Conservation Crop Rotation

Illinois Conservation Practices Job Sheet 328 ***September 2011***

Photos courtesy of USDA NRCS.

What are crop rotations?

Crop rotation is the practice of growing different crops in a recurring, planned sequence on the same acreage. The practice may involve alternating high residue producing crops such as corn with low residue producing crops like soybeans. Crop rotations may also involve rotation with small grain or a grass – legume hay crop.

Purpose

The practice is applied as part of a conservation system. Properly planned rotations reduce soil erosion by water and/or wind, improve crop yields, increase profit, maintain or increase soil organic matter and tilth, manage plant pests, and reduce fertilizer needs.

Where the practice applies

Crop rotations can be used on all land where crops are grown. Crop rotations more effectively achieve the planned purposes when implemented with other conservation practices such as residue and tillage management, cover crops, field windbreaks, contouring, stripcropping, and grassed waterways.

Specifications

To reach the planned level of erosion control and other benefits, the crop sequence in the narrative section in the conservation plan must be followed. The practice is considered applied when the most soil conserving crop has been planted at least once in each specified field, or when it is clear the specified crop ratio is currently in place for all affected fields or treatment units. The most soil-conserving crop is the crop with the lowest overall erosion potential.

Maintaining the practice

After the most soil-conserving crop is established, it must be rotated with the other crops according to the planned rotation. Weather conditions, unexpected herbicide carryover, and marketing considerations may affect year to year cropping decisions and may require a change in the scheduled rotation. A simple adjustment to rotations can often be using the following guidelines:

- Crop substitution is permitted only if an equal or more soil-conserving crop is planted. In addition, any requirements for crop residue cover must also be met when planting the substitute crop and in following years.
- Small grains and hay can always be used to replace any row crop or low-residue crop.
- Corn harvested for grain with residues left in the field can be used to replace soybeans or any other low-residue producing crop.

• For crop rotations that include hay, the rotation can be lengthened by maintaining the existing hay stand for additional years.
• Crop sequences involving additional years of annual crops will need to be analyzed by NRCS prior to planting the crop.

Considerations

When used in combination with Stripcropping Practice Code 585, the crop sequence should be consistent with the Stripcropping design.

Consider combinations with Residue and Tillage Management practices, high residue crops, cover crops, increased plant populations, narrower row spacing to enhance production and distribution of residue required. Utilizing animal wastes, or applying mulches will help maintain or improve organic matter. Deep rooted crops and/or cover crops in the rotation can help recover excess plant nutrients from the soil profile. Deep-rooted crops incorporated into a rotation can also improve utilization of available water in the soil profile and penetrate compacted soil layers Herbicide applications should be carefully planned to avoid negative impacts on the following crop.

Soil moisture can be conserved by maintaining crop residues on the surface or by trapping snow with standing residue, windbreaks, or other barriers.

Unharvested crop rows and crop residues can provide wildlife with valuable food and cover during the winter months. Careful consideration should be given to pesticide use if applied to crops raised for wildlife.

Care should be taken, especially during site preparation and maintenance, to avoid adverse effects to significant cultural resources. Follow NRCS state policy for considering cultural resources during planning and maintenance.

Purpose (check all that apply)

☐ Reduce erosion.	☐ Manage saline seeps
☐ Improve soil quality	☐ Manage plant pests (weeds, insects, and diseases)
☐ Manage the balance of plant nutrients	☐ Provide food for domestic livestock
☐ Supply nitrogen via fixation	☐ Provide annual crops for bioenergy feedstocks
☐ Conserve water	☐ Provide food and cover for wildlife

Rotation Schedule and Documentation

General Specifications

- Crops shall be grown in a planned recurring (rotation), unless a suitable substitution crop is used.
- Use adapted crops and varieties.
- Cover and green manure crops may be grazed as long as enough biomass remains for the intended purpose(s).
- A conservation crop rotation may include crops planted for cover, nutrient enhancement, or weed control.

For:	**Farm #:**
Field(s):	**Tract #:**

Designed By Date:	Approved By: Signature: Date:

Year in Rotation	Crop (s)	Additional notes: Seeding date and rate, Tillage, Soil Amendments, etc.
1		
2		
3		
4		
5		
6		

Operation and Maintenance: Report any change in crops or sequence, including reasons for change.
Additional Specifications and Notes: