

Guidance Documents

Resource Management System Guide Sheet

For: DRY CROPLAND

STATE: Montana
F.O.: Yellowstone County
Date: April 2006

RESOURCE SETTING: The area is a dry cropland area northwest of Billings in an area of 10–14 inches of annual precipitation. Precipitation limits crop production generally to small grains in rotation with summer fallow. Elso and Razor are the predominant soil series and are described generally as follows:

ELSO CLAY LOAM: Soil is 10-20 inches deep with a light colored surface layer.

Slopes are 4–7 percent. Total water holding capacity is 1.8–2.3 inches.

Tolerable soil loss "T" is 2 tons per acre.

RAZOR CLAY LOAM: Soil is 20–40 inches deep with a dark colored surface layer.

Slopes are 2–7 percent. Total water holding capacity is 3.2–3.9 inches.

Tolerable soil loss "T" is 2 tons per acre.

IDENTIFIED PROBLEMS: Soils are subject to wind and water erosion. Due to years of crop-fallow grain production and wind erosion, soil tilth, and water capacity have been reduced. Sheet and rill erosion as well as erosion from ephemeral gullies has occurred. Saline seep occurs from deep percolation of surface water. Small grain and grass production are adversely affected due to these problems. A deficiency of nutrients has occurred due to lack of soil testing and fertilizer application.

ESSENTIAL PRACTICES: The practice standards considered to be essential to meet a RMS are 328–Conservation Crop Rotation, 344–Residue Management, Seasonal, 590–Nutrient Management, and 595–Pest Management.

RMS OPTIONS:

RMS #1 Practices (Flexible—No-Till)

328	Conservation Crop Rotation	Small grain--small grain--fallow sequence. (C–C–F)
329	Residue and Tillage Management, No-Till/Strip Till/Direct Seed	Maintain crop residue to reduce erosion and maintain moisture.
412	Grassed Waterway	Protect concentrated flow areas.
585	Stripcropping	Alternate strips for wind erosion control, 20 rods or less wide.
610	Salinity and Sodic Soil Management	Re-vegetate recharge areas to perennial cover to control saline seeps.
590	Nutrient Management (Deficient)	Manage nutrients, particularly nitrogen and phosphate, for optimum crop production.
595	Pest Management (Chemical)	Control pests in crops and adjacent rough areas.

RMS #2 Practices (Mulch Tillage with Grasses and Legumes in Rotation)

328	Conservation Crop Rotation	2-years small grain, 2-years fallow, and 2-years legumes/grass. (SG–SG–F–G–G–F)
345	Residue and Tillage Management, Mulch Till	Reduced tillage plus chemical weed control.

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For: **DRY CROPLAND** CONTINUED

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RMS OPTIONS CONTINUED:

RMS #2 Practices (Mulch Tillage with Grasses and Legumes in Rotation) CONTINUED

412	Grassed Waterway	Protect concentrated flow areas.
511	Forage Harvest Management	Manage hayland to maintain or improve the stand.
512	Forage and Biomass Planting	Establish suitable pasture or hayland mixture.
585	Stripcropping	Alternate strips for wind erosion control, 20 rods or less wide.
610	Salinity and Sodic Soil Management	Re-vegetate recharge areas to perennial cover to control saline seep.
590	Nutrient Management (Deficient)	Manage nutrients, particularly nitrogen and phosphate, for optimum crop production.
595	Pest Management (Chemical)	Control pests in crops and adjacent rough areas.

RMS #3 Practices (Mulch Tillage with Grasses and Legumes in Rotation)

328	Conservation Crop Rotation	5-years small grain, 2-years fallow, and 4-years grass/legumes (SG-SG-SG-F-SG-SG-G-G-G-F)
345	Residue and Tillage Management, Mulch Till	Reduced tillage plus chemical weed control. (1,000 lbs. residue equivalent per acre)
344	Residue Management, Seasonal	Maintain crop residue to reduce erosion and maintain moisture.
412	Grassed Waterway	Protect concentrated flow areas.
511	Forage Harvest Management	Manage pasture or hayland to maintain or improve the stand.
512	Forage and Biomass Planting	Establish suitable pasture or hayland mixture.
585	Stripcropping	Alternate strips for wind erosion control, 20 rods or less wide.
610	Salinity and Sodic Soil Management	Re-vegetate recharge areas to perennial cover to control saline seep.
590	Nutrient Management (Deficient)	Manage nutrients, particularly nitrogen and phosphate, for optimum crop production.
595	Pest Management (Chemical)	Control pests in crops and adjacent rough areas.

EXAMPLE RMS GUIDE SHEET—To be discarded after local guide sheet is developed.