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Grass planting tips for mountain communities

J. B. McClave and W. A. Berg[1/]

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Quick Facts

- All potential planting areas should be checked for possible soil problems; a soil test is recommended.
- On new construction sites, existing topsoil should be saved and replaced once construction is complete.
- Nitrogen and phosphorus often are deficient in Colorado soils.
- The time of seeding grass is important when planting at high altitudes.
- A loose, roughed-up soil is a must for broadcast seeding.
- Grass species should be selected for the area and for the desired land use.
- Drilling is the preferred seeding method for large acreages.
- Fall seeding usually is most successful for non-irrigated seedings.
- Mulches help to control erosion and aid establishment of grass by reducing evaporation.

Whether preparing home grounds for turfgrass, shrubs and trees, developing a park or revegetating road cuts and fills, construction sites or ski areas, all sites should be checked for soil problems. Steep slopes, rocky areas, areas with little or no topsoil, wet areas and sites with limited sunlight are difficult planting areas. These problems must be dealt with considering both immediate and long-term land use goals. This could include stockpiling and replacing topsoil or in some situations hauling in topsoil, draining wet areas, and selective pruning or tree removal to increase sunlight to the site. The following are suggestions for a step-by-step operation for grass establishment.

Soil Testing

A soil test for possible growing areas is recommended. It is important to remember that soil tests do not explain or correct problems associated with climatic factors, weeds or poor management, but they will help you make better decisions on what nutrients may be needed to improve the soil, or to select species adapted to existing soil conditions.

Soil testing services are available at both public and private laboratories. A basic test should provide information on pH, soluble salts, organic matter, nitrate nitrogen, phosphorus, potassium, iron and texture. The lab report also should indicate if fertilizer needs to be added and in what quantities for the species that are to be grown. Check with the local county extension office for soil test details.

Soil Preparation

On new home or other construction sites existing topsoil should be scraped, stored and then replaced on desired areas once construction is complete. Graded or hard subsoils need to be ripped, chiseled or disced prior to topsoil replacement. If grades are relatively level, a small tractor grader can be used to spread the topsoil. Sites with steep grades may require a bulldozer or hand work to move the soil into place. A harrow or hand tools are helpful in smoothing out uneven areas.

In areas where there is little or no topsoil, the addition of 4 to 6 inches (10 to 15 centimeters) of topsoil is recommended. Under most high altitude conditions topsoiling will avoid severe nitrogen deficiencies usually encountered when grass is seeded directly into subsoils. Extreme soil types such as clays or sands can be improved by working in several cubic yards per 1000 square feet (90 square meters) of peat, compost or manure to a depth of 3 to 6 inches (8 to 15 cm).

Fertilizer Application

Nitrogen and phosphorus often are deficient in Colorado soils. When determining fertilizer rates follow the soil test recommendation. If it has been impractical to get a soil test, a starter fertilizer consisting of 18-46-0 or 16-20-0 applied at the rate of 7 pounds per 1000 sq ft or 300 lbs/acre (340 kilograms per hectare) should prove beneficial.

Seeded areas that have developed sufficient growth to normally need mowing may require maintenance nitrogen. Following the first year's fertilization, an application of 34-0-0 (20-10-5 or 20-20-10 legumes are in the mix) applied at the rate of 4 lbs/1000 sq ft (2 kg/90 sq m) the next spring would be beneficial. Intensively managed areas will require more nitrogen than suggested above. Nitrogen is needed when a light green plant color and diminishing ground cover are evident.

Adequate phosphorus is needed for seedling establishment. On phosphorus-deficient sites one application should have long-lasting results. However, the solubility of phosphorus is low, thus this fertilizer needs to be mixed several inches (cm) into the soil before seeding. Nutrients other than nitrogen and phosphorus are seldom limiting, however, in a few cases potassium, iron or lime may be needed.

Seeding

The time of seeding grass is important when planting at high altitudes. If no watering is planned,

1/ *J. B. McClave, CSU extension director, Summit County; W. A. Berg, CSU professor, department of agronomy (4/1/80)*

then fall seeding (about the time the aspen change color), is recommended. At this time the soil is cooler and there is little change of germination prior to freezing weather. Fall seeding allows the seed to have a protective snow cover to overwinter in and provides a moisture supply for germination in the spring. If fall seeding is not possible and the seeding is not to be watered, then seed in the spring as soon as the ground can be worked. Summer seedings can be successful if they are watered as needed.

Seeding should be preceded by working the soil with a disc, harrow, rototiller or rake. Working should be done on the contour. On small, rough or steep areas the seed will probably be broadcast. This can be done by hand, with a small hand seeder, a broadcast seeder mounted on a vehicle, or a hydroseeder. A loose, rough-up soil is a must for broadcast seeding. Light raking or harrowing following broadcast seeding is recommended or a thin layer of peat, soil or fiber mulch should be broadcast over the seed.

Homeowners on small tracts have had good results hand seeding at the rate of 2 lbs/1000 sq ft (.9 kg/90 sq m). The 2-pound (.9-kg) rate would include a single species of grass seed or a mixture of smaller amounts of several species totaling 2 lbs/1000 sq ft (.9 kg/90 sq m). Mixes of species are recommended unless a pure stand is desired. A more uniform seed coverage can be achieved by dividing the seed into two lots, then broadcasting the second lot over the area at right angles to the direction of travel used for the first lot. After seeding, if possible, keep the soil surface moist until the grasses are established (1 inch or 2.5 cm in height).

The following commercially available shorter grasses are suitable for seeding at elevations of 8,000 to 11,000 feet (2400 to 3400 meters). Shorter grasses are those with foliage heights to 6 inches (15 cm) and seed heads to 20 inches 950 cm). An advantage of shorter grasses is that they can be left unmowed or managed for a high quality turf. While dutch clover, a low growing legume, can be seeded at a rate of 0.1 lb/1000 sq ft or 1 lb/acre (1 kg per hectare) with the shorter grasses.

Table 1: Shorter grasses for yards and recreation.

Hard Fescue	Bunch, persistent, bluegreen color.
Red Fescue	Dark green persistent, bunchy to sod forming depending on variety.
Chewings Fescue	Bunch, shade tolerant.
Kentucky Bluegrass	Persistent, spreads, less seedlings vigor than species above.
Perennial Ryegrass	Fast Starter, bunch, shade tolerant but short-lived grass.

Seeding for Erosion Control

Drilling is the preferred seeding method on large acreages, if the area is level enough and if a specialized drill is available that will dispense the seed to the proper depth (not over ½ inch or 1.2 cm) deep and considerably shallower for some small-seeded species). The taller grasses (foliage heights to 12 inches or 30 cm and seed heads to 40 inches or 102 cm) are coarser types recommended for erosion control on road cuts and other extensive disturbances (Table 2). These taller grasses usually have greater seedling vigor than the shorter grasses recommended for recreational areas. Mixes of species are recommended where possible including shorter grasses such as hard fescue. Seeding rates will vary with the type of seed. If drilled alone, the seeding rate for smooth brome or wheatgrasses is 12 lbs/acre (14 kg/hectare) the smaller seeded timothy or meadow foxtail is seeded at the rate of 2 lbs/acre (2.3 kg/hectare). When seeding a mixture, adjust the seeding rates given above to give 10-15 total pounds of seed per acre (11 to 17 kg per hectare) when drilled and double this rate when broadcast. While dutch clover, alsike clover, alfalfa and/or cicer milkvetch can be included in the mix at a seeding rate of 1 to 2 lbs/acre (1.1 to 2.3 kg/hectare) these legumes should be inoculated to insure that nitrogen fixation will occur.

Table 2: Taller grasses for erosion control.

Smooth Brome	Sod former, very persistent, good seedling vigor.
Timothy	Bunch, persistent on moist sites.
Meadow Foxtail	Persistent at higher elevations, very fluffy seed.
Pubescent Wheatgrass or Intermediate Wheatgrass	Does well on drier sites, not well adapted above 10,000 feet (3000 meters).
Slender Wheatgrass	Good seedling vigor, produces fast cover, short-lived (5-7-years).

Mulches

Mulches help to control erosion and aid establishment of grass by reducing evaporation. Commonly used mulches include straw, hay, wood fiber, wood chips, bark, fabric or mats. For the cost, straw and hay usually offer the best results if weed seed carried in these mulches is not a problem. Usually two bales spread over 1000 sq ft (90 sq m) giving 90-95-percent soil cover is adequate. Hydromulching with wood fiber offers a weed-free mulch with a low fire hazard but it is not usually as effective as straw or hay. If straw or hay is used it usually must be held in place by covering with a net or wire or by crimping into the soil. Crimpers have blunt straight discs that press mulch into the soil giving a stubble effect. Crimping can sometimes be done with a shovel or by using a disc with the blades set straight.