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COLORADO STATE UNIVERSITY EXTENSION SERVICE

Seed species for Colorado rangelands

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Quick Facts

- Selecting adapted species and varieties is a major factor in determining success or failure in a range seeding program.
- Time of seeding, seedbed preparation and method of seeding as well as selection of seeding sites, are essential for good results.
- It is common practice to plant about twice as much seed when broadcasting compared to drilling.
- It is imperative to control competing species before seeding.
- Livestock should not be allowed to graze new seedlings until plants are well established; this may require as much as three years.

Seeding adapted species of grasses for increased forage and nutrient yield and for soil stabilization is a primary concern to land managers. Selecting adapted species and varieties is, a major factor in determining success or failure in a range seeding program.

Seeding Rangelands

It generally is recognized that seeding more favorable sites results in higher probability of establishment success and higher economic returns. Of course, time of seeding, seedbed preparation and method of seeding are essential for good results. Generally, in the mountain and foothill areas of Colorado, planting should be made in the autumn before snowfall. In the plains area of eastern Colorado, planting should be done in early spring, preferably in early April.

When planting seed, it is preferable to drill rather than broadcast the seed. If seed **is** broadcast it always should be covered in some manner unless the surface is rough and the seeds can fall into small cracks or crevices.

It is common practice to plant about twice as much seed when broadcasting compared to drilling. Research has shown that planting an abundance of seed often is a good investment since it frequently requires many years for a sparce stand to fill in adequately to control annual weeds and unwanted prernnials. Most grass seed used for range seeding should not be covered more than ½ inch (1.3 centimeters) on heavy (clayey) soils and not more than ¾ inch (1.9 cm) on light (sandy) soils.

It is imperative to control competing species before seeding: Interseeding has had limited success. Livestock should not be allowed to graze new seedlings until plants are well established, so that they will not be pulled from the soil even during muddy conditions. This may require as much as three years' rest.

Deserts

The saltdesert shrub and dry sagebrush deserts are located in valley basins where precipitation varies from five to ten inches (13 to 25 cm) annually. Many desert areas are saline in nature and support salt-tolerant plants. Other desert areas are relatively free of salts in the soil and support various species of sagebrush and grasses. However, surface mined desert lands must indeed be reclaimed and probably will require periodic irrigation until plants become established.

Foothills

The foothill areas referred to in this seeding guide consist of mixed brush and grass on the east side of the Rocky Mountains, and sagebrush, pinyon, and juniper in western Colorado. Seeding should not be attempted on thin soils, rocky areas or steep slopes. Annual precipitation in this area varies from 12 to 16 inches (31 to 41 cm). Probability of success on the better sites is high and forage potential is from 1000 to 1500 pounds per acre (1135 to 1700 kilograms per hectare).

Mountain-Brush

Mountain-brush areas are dominated by Gambel oak in southern Colorado but in northern Colorado they are composed of a mixture of species including serviceberry, chokecherry, snowberry, mountain mahogany, etc. This zone

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generally is characterized by good soils (except on rocky hillsides) and by 15 to 20 inches (38 to 51 cm) annual precipitation. Late summer planting in the Gambel oak zone in southwestern Colorado has been recommended. Other mountain-brush zones should be seeded in the autumn. Forage potential may vary from 1500 to as much as 3000 pounds per acre (1700 to 3402 kg/ha) on the better deep-soil sites.

Ponderosa Pine

Suitable seeding areas in this zone generally are confined to openings in the forest on level or gently sloping lands at moderate elevations. Even though soils may be shallow, many ponderosa pine sites are considered highly productive and suited to seeding. Mountain brush or grass may be present as understory. Precipitation is similar to the mountain brush type.

Aspen

Aspen areas are identified with high mountain ranges where precipitation averages from 18 to 22 inches (46 to 56 cm) annually. Forage potential ranges from 1500 to 3000 pounds per acre (1700 to 3402 kg/ha) on deep soil sites. Plantings are confined mostly to openings, but seedings sometimes are made under an open canopy where leaf-fall will cover the seed. Plantings usually are made in the fall and usually include a mixture of grass species.

Great Plains

The Colorado plains region is divided into the northern and southern areas because of the somewhat different environmental conditions and seeding differences in these two divisions.

Northern Plains: For seeding purposes the northern plains rangelands are further divided into two rather common soil types—sandy and clayey soils. Sandy soils occur mainly along major drainages and support both mid-length and short grasses; clayey soils occur mainly on tablelands or higher areas adjacent to major drainages. These heavier soils mainly support the short grasses. Sandy soils are somewhat more productive than clayey soils and are less affected by drought periods. Sandy soils are classed as sandy loam or loamy sand and clayey soils in most cases consist of a clay or silt loam.

Southern Plains: These rangelands in their native state support primarily blue grama and buffalo grasses. Most seeding in this area has been in conjunction with reclaiming abandoned farmland. Generally, seeding introduced species has not been satisfactory. Excellent stands of crested wheatgrass, Russian wildrye and lovegrasses have been obtained but with periods of drought they seem to disappear.

More specific information concerning range seeding is available either through your local CSU county extension office or Soil Conservation Service offices.

Table 1: Seed species for Colorado rangelands.

Geographical area and common name	Scientific name	Improved variety	Grass type	Palatability	Site suitability
Saltdesert shrub and dry sagebrush					
Since rainfall is generally less than 10 inches, seeding is hazardous and usually not recommended.					
Foothill					
Basin wildrye	*Elymus cinereus*	C-43	Bunch	Medium	Deep soil
Big bluegrass	*Poa ampla*	Sherman	Bunch	High	Gravelly
Bluebunch wheatgrass	*Agropyron spicatum*	Commercial	Bunch	High	Dry
Crested wheatgrass	*Agropyron desertorum*	Nordan	Bunch	Medium	Dry
Fairway wheatgrass	*Agropyron cristatum*	Commercial	Bunch	Medium	Dry, home sites
Hard fescue	*Festuca ovina var duriuscula*	Durar	Bunch	Medium	Disturbed Gravelly
Indian ricegrass	*Oryzopsis hymenoides*	Nezpar Paloma	Bunch	High	Sandy
Intermediate wheatgrass	*Agropyron intermedium*	*Amur *Oahe Greenar	Sod	High	Moist
Pubescent wheatgrass	*Agropyron trichophorum*	*Luna Topar	Sod	Medium	Dry
Russian wildrye	*Elymus junceus*	Vinall	Bunch	High	Dry
Streambank wheatgrass	*Agropyron riparian*	Sodar	Sod	Low	Clay loam - loam
Thickspike wheatgrass	*Agropyron dasystachyum*	Critana	Sod	Medium	Sandy loam
Western wheatgrass	*Agropyron smithii*	*Arriba Barton Rosana	Sod	Medium	Clay loam - loam

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Table 1: Seed species for Colorado rangelands. (Continued)

Geographical area and common name	Scientific name	Improved variety	Grass type	Palatability	Site suitability
Mountain brush					
Bearded wheatgrass	*Agropyron subsecundum*	Commercial	Bunch	High	Sandy loam
Big bluegrass	*Poa ampla*	Sherman	Bunch	Medium	Well drained
Crested wheatgrass	*Agropyron desertorum*	Nordan	Bunch	Medium	Dry
Hard fescue	*Festuca ovina var duriuscula*	Durar	Bunch	Medium	Sandy loam
Intermediate wheatgrass	*Agropyron intermedium*	*Amur *Oahe Greenar	Sod	High	Sandy loam
Meadow brome	*Bromus erectus*	Regar	Bunch	High	Loam
Pubescent wheatgrass	*Agropyron trichophorum*	*Luna Topar	Sod	Medium	Dry
Russian wildrye	*Elymus junceus*	Vinall	Bunch	High	Dry
Smooth brome	*Bromus inermis*	*Manchar *Achenbach Lincoln Lyon	Sod	High	Clay loam
Ponderosa pine					
Beardless pinegrass	*Blepharonauron tricholepis*	Commercial	Bunch	Medium	Dry
Big bluegrass	*Poa ampla*	Sherman	Bunch	Medium	Gravelly
Creeping foxtail	*Alopecurus arundinaceus*	Garrison	Sod	High	Moist
Hard fescue	*Festuca ovina var duriuscula*	Durar	Bunch	Medium	Distributed Sandy loam
Intermediate wheatgrass	*Agropyron intermedium*	*Amur *Oahe Greenar	Sod	High	Sandy loam
Meadow brome	*Bromus erectus*	Regar	Bunch	High	Loam
Pubescent wheatgrass	*Agropyron trichophorum*	*Luna Topar	Sod	Medium	Sandy loam
Russian wildrye	*Elymus junceus*	Vinall	Bunch	High	Dry
Smooth brome	*Bromus inermis*	*Achenbach *Manchar Lincoln Lyon	Sod	High	Clay loam
Aspen					
Arizona fescue	*Festuca arizonica*	Redondo	Bunch	Medium	Open-dry
Beardless wheatgrass	*Agropyron subsecunaum*	Whitmar	Bunch	High	Open-dry
Chewings fescue	*Festuca rubra var commutata*	Commercial	Sod	Medium	Under canopy
Intermediate wheatgrass	*Agropyron intermedium*	*Amur *Oahe Greenar	Sod	High	Sandy loam
Kentucky bluegrass	*Poa pratensis*	Commercial	Sod	High	Moist
Mountain brome	*Bromus marginatus*	Commercial	Bunch	Medium	Open-dry
Orchard grass	*Dactylis glomerata*	*Latar Sandia	Bunch	High	Moist
Slender wheatgrass	*Agropyron trachycaulum*	Primar	Bunch	High	Open-dry
Smooth brome	*Bromus inermis*	*Achenbach Lincoln Lyon *Manchar	Sod	High	Moist
Timothy	*Phleum pratense*	Climax	Bunch	High	Favorable

Table 1: Seed species for Colorado rangelands. (Continued)

Geographical area and common name	Scientific name	Improved variety	Grass type	Palatability	Site suitability
Northern plains rangeland					
Sandy Soils					
Big bluestem	*Andropogon gerardi*	Kaw	Sod	High	Favorable
Crested wheatgrass	*Agropyron desertorum*	Nordan	Bunch	Medium	Sandy loam
Green needlegrass	*Stipa virdula*	Green Stipagrass	Bunch	High	Sandy loam
Indiangrass	*Sorghastrum nutans*	*Llano Holt	Sod	High	Favorable
Indian ricegrass	*Orzopsis hymeniodes*	Commercial	Bunch	High	Favorable
Needle-and-thread	*Stipa comata*	Commercial	Bunch	High	Sandy loam
Prairie sandreed	*Calamovilfa longifolia*	Goshen	Sod	Medium	Sand
Pubescent wheatgrass	*Agropyron trichophorum*	*Lunar Topar	Sod	Medium	Sandy loam
Russian wildrye	*Elymus junceus*	Vinall	Bunch	High	Sandy loam
Sand bluestem	*Andropogon hallii*	*Woodward Elida	Bunch	Medium	Favorable
Sand dropseed	*Sporobolus cryptandrus*	Commercial	Bunch	Medium	Dry
Sand lovegrass	*Eragrostis trichodes*	Nebraska 28	Bunch	Medium	Dry
Sideoats grama	*Bouteloua curtipendula*	*Vaughn Butte El Reno	Bunch	Medium	Favorable
Switchgrass	*Panicum virgatum*	*Nebraska 28 Grenville	Sod	High	Favorable
Tall wheatgrass	*Agropyron elongatum*	*Jose Largo	Bunch	Medium	Sandy loam
Thickspike wheatgrass	*Agropyron dasystachyum*	Critana	Sod	Medium	Sandy loam
Heavy Soils					
Alkali sacaton	*Sporobolus airoides*	Commercial	Bunch	Medium	Salty
Blue grama	*Bouteloua gracilis*	Lovington	Sod	High	Sandy loam
Buffalo grass	*Buchloe dactyloides*	Sharps Improved	Sod	High	Loam
Crested wheatgrass	*Agropyron desertorum*	Nordan	Bunch	Medium	Dry
Little bluestem	*Andropogon scoparius*	Pastura	Bunch	Medium	Favorable
Russian wildrye	*Elymus junceus*	Vinall	Bunch	High	Sandy loam
Sideoats grama	*Bouteloua curtipendula*	*Butte El Reno Vaughn	Bunch	Medium	Favorable
Tall wheatgrass	*Agropyron elongatum*	*Jose Largo	Bunch	Medium	Salty
Western wheatgrass	*Agropyron smithii*	*Arriba Barton Rosana	Sod	Medium	Clay loam - loam
Southern plains rangeland					
Alkali sacaton	*Sporobolus airoides*	Commercial	Bunch	Medium	Salty
Blue grama	*Bouteloua gracilis*	Lovington	Sod	High	Sandy loam
Buffalo grass	*Buchloe dactyloides*	Sharps Improved	Sod	High	Sandy loam
Russian wildrye	*Elymus junceus*	Vinall	Bunch	High	Sandy loam
Sand dropseed	*Sporobolus cryptandrus*	Commercial	Bunch	Medium	Dry
Sideoats grama	*Bouteloua curtipendula*	*Vaughn Butte El Reno	Bunch	High	Sandy

**Variety is recommended over others in this region and soil or site conditions listed.*