

**Natural Resources Conservation Service
Conservation Practice Standard**

**CONSERVATION CROP ROTATION
(Ac.)
CODE 328**

DEFINITION

Growing crops in a recurring sequence on the same field. Rotations are for two or more years.

PURPOSE

This practice will be applied as part of a conservation management system to support other planned conservation practices. Application of this practice should:

- improve or maintain good physical, chemical, and biological conditions of the soil;
- help reduce soil erosion;
- improve water use efficiency;
- manage plant pests (weeds, insects, diseases);
- provide food for domestic livestock;
- provide food and cover for wildlife.

CONDITION WHERE PRACTICE APPLIES

This practice applies to all cropland and other land where crops are grown. This standard does not apply to pastureland, hayland, or other land uses where annual row or close growing crops are grown to facilitate renovation or re-establishment of perennial vegetation.

CRITERIA

Crops will be grown in a planned, recurring sequence except as outlined in operation and maintenance. Crops must be adapted to the climate and the soil resource. Adapted crops and varieties listed in appropriate university publications or other approved sources will be selected. A conservation crop rotation system may include crops planted for cover or nutrient enhancement.

Crops will be selected that produce enough above and below ground biomass to control erosion within the soil loss tolerance (T) or any

other planned soil loss objective. Soil loss calculations shall account for the effects of other practices in the conservation management system.

Where irrigation is used, crops or cover crops will be selected that develop surface cover or canopy rapidly or that produce the amount of residue needed to be maintained on the soil surface to achieve the soil loss objective.

Crops shall be selected that produce the amount of plant biomass needed to maintain soil organic matter content. If partial removal of residue by baling or grazing occurs, enough residue will be maintained to achieve the desired soil organic matter. Cover and green manure crops planted for soil improvement may be grazed as long as grazing is managed to retain adequate biomass.

Crops shall be alternated to break the pest cycle and/or allow for the use of a variety of other control methods. Affected crops and alternate host crops will be removed from the rotation for the period of time needed to break the life cycle of the targeted pest. Resistant varieties listed in appropriate university publications or other approved sources will be selected where there is a history of a pest problem.

Under some conditions, crops cannot be rotated from one crop specie to another crop specie. In this case, the crop to be grown continuously will be planned. When planning continuously-grown crops, cropping sequence should be planned to utilize rotations between genetically engineered and/or resistant crops. Examples include rotations between Round-Up Ready soybeans and none Round-Up Ready soybeans; Liberty Link soybeans and none Liberty Link soybeans; Round-Up Ready cotton and none Round-Up Ready cotton; Buctril Resistant (BXN cotton) and none Buctril Resistant (BXN cotton); Liberty Link corn and none Liberty Link corn; Cyst Nematode Resistant soybeans and none Cyst

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

Nematode Resistant soybeans; and the use of Bt cotton. In cases where continuously grown crops do not produce adequate crop residue to control soil erosion or maintain or improve soil organic matter, a no-till cover crop of vetch or wheat may be needed.

When crops such as annual grasses are used to provide food for livestock, the livestock numbers will be balanced with the crops produced by calculating the proper stocking rate.

CONSIDERATIONS

When used in combination with residue management practices, selection of high residue producing crops, use of cover crops and row spacing can enhance production of the amount of residue.

Where erosion induced by furrow irrigation is a concern, irrigating alternate furrows may reduce the erosion hazard and provide better soil aeration.

Where erosion induced by sprinkler irrigation is a concern, the hazard can be reduced by basin tillage (dammer-dikes), contour farming, contour stripcropping, field stripcropping, contour buffer strips, no-till or vegetative barriers.

Where maintaining or improving soil organic matter is an objective, the effect of this practice can be enhanced by managing crop residue (especially no-till), utilizing animal waste, or applying mulches to supplement the biomass produced by crops in the rotation.

Where excess plant nutrients or soil contaminants are a concern, rotating deep rooted crops or cover crops with shallow rooted crops can help recover the nutrients from the soil profile.

PLANS AND SPECIFICATIONS

Specification for establishment and operation of this practice will be prepared for each field or treatment unit according to the criteria, considerations, and operation and maintenance described in this standard. Specifications will be recorded using approved job sheets (approved by state agronomist) or narrative statements. Table 1 shows examples of crop rotation systems commonly used in Mississippi.

Table 1
Crop Rotation Systems

Year 1	Year 2	Year 3
Corn	Soybeans	Cotton
Soybeans	Soybeans	Cotton
Corn	Cotton	Cotton
Cotton	Soybeans	Cotton
Corn	Wheat/Soybeans	Corn
Corn	Soybeans	Corn
Rice	Soybeans	Rice

OPERATION AND MAINTENANCE

Rotations will 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 meet the criteria for all the resource concerns identified for the field or treatment unit. Examples would be substituting grain sorghum for corn, cotton for soybeans, etc., as long as the rotation meets designed objectives.