White evening primrose	P	White	S	D	SU/F
* <i>Penstemon</i> spp. Penstemon, beard tongue	P	Varies	S	D	SU
<i>Solidago rigida</i> Goldenrod	P	Gold	S	D or M	SU/F
* <i>Thermopsis montana</i> Golden banner, false lupine	P	Gold	S	D or M	SP/SU

Table 3: Avoid seed mixes containing these species (high potential for invasiveness).

Plant Name	Type ^a	Flower Color	Season of Bloom ^d
<i>Achillea millefolium</i> Yarrow (white) ^e	P	White	SU
<i>Cichorium intybus</i> Chichory ^e	P	Blue	SP/SU
<i>Hesperis matronalis</i> Dames' rocket ^e	P	Violet	SP/SU
<i>Leucanthemum vulgare</i> (<i>Chrysanthemum leucanthemum</i>) Oxeye daisy ^e	P	White	SU
<i>Myosotis sylvatica</i> Forget-me-not ^e	A	Blue	SP/SU