

TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE STATE OF COLORADO NATURAL RESOURCES CONSERVATION SERVICE

Plant Materials Technical Note No. 59 (revised)

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To: All Offices

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Plant Suitability and Seeding Rates for Conservation Plantings in Colorado

This revised Technical Note provides guidance for planners, producers and consultants to develop plant suitability and seeding rate recommendations for conservation plantings within Colorado.

The tables included with this Technical Note list general Climate Characteristics, Seeding Dates, Synonymy, Retardance Factors for Grassed Waterways and Seeding Rates and Species Suitability for selected conservation plantings by Major Land Resource Area (MLRA). A revised Colorado MLRA – Average Annual Precipitation map is also included.

Conservation planting recommendations developed in accordance with this Technical Note will meet species suitability and seeding rate criteria for the Colorado Natural Resources Conservation Service Conservation Practice Standards listed below.

Critical Area Planting (342)
Cross Wind Trap Strips (589C)
Filter Strips (393)
Grassed Waterways (412)
Pasture and Hayland Planting (512)

Range Seeding (550)
Riparian Forest Buffer (391)
Riparian Herbaceous Cover (390)
Soil Salinity Management – Nonirrigated (571)
Wastewater Treatment Strips (635).

General

In order to use this technical note to develop conservation planting recommendations, first identify the MLRA delineation and precipitation potential for your site. Next, go to the Suitability Table and select species based on local site conditions and the Conservation Practice to be applied. Then identify the appropriate seeding rates and dates for the selected species.

Seed mix recommendations developed for Critical Area Planting and erosion control purposes shall be comprised of at least 50 percent adapted sod forming species.

Plant Suitability

In many cases, the selection of adapted cultivars is just as important as the selection of adapted species for the proper functioning of vegetative conservation practices. Some species and cultivars grow over wide geographic areas while others have specific site requirements. Species and cultivars seeded outside their range of adaptation may exhibit poor establishment, decreased forage and seed yields and short-lived stands due to winterkill, drought or excessive soil moisture.

The use of named cultivars that have been evaluated under similar field conditions in similar MLRAs is generally recommended. Good performance can be expected when adapted species and cultivars are planted within prescribed soil, climate and site limitations.

Seeding Rates

Actual seeding rates shall be within 90 to 125 percent of the rates given in this Technical Note.

Nonirrigated seeding rates should be used in areas that will only be irrigated during establishment or if the area will only receive supplemental irrigation.

This Technical Note does not provide specific seeding rate recommendations for row plantings for seed production. Generally, seeding rates for 30 to 40 inch row plantings are 1/4 to 1/3 of the drilled rates for solid stand plantings, or 20 to 40 seeds per linear foot of row.

Seeding rate recommendations provided in this Technical Note are given in pounds Pure Live Seed (PLS) per acre. To determine pounds PLS from a Seed Tag, multiply the Percent Purity X Percent Germination X Total Bulk Pounds. Seed Tag Analysis is required by State and Federal Seed Laws.

Example – Calculating PLS Quantities for a Mixture from Seed Tag Analysis

<u>Species</u>	<u>Percent Purity in Mix</u>		<u>Percent Germination</u>		<u>Pounds Bulk Pounds</u>		<u>PLS</u>
Western wheatgrass	47.67	X	.90	X	816.5	=	350
Sideoats grama	14.25	X	.86	X	816.5	=	100
Green needlegrass	8.28	X	.74	X	816.5	=	50
Blue grama	7.66	X	.80	X	816.5	=	50

In order to compute seeding rates for mixtures, decrease the given Solid Stand Seeding Rate for individual species proportional to the percentage of the species in the mixture.

Example - Nonirrigated drilled seeding mixture for Range Seeding

<u>Species</u>	<u>Percent of Mix</u>		<u>Solid Stand Seeding Rate</u>		<u>Mixture Seeding Rate</u>
Sideoats grama	.50	X	4.5	=	2.25 lbs PLS per acre
Blue grama	.30	X	1.5	=	0.45 lbs PLS per acre
Western wheatgrass	.20	X	8.0	=	1.60 lbs PLS per acre

Example - Nonirrigated drilled seeding mixture for Critical Area Planting

<u>Species</u>	<u>Percent of Mix</u>		<u>Solid Stand Seeding Rate</u>		<u>Mixture Seeding Rate</u>
Western wheatgrass	.75	X	16	=	12.00 lbs PLS per acre
Streambank wheatgrass	.25	X	11	=	5.50 lbs PLS per acre

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Table 2. Seeding Dates	Seeding Dates for Conservation Plantings by Major Land Resource Areas within Colorado
Table 3. Synonymy	Synonymy Cross Reference
Table 4. Retardance Factors	Retardance Factors for Grassed Waterways within Colorado
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Table 6. Suitability	Perennial Graminoid, Forb and Woody Plant Suitability for Conservation Plantings by Major Land Resource Areas within Colorado
Map	Colorado Precipitation and MLRAs (Major Land Resource Areas)