



Flowers for Mountain Communities

by J.R. Feucht 1

Quick Facts...

- Herbaceous perennials are the best colorful flowers for the mountains.
- Add organic matter to light-colored soils to improve the soil and help it hold more heat.
- Use organic mulches to protect plants from drying out. Remove in early spring to help soil warm.
- Newly planted annuals and perennials may need temporary protection with "hot caps."
- Where the growing season is less than 80 days, grow annuals in containers, such as window boxes and tubs.

Approximately three-fourths of the nation's land above 10,000 feet lies in Colorado. High elevation, together with terrain features that trap cold air, reduces the number of frost-free days. The average frost-free period above 5,000 feet elevation is 138 days; above 6,000 feet, 113 days; above 7,000 feet, 98 days; and above 8,000 feet, only 50 days.

Some lower mountain valleys trap cold air and have shorter growing seasons than higher valleys. For instance, Steamboat Springs, at 6,770 feet, has a mere 49 days average frost-free period; Fraser, 8,560 feet elevation, only 16 days; yet, Leadville, with an elevation of more than 10,000 feet has an average of 77 frost-free days.

Despite these seemingly overwhelming limitations, annual and perennial Garden flowers can be grown and often produce more color than those grown at lower elevations.

Perennials for Color

A survey of 66 mountain communities above 6,000 feet elevation showed that herbaceous perennials provide the best source of colorful flowers for mountain communities. These are listed, along with some useful characteristics, in Table 1. Table 2 lists suggested annuals.

Growing Garden Flowers

The greater amount of solar radiation at higher elevations can extend the growing season. Gardens placed in full sun, such as on south and southeast exposures, usually will thrive. A better microclimate will be created for plant growth if the Garden can be screened from strong winds.

Light-colored granitic (decomposed granite) soils, common in many mountainous areas, are less apt to absorb heat. Add organic matter, such as peat, dark mountain topsoil or manure, to improve water retention and heat absorption. On the other hand, darker soils may warm more slowly in spring due to higher moisture content. Soils also may be low in certain essential nutrients. Test the soil after adding organic material. Contact your Colorado State University Cooperative Extension county office for soil test information.

Use organic mulches to protect perennials from severe drying where snow cover is not likely to remain during the winter. Mulches also can be a disadvantage by delaying spring growth. Remove them in early spring to allow the soil to warm up.

Plant perennials in spring or early summer as soon as the soil can be worked -- never in late summer or fall. Be prepared to provide temporary cover (frost caps) for both annuals and newly planted perennials.

Gradually acclimate annuals and perennials that are established in containers at the

greenhouse or in the home. About two weeks before the anticipated planting time, reduce watering and expose the plants to increasingly longer outdoor conditions. If plants are well-rooted in the containers or are potbound, loosen the outside of the root ball before planting.

When transplanting, use a water-soluble starter fertilizer available in Garden stores. This can be mixed in the water used to water-in the plants.

Where the average growing season is less than 80 days, it is usually more practical to grow annuals in tubs or planters that can be moved to protected locations when frost threatens. Frost can temporarily interrupt the normal growing season and destroy tender annuals and perennials. Another alternative is to plant annuals in window boxes. Heat loss from the building reduces the chances of frost damage and the plants can be easily and quickly covered.

Table 1: Garden perennials for mountain communities 6,000 to 10,000 feet elevation.*

<u>Plant Name</u>		<u>Colors</u>	<u>Remarks</u>
**Althaea rosea	Hollyhock	Various	May not flower every year, especially at higher elevations.
**Campanula medium	Canterbury bells	White	May not be dependable where growing season is less than 50 days.
**Campanula medium calycanthema	Cup 'n' saucer	Purple, pink, white	Same as above.
**Dianthus barbatus	Sweet William	Pink, red, white	Forms low, colorful mats at higher elevations.
**Digitalis purpurea	Foxglove	Purple, red, white, pink, variegated	May not be dependable over 9,000 feet. Flowers appear in second year.
Achilles filipendula	Yarrow	Yellow	Dry locations. Fern-like foliage. Easy to grow. Full sun.
Anaphalis sp.	Pearly everlasting	White	Very showy in mass plantings. Flowers dry well for arrangements.
Aquilegia (hybrids)	Columbine	Various	Most long-spurred hybrids do well. Use rich soil.
Campanula glomerata	Clustered bellflower	Purple	One of the most dependable at very high elevations. Flowers cluster at top of short stalk.
Centaurea montana	Mountain bluet	Blue, white	A low, creeping plant. Young leaves silver-white.
Chrysanthemum coccineum	Pyrethrum, painted daisy	Various	Feathery foliage. Usually over 15 inches tall.
Chrysanthemum maximum	Shasta daisy	White	Observed at 9,700 feet elevation. Probably hardy over 10,000 feet. Good cut flower. Easy culture.
Delphinium elatum	Delphinium	Blue, white, purple	Healthy 4- to 5-foot spikes were observed in Leadville, elevation 10,162 feet. One of the best for mountain Gardens.
Dianthus pulmaris	Cottage pink	Rose, white, purple	Blue-green foliage forms dense grass-like mats.
Dicentra spectabilis	Bleeding heart	Rose-red	Old-fashioned favorite. Tolerates shade.
Gaillardia aristata	Gaillardia, blanket flower	Yellow-red	Start seed indoors. Flowers appear first year.

<i>Iris germanica</i>	Bearded iris	Various	May not flower until July at higher elevations. Full sun.
<i>Iris siberica</i>	Siberian iris	Violet, white	Observed no higher than 9,300 feet elevation but probably hardy above 10,000 feet. Moist soils. Late bloom.
<i>Lathyrus latifolius</i>	Perennial sweet pea	Pink	Tolerates shade. Useful for trellis cover.
<i>Lilium tigrinum</i>	Tiger lily	Orange	Other lilies also may thrive, but this is hardy and has reliable bloom.
<i>Linum perenne</i>	Blue flax	Blue	Often flowers first year from seed. Erect, branchy plant, sometimes bush-like.
<i>Lupinus polyphyllus</i>	Lupine	Variable	Reseeds readily. Sometimes acts more like a biennial.
<i>Lychnis chalcedonia</i>	Maltese cross	Scarlet, pink, white	Striking when in bloom. Blooms mid-August above 9,000 feet.
<i>Myosotis alpestris</i>	Forget-me-not	Blue with yellow center	A dwarf plant for rocky niches. Cover with evergreen boughs in winter.
<i>Narcissus</i> spp.	Daffodil	White, yellow	Plant in well-drained soils 6 to 8 inches deep. Sunny spots will provide earlier bloom.
<i>Paeonia officinalis</i>	Peony	White, red, pink	Flowers appear in late July above 9,000 feet. Well-drained soils.
<i>Papaver nudicale</i>	Iceland poppy	Yellow, orange	An arctic species with several cultivated forms. Foliage light blue-green.
<i>Papaver orientale</i>	Oriental poppy	Orange, pink, maroon	Flowering period short but showy.
<i>Phlox paniculata</i>	Perennial phlox	Pink, white, purple	Flowers mid- to late summer above 9,000 feet.
<i>Ranunculus asiaticus</i>	Buttercup	Various	Fleshy roots are sold as bulbs. Easy culture. Moist soils are best.
<i>Sedum acre</i>	Goldmoss stonecrop	Yellow	Forms bright green, low mat of fleshy foliage. Use in rocky areas.
<i>Sedum spurium</i>	Two-row sedum	Pink	Variety 'Dragon's Blood.' Has rose-pink flowers. A good rock-Garden plant.
<i>Sempervivum tectorum</i>	Houseleek, hen and chicks	Pink	Flowers may not appear for years. Flowering plant dies but off-shoot "chicks" soon fill in. Easy culture.
<i>Trollius europaeus</i>	Globeflower	Lemon-yellow	Use in moist, rich soils.
<i>Valeriana officinalis</i>	Heliotrope	White, pink, lavender	Fragrant flowers. Leaves feathery. For tall, informal background use.
<i>Viola kitaibeliana</i>	Johnny Jump-up	Violet	Often flowers even under snow cover. Re-seeds well.

*All plants listed have been observed growing in Gardens over 10,000 feet elevation in Colorado, except where noted. Flower dates and plant height vary with number of frost-free days, exposure, and elevation. This information is too complex to be listed here. Hopkins "Bioclimatic Law" (1918) states that flowering usually is delayed four days for every 400 feet rise in elevation. This law, however, is subject to modification, depending upon longitude, latitude, local terrain features and microclimates.

**Biennials.

Table 2: Annuals for mountain communities 6,000 feet to 10,000 feet elevation.*

<u>Plant Name</u>		<u>Colors</u>	<u>Remarks</u>
**Calendula spp.	Calendula, pot-marigold	Yellow, orange	A good cut flower. Flower heads can be used to flavor soups and stews. Seeds germinate rapidly.
**Petunia hybrids	Petunia	Various	A tender perennial sold as an annual that withstands considerable frost. Sunny locations are best.
**Tagetes spp.	Marigold	Yellow, orange	Will suffer greatly in first frost. Grows easily from seed and flowers early.
**Zinnia spp.	Zinnia	Various	Starts easily from seed and develops quickly. Best where growing season is over 80 days.
Eschscholzia californica	California poppy	Yellow, orange	Actually a perennial but performs as hardy annuals. Sow seeds in Garden as early as possible. Withstands considerable frost.
Gladiolus spp.	Gladiolus	Various	A perennial but treated as annual. Plant corms as soon as soil can be worked. Plant about 6 inches deep in warm, sunny location. Dig after first frost and store cleaned and dry in a cool place. Do not let corms freeze.
Viola spp.	Pansy	Various	Actually a biennial but may act as annual or perennial, depending upon growing conditions.

*Where growing season is less than 80 days, it usually is more practical to grow plants in pots, tubs or other portable containers.

**These species are best started indoors in spring or purchased as growing plants.

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