



Resource Conservation Cropping Rotation Fact Sheet

USDA Natural Resources Conservation Service – Wyoming

November 2008



What is a resource conserving crop rotation?

Crop rotation simply means growing different crops in a recurring sequence on the same piece of land. While a resource-conserving crop rotation means a crop rotation that includes at least one resource conserving crop, and reduces wind and water erosion, increases soil organic matter, improves soil fertility and tilth, interrupts pest cycles, and reduces depletion of soil moisture or otherwise reduces the need for irrigation in applicable areas. The criteria for a resource –conserving crop rotation falls into one of the following categories:

1. A perennial grass, legume, or grass/legume grown for use as forage, seed or green manure.
2. A high residue producing crop.
3. A cover crop following an annual crop.

How it helps the land

The effect a crop rotation will have on the land varies with the capability of the soils; the type of crops grown; how the crops are grown; and how the crop residue is managed. Crop residue increases soil moisture, which increases crop yields and residue production. Adding the number of years a perennial or legume is in the total rotation assists in retaining a high level of residue. High residue crops such as small grains or corn for grain are often the key to a good rotation. Good stands are needed to produce high yields, increase profit, return more organic matter to the soil, manage moisture, improve or maintain tilth, and to effectively control wind and water erosion. Alternating grasses and broadleaf; and warm season and cool season crops help break up pest cycles. Rotations can also benefit wildlife by providing a variety of food and cover. It may also provide protection and habitat for pollinators. Summer fallow, weeds, and volunteer plants are not considered resource conserving crops.

Planning considerations for a resource conserving crop rotation:

1. A minimum of two crops if one of the crops is a perennial lasting at least 2 years, OR;
2. A minimum of 3 crops, if no perennial, and at least 1/2 the rotation is a high residue crop; OR
3. A minimum of 2 crops, if no perennial, and an unharvested cover crop (no silage or crop residue removed from the system) following one of the crop years. This may include summer fallow if seeded to a cover crop.

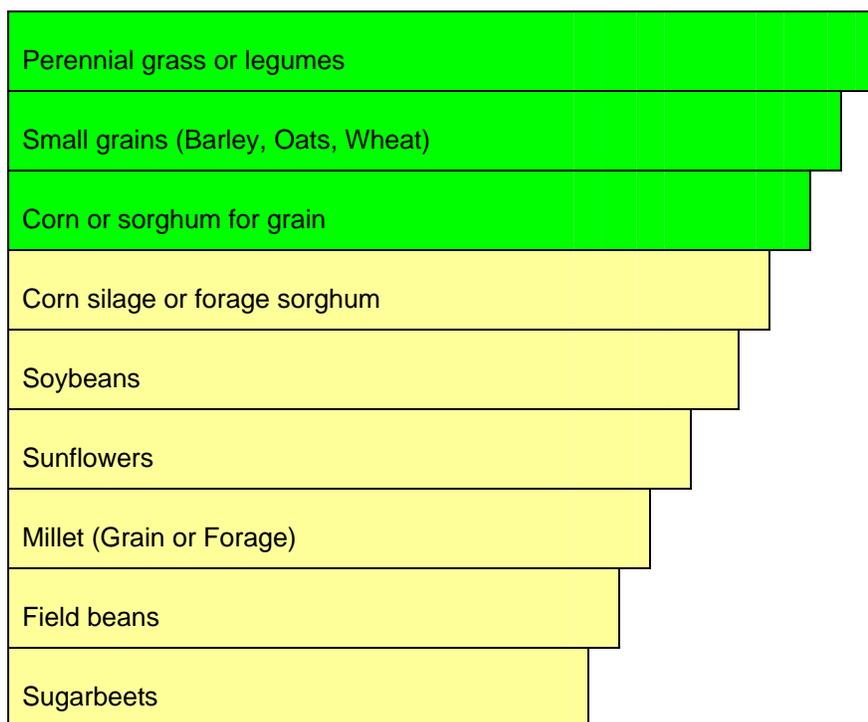
High Residue Crops: Crop selection, including varieties, will influence the amount of residue produced. Crops can be generally categorized into high and low residue producing groups. High residue crops generally provide more erosion protection, improve soil organic matter, and improve soil moisture conservation.

High Residue Crops	Low Residue Crops	Perennial grasses, legumes
Barley Oats Wheat Corn for Grain Sorghum for Grain	Corn or Sorghum for silage Dry beans Sunflowers Millet Sugarbeets/Potatoes Vegetable crops	Alfalfa Cicer Milkvetch Sainfoin Smooth brome Wheatgrasses Others

Crops can also be categorized by growth into following groups:

Cool Season Grass	Warm Season Grass	Cool Season Broadleaf	Warm Season Broadleaf
Wheat, Winter & Spring Barley Oats Rye	Corn Sorghum Sudangrass Millet	Field peas Alfalfa Sugarbeets Canola/Camelina	Dry beans Potato Safflower Sunflower

Weather conditions, unexpected herbicide carryover, and marketing considerations may affect year-to-year cropping decisions. These conditions may require a change in your scheduled rotation. A simple adjustment to rotations can often be made by following these guidelines. Any crop listed above the originally planned crop may be substituted to maintain the highest residue conditions.



Cover crops: Long-term use of cover crops increases water infiltration and reduces evaporation. They trap surface water and add organic matter by slowing erosion and runoff. Cover crops reduce nonpoint source pollution caused by the run-off of sediments, nutrients and pesticides. Nutrients may be managed when nitrogen-fixing (legumes) cover crops produce nitrogen for the next crop. Some enhance pest management strategies. Cover crops should be planted timely and will not be harvested.

Non Legumes, Grasses	Non legumes, Non grasses	Legumes
Barley Oats Wheat Sorghum-sudan	Mustards Radish Rapeseed Millet	Field peas Hairy vetch Medics Sweetclover

Wyoming Resource Conserving Crop Rotation- Supplemental Payment Activity Guidance – CCR99

Resource Conserving Crops in Wyoming (three types of resource conserving crops are allowed as follows):

1. Perennial grasses or legumes
 - Alfalfa or other adapted perennial legume (refer to Plant Material Technical Notice #3 for a complete list of adapted perennial legume species)
 - Adapted perennial grasses with and without perennial legumes (refer to Plant Material Technical Notice #3 for a complete list of adapted perennial grass/legume species)
 - Perennial grasses/legumes must be part of a crop rotation with annual crops.

2. High Residue Producing Crops (with or without cover crops)

Corn Grain	Small Grains (Winter or Spring Wheat, Oats, Barley, Triticale)	Dry Beans
Corn Grain	Small Grains (Winter or Spring Wheat, Oats, Barley, Triticale)	Sugarbeets
Corn or Grain	Forage Sorghums, Sudangrass or similar forage crops with 18 inches or more of re-growth after forage harvest (prior to a killing frost)	Sugarbeets or Dry Beans

- Removal of stover by baling or other methods is not allowed.
- Removal of straw following small grains is allowed when at least 10 inches of stubble height is maintained after removal.
- Incidental grazing is allowed when managed to maintain 50% or more crop residue ground cover after grazing.

3. Low residue crops that qualify if a cover crop is planted following harvest

Sunflowers	Winter Wheat	Millet
Sunflowers	Fallow with cover crop	Winter Wheat
Millet	Fallow with cover crop	Winter Wheat
Sunflowers or Millet	Fallow with cover crop	Spring Wheat
all high residue crops listed in number two above that have excessive residue removed by grazing or baling that does not maintain at least 50% ground cover or required stubble height.		

- All low residue crops must be direct harvested
- Other low residue crops do not qualify unless authorized by the state agronomist prior to planting.
- Cover crop requirements following fall harvested low residue crops:
 - Must be annual small grain or/ annual small grain with legume cover crop.
 - Annual cover crops
 - Cover crop must be planted without tillage
 - Planting dates, seeding rates, method of planting and other requirements must follow 340 Cover Crop Standard Requirements
 - Must allow for 10 or more inches of growth prior to termination
 - Cover crops can not be harvested or grazed

***Examples of Resource Conserving Crop Rotations include:**

Any rotation that includes alfalfa provided that the alfalfa is planted on 1/3 of the contract acres and alfalfa is across all acreages along with rotated with annual crops.

*Other high residue producing crops can be substituted (i.e. high residue summer annual crops such as sorghum or millet can be substituted for corn, other types of small grains can be substituted for wheat, or other adapted perennial legumes/grasses may be substituted for alfalfa). Low residue crops may not follow another low residue crop. Additional years of resource conserving crops can be added to lengthen the rotation.