



TECHNICAL BULLETIN 91-1

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SUBJECT: Mulching Methods – Temporary Cover Plants

Temporary cover plants can be seeded after construction to decrease soil loss, increase organic matter, reduce weed invasions, and conserve moisture until permanent perennial vegetation can be seeded. Temporary cover crops are rapidly growing plants, usually small grains or annual grasses, that provide quick cover and soil protection for 6 to 24 months. Below is a list of temporary cover species and general information about their planting requirements, contact the local Soil Conservation Service of Extension Service office.

	Annual Precipitation Needed (inches)	Seeding Rate (lbs/acre)*	Germination Temperature °F)
Winter Cover			
Winter wheat	16+	35	40-50
Wheat-wheatgrass hybrid	14+	20	-
Annual rygrass	13+	20	-
Winter rye	12+	50	35-45
Summer Cover – Cool Season			
Spring wheats	16+	40	40
Barley	13+	40	38-60
Wheat-rye hybrid	13+	48	38
Summer Cover – Warm Season			
Sorghum	12+	8	60-70
Sudangrass	12+	25	60-65
Millet	11+	20	65-70

* Seeding rates should be reduced to ¼ when the species is used as a nurse or companion crop with native perennial plants.

Winter wheat

(*Triticum* spp.) is usually seeded in the fall and needs the cold winter climate to vernalize before seedheads are produced. However, plants that are spring-seeded provide a low-growing cover throughout the first year and can be used for almost two growing seasons before seedheads develop.

Wheat- wheatgrass hybrid

(*Triticum x Agropyron*) is a cool season plant that provides good cover and extensive root growth. "Regreen" is a named cultivar with minimal volunteer seeds. It is short-lived (two to three years) and may experience winter kill in one year at higher

elevations. Fall seeding (September-October) is recommended to give the plants a better opportunity to establish themselves before the warm dry summers.

Annual ryegrass

(*Lolium multiflorum*) is a cool-season species but is sensitive to extreme cold temperatures such as those in Rocky Mountain National Park. Cold limits germination and spreading at high elevations (9,000-10,000 feet). However, Rocky Mountain National Park has developed a technique using styrofoam-like material to cover and germinate ryegrass seed in the field. For more information refer to Rocky Mountain National Park research Note 2, "Soil Development with Annual Plants

Winter rye

(*Secale cereale*) is known for surviving cold climates (-40°F) but cannot survive hot temperatures. Rye will begin germination at temperatures in the low 30s and grow more vigorously than wheat at low temperatures. Rye should be plowed, clipped, or sprayed before seed setting because of volunteer plants. It is unsatisfactory as a comparison crop for seeding with perennial native plants because of its vigorous growth. "Saco" variety is better adapted to warmer climates. "Aroostook" is preferred for germination during cool late fall weather conditions.

Spring wheats

(*Triticum* spp.) are seeded in the spring and produce seedheads during the first growing season.

Barley

(*Hordum vulgare*) tolerates more salinity than wheat.

Wheat-rye hybrid

(*Triticale*) is a wheat-rye cross that is more drought-tolerant than barley or wheat.

Sorghum and Sudangrass

(*Sorghum* spp) and (*Sorghum sudanense*) are limited to areas that receive an average of 12 or more inches of precipitation annually and 1 or more inches during June and July and have average temperatures above 65°F. Sorghums tolerate considerable salinity and alkalinity. Sudangrass generally acts as an annual in cooler climates and can be seeded to provide quick temporary cover; however, seeds do not germinate until soil temperatures are about 55°F (daytime temperature above 75°F) and moisture is available.

Proso millet

(*Panicum milliaceum*) is a quick-growing warm-season annual. Perennial native plants can be seeded into good, clean stubble. Proso millets are killed by frosts. **Brown-top millet** is recommended for the southern parts of the country.

The addition of 40 pounds actual nitrogen will usually increase the effectiveness of annual plant cover. Mechanical control (mowing, clipping, plowing, or disking) or herbicides may be needed to eliminate volunteers from living mulch. Mechanical or herbicide treatment is recommended to conserve moisture for future native seeded plants and to reduce weed growth. To plant native perennials in existing mulch, seeds generally must be planted and with a seed drill or a seedbed must be prepared before broadcasting.

For more information about temporary cover plants, contact Wendell Hassell, Branch of Transportation, Professional Support Division, Denver Service Center, (303) 969-2172 or FTS 327-2172.