



Rocky Mountain natives for Wyoming landscapes

By Donna Cuin

Each family of flowers has similar characteristics, and having a variety of flower shapes and forms increases the interest in the garden along with having a variety of colors and bloom times.

Considering the flower families along with their hardiness or suitability to our climate can add to the attractiveness and visual interest in the garden. Our Wyoming and Rocky Mountain habitats provide a wonderful array of environmental conditions that lend well to developing wildflower variations. We have high plains desert conditions, mountain foothills, and steppe areas as well as high mountain forest and mountain meadows. Plants adapt to their environment over eons and become suited to the various conditions in the many plant community niches of our varied environments statewide. These plant characteristic variations can be gathered and placed into our home landscape native plantings with little stress noticed by the plants.

Our habitats should not be disturbed by individual gardeners going out on plant collecting excursions in the wild. Professional horticulturists are already collecting seeds and specimens to propagate more plants for sale in the garden centers. If the garden center you frequent does not carry plants you are looking for, all they need to know is you are interested in purchasing plants to send them on a mission to find just the right source for their customers.

Aster Family

The Aster family is a very common group of plants in the Rocky Mountain west. These are flowers made up of many small flowers, and the family was at one time referred to as composite flowers. There are flowers around the edge of each "blossom" that look like what we typically think of as petals; these are the ray flowers that



Maximilian sunflower

radiate from the flower like rays of the sun.

Antennaria, or pussytoes, is a native to the Rocky Mountain region in the higher alpine areas and along windswept rocky foothills. This little plant is only about 4 inches tall when in bloom and makes a wonderful ground cover for sandy or rocky sites, works well in rock gardens, and is perfect for water wise or xeric gardens.

Berlandiera, commonly referred to as chocolate flower, is a wonderful, small wildflower that resembles black-eyed Susan, but the center is somewhat green instead of a dark brown or black. There is a species of *B. lyrata* that is a Plant Select® introduction. If you brush against the flowers, especially in the early morning hours, they emit a strong chocolate aroma.

Helianthus maximiliani, better known as the Maximilian sunflower, easily reaches 6-foot tall by the blooming season of late summer and early fall. It has distinct yellow sunflowers with dark brown centers; each bloom is about 4 inches in diameter with dozens of stems on these tall, showy plants.

Liatris is a flower I didn't remember as a wildflower and became aware of as a florist; they are long spikes of multiple

purple or lavender flowers. They are commonly called blazing stars, as the blooms begin to open at the top of the flower stem and continue to open all the way down the spike until each flower is open and in all its colorful glory.

Buttercup Family

The buttercup family includes several flowers very well-suited to cooler, shady locations in gardens. This group is made up of several regular-shaped flowers, including buttercups, anemones, and clematis. It also includes flowers with irregular shapes and having spurred flowers. One is our native delphinium, which is considered a weed on cattle rangeland because it is poisonous to cattle.

Aquilegia, commonly known as columbine, is available in quite an array of colors and sizes. The foliage is often an attractive soft and frilly addition to a garden when the flowers are not in show. Because this plant takes advantage of additional moisture in shady areas, it is a plant suited to droughty conditions, and there are two varieties recommended by Plant Select®.

Evening Primrose Family

Evening primrose family is made up of plants with flowers that have four petals or a combination of four petals. Some are held upright on the plant, and others hang down fuchsia, for example. These flowers are usually known for fragrance and attracting birds, bees, and butterflies to the garden because of their heavy nectar production. The flowers in this family range from simple white to extremely flashy; often more than one color blooms on one plant.

Epilobium (formerly *Zauchneria*) is commonly known as hummingbird trumpet because of its bright red flowers that have four petals joined together into a long tube. Hummingbirds are readily attracted to these flowers because of the bright red color and the heavy, fragrant nectar they produce. Plant Select® recommended Orange Carpet® hummingbird trumpet in 2001. This particular plant is native to the very western edge of Wyoming but well-suited to a variety of garden situations across the state.

Figwort Family

Figwort family members also form flowers with a tubular shape. These flowers usually attract bees instead of butterflies and may, depending on color, attract hummingbirds. The colors in this family range from

light yellow to blue, purple, and red. One of the other attractive features is the wide variations in foliage. Some have finely cut and frilly leaves and some have long narrow leaves, and still others have coarser wide blades.

Castilleja, which includes the Indian paintbrush, our state flower, is a favorite for native plant growers. This one can be difficult to start from seed and has been somewhat rare in the horticulture trade, but details are being worked out on methods for germinating seeds, and growers are becoming more and more successful at producing plants for garden centers. There are several colors in nature, but the most commonly available are the red flowering types.

Penstemon is readily becoming one of my favorite flowers in a native or xeric garden. The plants have a wide variety of foliage types and colors from white and light pink to bright fluorescent coral pink and bright purple. Depending upon flower size, I see a variety of bees visiting these flowers. Not only is there a variety of foliage types, but the plants vary from ground covers to almost 4 feet tall. Because of the wide range of locations these plants inhabit in native settings, there is probably a penstemon for every garden, except maybe very dense, moist shade.

Grass Family

Members of the grass family are plants every garden needs, but I am not referring to traditional turf grass. These are much larger plants and help the garden to mimic our native prairies and add much in the way of winter interest long after the blossoms of our flower gardens are gone and forgotten.

Achnatherum hymenoides, commonly known as Indian ricegrass, has been a favorite of mine all of my adult life. It is native to many habitats across the state and is seen at a wide variety of locations and elevations. It has a soft, lacy visual effect with almost silvery color in the late-day sunlight. It will attract deer and antelope for grazing but comes back easily even if grazed to the soil surface.

Schizachyrium scoparium, or little bluestem, is another must-have for any garden, especially if the gardener is trying to increase winter interest. This medium green-leaved grass turns a wonderful warm russet to orange color in fall and gives wonderful contrast to evergreen backgrounds or accents each new snowfall with the warm colorful glow.

Mint Family

Mint family members are most commonly known for a physical trait of the stems – they all have square-shaped stems. They also have another trait all members of the family have in common. They have five petals, or multiples of fives, joined into a tubular-shaped flower. This shape is one that attracts hummingbirds and butterflies and, if the flowers are the right sizes, will attract bees. One more common trait of members of this family is the aromatic foliage these plants exhibit. Each plant has its own fragrance, but they all have a pungent characteristic that comes through as a variation or "mint."

Agastache is most commonly called hyssop and has been grown in gardens throughout most of recorded history. This plant not only has fragrant flowers that attract hummingbirds, bees, and butterflies, but it also has fragrant, aromatic foliage that is one of its most pleasant features. This plant should be planted where the gardener regularly gets close enough to enjoy the fragrance. The flowers range from white to vivid hot pink and purple.

Monarda, known to most as beebalm, is another fragrant plant that attracts bees to the garden. This plant can take almost any location in the garden and make the most of it. I have grown it in full sun and on the north side of a building. It has inch-and-a-half to 2-inch clusters of flowers that resemble pom-poms at the end of each stem as they come into bloom and can have pink to lavender and even red blossoms.



Beebalm



Indian paintbrush



Additional Resources

There are several books out on xeric or water-wise gardening. The Denver Water Board was the first to coin the term xeriscape in the mid-1970's. They have three books out, all three from Fulcrum Publishing: *the Xeriscape Handbook*, *Xeriscape Plant Guide* and the *Xeriscape Color Guide*. There are many other authors and books on the subject and they all have good recommendations and suggestions of suitable plant material.

Many of these plants are Plant Select® recommendation or introductions. You can find more information about these and other plants well suited to Wyoming gardens at their website plant-select.org. This year, Plant Select® published a book as a celebration of their 10th anniversary year. It is called *Durable Plants for the Garden* and is also distributed by Fulcrum Publishing. Native plants need supplemental water the first year or two as the roots establish; in nature, the seeds germinate in the season of the year when conditions are most suited to the needs of each specific plant. In the garden, we must help the plants by supplementing the water and creating an environment conducive to plant growth. Then, since these are native plants, they should be able to survive on the naturally occurring rainfall, but they will thrive with just a little more supplemental water each season after establishment.

Columbine

Phlox Family

The phlox family is made up of plants from ground cover size to almost 4 feet tall. The foliage has as much variation as the plant size. Some of the ground covers have long, narrow leaves that resemble, and are sometimes as sharp as, needles. The taller phlox have a more traditional shaped, softer leaf. The flowers in this group vary from white and pink to lavender, to purple and blue and some reds. They are often very small, one-half inch, in diameter and may form in small clusters or individually on the stem.

Ipomopsis aggregata (scarlet gilia) is another plant that will attract insects, bees, and butterflies as well as hummingbirds due to its bright-red, star-shaped blooms. The flowers are attached individually up the stalk and for a spike of color for the garden. This plant is not as readily available in garden centers but popularity is growing, and it can be found with a little detective work or searching. The best way

to encourage your local garden center to carry unusual plants you are interested in purchasing is to ask them to order the plant, and ask early in the season so they have a chance to get it from one of their suppliers or to get seed and have seedlings ready for sale when the season gets started. Another means of finding unusual plants like this one is to search online or in mail order catalogs for xeric plants.

As many of us are trying to develop or rejuvenate gardens more suited to our high plains desert and mountainous Wyoming conditions, considering native plants will become more and more prevalent. As gardeners request these plants, the horticulture trade will become more apt to grow and sell them to meet the needs of their clientele.

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How to estimate machinery costs

By John Hewlett

Machinery costs are one of the largest components of any agricultural enterprise requiring machinery inputs.

Higher fuel and labor prices only serve to make this component even more significant. Assembling accurate estimates of machinery and equipment costs can be an important part of any strategy to manage enterprise costs and reduce risk exposure.

How Much do Machinery Costs Matter?

Power units, non-powered equipment, and truck/vehicle costs represent a significant part of the total cost of any farm or ranch that relies on them. On a representative Big Horn Basin farm, machinery, equipment, and associated operator labor costs, totaled fully 30 percent of all farm costs. Machinery, equipment, and vehicle costs totaled 22 percent, while labor costs represented the remaining 8 percent (Powell Area Enterprise Budgets, 1995).

Component Costs

Machinery and equipment costs may be broken into two categories: fixed or ownership costs and variable or operating costs. Fixed costs include items such as depreciation, long-term interest, taxes, housing, and insurance costs. These costs do not generally change with the level of production. That is, they must be paid whether or not a single acre is planted in a given crop year.

Fixed costs may be cash costs. That is, they are paid annually by cash or check. Examples include property taxes and insurance costs on machinery and equipment. Other costs are non-cash costs but are important to accurately estimate total enterprise costs. Examples of these include depreciation and housing costs. Depreciation (other than tax depreciation) is a method of allocating the initial purchase price of a machine over its useful life. As such, no cash is paid each year for the use of the machine.

Variable costs are machinery and equipment costs, which vary with the level of machine use. That is, the more hours the machine is operated, the higher these costs become. Variable costs typically include fuel and lubrication, repair and maintenance, and operator labor costs. These are usually cash costs paid each year the machine is operated.

For the representative Big Horn Basin farm, fixed costs for machinery and equipment totaled 42 percent of all fixed costs for the farm. In addition, variable costs for the machinery were 12 percent, and operator labor was 12 percent of total variable costs. Together, machinery and equipment and operator labor costs represented 24 percent of all farm variable costs.

Estimating Machinery Costs

Many land-grant universities make available bulletins and software describing techniques for accurately estimating machinery and equipment costs. The University of Wyoming Department of Agricultural and Applied Economics in the College of Agriculture also makes such tools available. The "Wyoming Machinery Cost Calculation Program" is an easy-to-use software program for estimating the cost of powered machines, non-powered equipment, vehicles, and both powered and non-powered irrigation equipment. Output provides the user with estimates of the various fixed and variable cost items outlined above using standard formulas developed by agricultural economists and agricultural engineers, based on significant field experience.

For More Information

To access the UW *Wyoming Machinery and Operation Costs* bulletin or Wyoming Machinery Cost Calculation Software, point your Internet browser to <http://agecon.uwyo.edu/Farm-Mgt/PUBS/MACHBULS.HTM>.

For more information on the topics covered here or other risk management topics on the Web, visit the Western Risk Management Library at agecon.uwyo.edu/riskmgt.

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