NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

CONTOUR FARMING
(Acre)
CODE 330

DEFINITION

Tillage, planting, and other farming operations performed on or near the contour of the field slope.

PURPOSES

- To reduce sheet and rill erosion.
- To reduce transport of sediment and other water-borne contaminants.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on sloping land where crops are grown.

Contour farming is most effective on slopes between 2 and 10 percent. This practice is not well suited to rolling topography having a high degree of slope irregularity because of the difficulty meeting row grade criteria. This standard applies to land where contour buffer strips (332) are used.

CRITERIA

General Criteria Applicable to All Purposes

Minimum Row Grade

Row grades for soils with slow to very slow infiltration rates (soil hydrologic groups C or D), or for crops sensitive to ponded water conditions for periods of less than 48 hours, shall be designed with positive row drainage of not less than 0.2 percent on slopes where ponding is a concern.

Maximum Row Grade

The row grade shall be aligned as close to the contour as possible with the exception of alleviating ponding conditions. The maximum row grade shall not exceed half of the RUSLE field slope percentage or two percent whichever is less. Up to five percent row grade is allowed for a maximum of 200 feet when crop rows drain to a stable outlet or on rolling topography.

When the row grade exceeds the maximum allowable, a new baseline shall be established and used for layout of the next contour pattern. All tillage and planting operations will be parallel to the base line. An occasional exception will be at the top and/or bottom of the field where established field boundaries are not parallel to

established base lines. In this case as much of the field as practical will be planted parallel to the established baseline.

Minimum Ridge Height
A minimum ridge height of 0.5 to 2 inches is required during the period of the rotation that is most vulnerable to soil erosion. Ridge height will be evaluated using current RUSLE (Revised Universal Soil Loss Equation) erosion prediction technology found in the Pennsylvania Technical Guide or in Agricultural Handbook 703.

Due to management techniques and weathering throughout the year, ridge height is generally quite variable. The ridge height used for calculating effectiveness should be representative of the conditions during period(s) when erosion is expected to occur.

The minimum ridge height criteria is not required for close-grown crops, such as grasses, legumes and small grains or when crop residue levels of 50% or more are generally maintained after planting

Critical Slope Length
Contour farming is not considered effective when used on slopes longer than the critical slope length.

The computation of critical slope length using RUSLE 2, shall be used for this practice in all cases where RUSLE 2 is used for soil loss prediction.

Slope lengths can be reduced using terraces or diversions, or may be modified when crop residue levels are maintained in excess of 50% such as when crop sequences are completely no-tilled.

Stable Outlets
Concentrated flows from contouring shall be delivered to grassed waterways, field borders and other stable outlets or areas.

Headlands/End Rows
On fields where row crops and tillage are part of the cropping system, establish field borders, permanent sod, or use no-till planting on headlands where maximum row grade is exceeded and slope length is greater than 150 feet.

CONSIDERATIONS

Prior to layout, consider obstruction removal and changes in field boundaries to improve the effectiveness of the practice and the ease of farming, especially to minimize short rows.

The width of correction areas, and the distance between baselines, should generally be adjusted for sprayer or planting operation widths.

Grassed waterways, water and sediment control basins, underground outlets, or other stable areas should be used to handle concentrated flows.

Factors that impact the effectiveness of contour farming include: ridge height, row grade, cover and roughness. Changes in producer management techniques may be made to make this practice more effective.

Contour farming is frequently used in combination with conservation tillage, residue management and other practices to meet the goals of the conservation management system.

Perform harvesting operations the same direction as planting to avoid creating off grade wheel tracks which could ultimately concentrate sheet flow and cause erosion.

If using ridge-till avoid crossing over ridged rows in correction areas. Consider sod turn strips, or no-tilling, if correction areas are unavoidable.

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice shall be prepared according to the Criteria, Considerations, and Operation and Maintenance described in this standard.

Specifications shall be recorded using: narrative statements in the conservation plan, as a part of RUSLE documentation, approved specification sheets, job sheets or other acceptable documentation.

OPERATION AND MAINTENANCE

Perform tillage and planting operations parallel to contour baselines or parallel to terraces, diversions, or contour buffer strip boundaries, as appropriate when these practices are used.

On fields where row crops and tillage are a part of the rotation, establish field borders or permanent sod where end row grades exceed row grade criteria.

Where terraces, diversions, or contour buffer strips are not present, establish some type of marker or mark to retain the location of the base line(s) used to establish the system.

Baseline(s) will be needed as a starting point for planting and/or tillage operations.
The marker/mark may be field or crop boundaries, an extra space left between rows (similar to that done to retain strip boundaries), or other readily identifiable, continuous, lasting mark or marker such as a stake or post.

All tillage and planting operations shall be parallel to the established marker(s). If a marker is lost, re-establish a contour baseline within the applicable criteria set forth by this standard prior to seedbed preparation for the next crop.

Farming operations should begin on the contour baselines and proceed both up and down the slope in a parallel pattern. The center portion between the baselines (including) point rows will generally be planted from the outside toward the center. If one side is closer to the contour than the other side, then it is desirable to plant all of the point rows from this side whenever harvesting operations can be conducted in this manner for row crops. This would generally be the case when planting between the last contour boundary toward the top or bottom of the field between the field boundary and the baseline.

Where contour row curvature becomes too sharp to keep machinery aligned with rows during field operations, establish sod turn strips as needed.

REFERENCES

1. Soil Loss Prediction, Pennsylvania Technical Guide, RUSLE (Revised Universal Soil Loss Equation), USDA-NRCS, Harrisburg, Pa.

2. Predicting Soil Erosion by Water, A Guide to Conservation Planning with the Revised Universal Soil Loss Equation (RUSLE). 1997 USDA Agricultural Research Service, Agricultural Handbook No. 703

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