NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

ROW ARRANGEMENT

(acre)
CODE 557

DEFINITION

Establishing a system of crop rows on planned grades and lengths primarily for erosion control and water management.

PURPOSE

To establish crop rows in direction, grade, and length so as to provide adequate drainage and erosion control and permit optimum use of rainfall and irrigation water.

CONDITIONS WHERE PRACTICE APPLIES

Proper row arrangement is applicable:

1. As part of a surface drainage system for a field where the rows are planned to carry excess water to surface drains.
2. To facilitate optimum use of water in graded furrow irrigation systems.
3. In dryland areas where it is necessary to control the grade of rows to use available rainfall more fully.
4. On sloping land, with or without other conservation practices, where control of the length, grade, and direction of rows can help reduce soil erosion.

CRITERIA

General. Row arrangement shall facilitate the use of applicable field machinery in the field.

Surface drainage. As part of a surface drainage system, row arrangement shall:

1. Conform with the drainage part of the technical guide for the area regarding grade and length.

2. Facilitate flow of excess water from the field into surface ditches.

Furrow irrigation. As part of a furrow irrigation system, row arrangement shall:

1. Conform with the irrigation guide for the areas regarding grade and length.

2. Facilitate irrigation water management in the field.

Erosion control and water conservation. As part of an erosion control and/or water conservation system for a field, row arrangement shall:

1. Conform with the technical guide for the area for the particular practice for which the row arrangement is a facilitating measure.

2. Conform with the grade and length requirements for terraced if the arrangement is used without and other engineering practice

CONSIDERATIONS

Water Quantity

1. Effects upon components of the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.

2. Variability of effects caused by seasonal or climatic changes.

3. Effects of vegetation on soil moisture.

4. Effects of snowcatch and melt on water budget components.

5. The potential for a change in plant growth and transpiration because of changes in the volume of soil water.

6. Effects on downstream flows or aquifers that would affect other water uses or users.

7. Effects on the volume of downstream flow to prohibit undesirable environmental, social or economic effects.

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

8. The effect on the water table of the field to ensure that it will provide a suitable rooting depth for anticipated land uses.

9. The potential use for water management to conserve water.

Water Quality

1. Effects of both growing and decaying vegetation or nutrient balance in the root zone.

2. Effects of nutrients and pesticides on surface and ground water quality.

3. Effects on the visual quality of downstream water resources.

4. Effects on the movement of dissolved substances below the root zone and toward ground water.

5. Effects of water levels on solid nutrient processes such as plant nutrient use.

6. Effects of soil and water level control on the salinity of soils, soil water or downstream water.

7. Effects on wetlands and water-related wildlife habitats.

8. Effects on the field nutrient budget as related to removal, residence, and accumulation of nutrients.

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PLANS AND SPECIFICATIONS

Plans and specifications for row arrangements shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

OPERATION AND MAINTENANCE

An operation and maintenance plan must be prepared for use by the owner or others responsible for operating the system. The plan should provide specific instructions for operating and maintaining the system to insure that it functions properly.