

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

RESIDUE MANAGEMENT, NO-TILL AND STRIP TILL
(ACRE)
CODE 329A

DEFINITION

Managing the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops in narrow slots or tilled strips in previously untilled soil and residue.

PURPOSES

This practice may be applied as part of a conservation management system to support one or more of the following:

- * Reduce sheet and rill erosion.
- * Reduce wind erosion.
- * Maintain or improve soil organic matter content.
- * Conserve soil moisture.
- * Provide habitat for wildlife.
- * Improve soil physical properties.
- * Improve soil biological properties.
- * Improve soil chemical properties.
- * Maintain or improve water quality.
- * Improve nutrient utilization efficiency.
- * Reduce carbon emissions.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all cropland and other land where crops are grown.

This standard includes tillage and planting methods commonly referred to as no till, zero till, slot plant, row till, zone till, or strip till.

CRITERIA

General Criteria Applicable to All Purposes Named Above

Loose residues to be retained on the field shall be uniformly distributed on the soil surface. Where combines or similar machines are used for harvesting, they shall be equipped with spreaders capable of distributing residue over at least 80 percent of the working width of the header.

Residues shall not be burned or disturbed by full width tillage operations except as follows:

Planters or drills shall be equipped to plant directly through untilled residue or in a tilled seedbed prepared in a narrow strip along each row by planter attachments such as rotary tillers, sweeps, multiple coulters, or row cleaning devices.

If row cultivation or spot treatment for weeds, leveling ruts, or similar operations become necessary, tillage shall be limited to operations which minimize burial of surface residue.

Additional Criteria to Reduce Wind, Sheet and Rill Erosion

The amount of residue at planting should provide the maximum ground cover that can be managed for satisfactory crop establishment. In no case will the ground cover be less than 30% immediately after planting using the line transect method. Partial removal of residue by means such as baling or grazing shall be limited to retain the amount needed.

Seedbed preparation, planting, and fertilizer placement shall disturb no more than one fourth of the row width. The row area formed by the planting operation shall be level with or slightly above the adjacent row middles unless the rows are planted on the contour.

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

Additional Criteria to Maintain or Improve Soil Organic matter Content

The amount of residue at planting will provide a minimum of 80% ground cover.

Additional Criteria to Conserve Soil Moisture

A minimum quantity of 50 percent residue cover shall be maintained throughout the year. Residue shall be evenly distributed and maintained on the soil surface. Partial removal of residue by means such as baling or grazing shall be limited to retain the amount needed.

Additional Criteria to Habitat for Wildlife

Residue requirements shall be determined using an approved habitat evaluation procedure for the desired wildlife species. For example, protective cover will be a limiting factor for quail. Other species, like wild turkey and white tail deer are limited by the amount of food available. Residues shall not be removed unless it is determined by the habitat evaluation procedure that removal would not adversely affect habitat values.

CONSIDERATIONS

No till or strip till may be practiced continuously throughout the crop sequence, or may be managed as part of a system which includes other tillage and planting methods.

Production of adequate amounts of crop residues necessary for the proper functioning of this practice can be enhanced by selection of high residue producing crops and crop varieties in the rotation, use of cover crops, and adjustment of plant populations and row spacings.

Maintaining a continuous no till system will maximize soil organic matter content and improve overall soil quality. Also, when no till is practiced continuously, soil reconsolidation provides additional resistance to sheet and rill erosion.

Refer to practice Code 329-LT, Long-Term No-Till for more details.

The value of residues for wildlife habitat can be enhanced by leaving rows of unharvested crop

standing in appropriate locations for use by desired wildlife species. For example, quail and rabbits will only utilize food adjacent to heavy cover.

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and Operation and Maintenance described in this standard. Specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

No operation and maintenance requirements, national in scope, have been identified for this practice.