



Conservation Crop Rotation

WA-328

Washington Conservation Practice- Energy CAP Job Sheet

July 2013

Operator:

Technical Service Provider:



Definition

Conservation Crop Rotation is the practice of growing crops in a planned, reoccurring sequence on the same field.

Purposes

Energy:

- Supply nitrogen through biological nitrogen fixation to reduce energy use.

Additional Resource Concerns:

- Reduce sheet-and-rill or wind erosion.
- Improve soil quality.
- Manage the balance of plant nutrients.
- Supply nitrogen through biological nitrogen fixation to reduce energy use
- Conserve water.
- Manage saline seeps.
- Manage plant pests (weeds, insects, and diseases).
- Provide feed for domestic livestock.
- Provide annual crops for bioenergy feedstocks.
- Provide food and cover for wildlife, including pollinator forage, cover, and nesting.

Where Used

This practice applies to all cropland land where annually-planted crops make up at least one-third of the crop sequence (time basis).

Conservation Management Systems

Conservation Crop Rotation is utilized as a component of a resource management system. Other management and structural practices are utilized in resource management planning to address the natural resource concerns identified during the planning process.

Practice Specifications

Practice specifications are provided to ensure that the planned crop rotation meets the resource needs and the producer's objectives. Crops shall be grown in a planned, recurring sequence as outlined on Specification Worksheet.

Additional Criteria to Supply Nitrogen Through Biological Nitrogen Fixation to Reduce Energy Use

When crop rotations are designed to add nitrogen to the system, nitrogen-fixing crops shall be grown immediately prior to or interplanted with nitrogen-requiring crops. Nitrogen will be accounted for in budgeting nitrogen for subsequent crops.

Considerations

When used in combination with Stripcropping (practice code 585), the crop sequence should be consistent with the stripcropping design.

Soil compaction can be reduced by adjusting crop rotations to include crops with deep roots that extend to and penetrate compacted soil layers.

Where improving water use efficiency on deep soils is a concern, rotating or combining deep-rooted crops with shallow rooted crops can help utilize all available water in the soil profile.

Where pesticides are used, use a combination of pesticide application methods and crop rotation to reduce the potential for pesticide carryover or adverse affects on aquatic wildlife or habitat through runoff.

Additional Considerations to Supply Plant Produced Nitrogen to Conserve Energy

Select crops that have the potential to provide larger amounts of biologically fixed nitrogen.

When crop rotations are designed to add nitrogen to the system, nitrogen-fixing crops shall be grown immediately prior to or inter-planted with nitrogen-requiring crops.

Select crop and management strategy to match nitrogen release from residues of nitrogen fixing crop with nitrogen uptake by subsequent crop, taking into account climate, soil physical and chemical properties, C:N ratio of residues of the nitrogen fixing crop, and timing of nitrogen demand by the subsequent crop.

Operation and Maintenance

Rotations shall provide for acceptable substitute crops in case of crop failure or shift in planting intentions for weather related or economic reasons. Acceptable substitutes are crops having similar properties that will accomplish the purpose of the original crop.

Evaluate the rotation and the crop sequence to determine if the planned system is meeting the planned purposes. In areas where summer fallow is practiced, the decision to plant a crop or fallow shall be made annually based on soil moisture at planting time. Fields shall be fallow only when soil moisture is not adequate to produce a crop. If moisture supply is adequate but limited, short-season shallow rooted crops shall be selected and grown. Deep-rooted crops shall follow shallow rooted crops in subsequent years, if needed to utilize all plant available water in the root zone.

CLIENTS ACKNOWLEDGEMENT

By signing below, I acknowledge that I:

have reviewed and understand the above information on Conservation Crop Rotation and that if entered into a contract for this practice with the NRCS the following will be required.

- will work with NRCS on what legume crop species will be used to develop a conservation crop rotation to supply nitrogen through biological nitrogen fixation to reduce energy use;
- will work with NRCS on development of a nitrogen budget to show reduction of nitrogen use with the additional biological nitrogen fixation from my planned conservation crop rotation;
- at the end of the each growing season supply NRCS with growing and fertilization records from each field in the planned acres of the conservation crop rotation;
- will continue the planned conservation crop rotation for contract period that 328 conservation practice is planned.

All practices contracted with the NRCS will be subject to current WA conservation practice standards.

Client's signature: _____ Date: _____

Contract No. _____