

NATURAL RESOURCES CONSERVATION SERVICE
MONTANA CONSERVATION PRACTICE JOB SHEET

CONSERVATION CROP ROTATION (ACRE)

CODE 328(E)

FLEXIBLE COVER CROP MIX-CEREAL CROPPING

Landowner	Field/Management Unit	Date
Legal Description	Contract Item Number	Acres
		Job Class

Purpose (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> REDUCE SHEET/RILL/WIND EROSION | <input type="checkbox"/> IMPROVE SOIL QUALITY |
| <input type="checkbox"/> MANAGE THE BALANCE OF PLANT NUTRIENTS | <input type="checkbox"/> PROVIDE CROPS FOR BIOENERGY FEEDSTOCKS |
| <input type="checkbox"/> CONSERVE WATER | <input type="checkbox"/> MANAGE SALINE SEEPS |
| <input type="checkbox"/> MANAGE PLANT PESTS | <input type="checkbox"/> PROVIDE FEED FOR DOMESTIC LIVESTOCK |
| <input type="checkbox"/> SUPPLY NITROGEN THROUGH BIOLOGICAL FIXATION TO REDUCE ENERGY USE | <input type="checkbox"/> PROVIDE FOOD AND COVER FOR WILDLIFE AND POLLINATORS |

PLANNED ROTATION:

YEAR	CROP	ESTIMATED YIELD	HARVEST METHOD

CROP DIVERSITY INDEX:

Benchmark Index: _____ Planned Index: _____

CROP ROTATION INTENSITY RATING:

Benchmark Index: _____ Planned Index: _____

MT328(E)-JS2

FERTILIZER PLAN: See FOTG, Section IV, Practice Specification, Nutrient Management (Code 590)

CROP	PROJECTED YIELD	N	P	K	OTHER	APPLICATION DATE	APPLICATION METHOD
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Additional fertilizer information:

WEED CONTROL PLAN: See FOTG, Section IV, Practice Specification, Integrated Pest Management (Code 595)

Chemical or mechanical. Producer's plan for use of herbicides, rates, and application:

DISEASES AND INSECT CONTROL: See FOTG, Section IV, Practice Specification. Integrated Pest Management (Code 595)

Producers plans for disease or insect control if problems should occur:

Chemicals used in performing this practice must be federally, state and locally registered. They will be applied strictly in accordance with authorized registered uses, directions on the label, and other federal, state, and local regulations.

SCI, SCI subfactors OM, FO and ER, STIR and Wind or Water Soil Erosion Loss Output (specify wind or water erosion)

<i>Soil conditioning index (SCI)</i>	<i>Average annual slope STIR</i>	<i>Wind or water soil erosion Loss (tons/ac)</i>
SCI subfactor (OM)	SCI subfactor (FO)	SCI subfactor (ER)

The **SCI** is the **Soil Conditioning Index** rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system. SCI estimates the combined effect of three subfactors; organic matter, field operations and erosion.

OM is organic material, this component accounts for the effect of organic material returned to the soil. Organic material from plant or animal sources may be either grown or retained on site or imported to the site.

FO is field operations, this component accounts for the effect of field operations that stimulate organic matter breakdown. Tillage, planting, fertilizer application, spraying and harvesting crush and shatter plant residues and aerate or compact the soil. These effects increase the rate of residue decomposition and affect the placement of organic material in the soil profile.

ER is erosion. This component accounts for the effect of removal or sorting, or both, of surface soil material by the sheet, rill, or wind erosion processes that are predicted by water and wind erosion models. It does NOT account for the effect of concentrated flow erosion such as ephemeral or classic gullies. Erosion contributes to loss of organic matter and decline in long-term productivity.

The **STIR** value is the **Soil Tillage Intensity Rating**. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

DECISION TO RE-CROP: The two major factors in deciding to re-crop in a flexible crop rotation are the annual available water and the stored subsoil moisture available determined just prior to planting. Approximately 9 inches of plant available water, at a minimum, is needed to produce a small grain crop. For every additional inch of plant available water 4-5 bushels per acre yield may be expected. Available water is stored soil moisture plus the potential growing season precipitation expected at the 70 percent probability level. The upper 4 feet of soil is used to calculate the stored soil moisture. It should be noted that this method assumes adequate weed control and adequate fertility levels to meet production goals.

In a dry year the cover crop “cocktail mix” is terminated to build soil health. If good moisture prevails the crop can be maintained for forage. Subsoil moisture must be monitored regularly and the crop terminated before excess subsoil moisture is extracted.

Use the following calculations to determine when to **re-crop**:

Planting Spring Crops:

_____ inches stored soil plant-available water (measured in spring)
 + _____ inches growing season precipitation – 70% probability
 _____ TOTAL inches plant-available water for growing season

Planting Winter Crops:

_____ inches stored soil plant-available water (measured in fall)
 + _____ inches average winter precipitation X adjustment factor
 + _____ inches growing season precipitation – 70% probability
 _____ TOTAL inches plant-available water for growing season

APPROVALS:

NRCS Conservationist

JOB APPROVAL AUTHORITY

Date

Producer

Date

CERTIFICATION STATEMENT:

I hereby certify that this practice has been installed in accordance with NRCS standards and specifications.

NRCS Conservationist

JOB APPROVAL AUTHORITY

Date

Date