

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD AND SPECIFICATIONS

RESIDUE AND TILLAGE MANAGEMENT
SEASONAL
(Acre)

CODE 344

DEFINITION

Managing the amount, orientation, and distribution of crop and other plant residues on the soil surface during a specified period of the year while planting crops in a clean-tilled seedbed or when growing biennial or perennial seed crops.

PURPOSES

This practice may be applied to support one or more of the following purposes:

- Reduce sheet and rill erosion.
- Reduce wind erosion.
- Reduce off-site transport of sediment, nutrients, and pesticides.
- Increase plant-available moisture.
- Provide food and escape cover for wildlife.

CONDITIONS WHERE PRACTICE APPLIES

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

Seasonal residue management includes managing residues of annual crops from harvest until the residue is:

- buried by tillage for seedbed preparation
- removed by grazing, or
- mechanically removed.

It also includes the management of residues from biennial or perennial seed crops from the time of

seed harvest until regrowth begins the next season.

CRITERIA

General Criteria Applicable to All Purposes

Residue shall be uniformly distributed over the entire field.

Residues shall not be burned unless:

- 1) burning is an accepted practice in an integrated pest management (IPM) plan developed and recommended by the University of Missouri, and
- 2) the soil conditioning index for the planned rotation shows a positive trend.

Additional Criteria to Reduce Sheet and Rill Erosion or Wind Erosion

The amount and orientation of residue needed to reduce erosion within the soil loss tolerance (T) or any other planned soil loss objective shall be determined using current approved erosion prediction technology.

Partial removal of residue by means such as baling, grazing, or other harvest methods shall be limited to retain the amount of residue needed to meet the erosion reduction objective. The remaining residue shall be maintained on the surface through periods when erosion has the potential to occur or until planting. Calculations shall account for the effects of other practices used in the management system.

Any tillage that occurs during the management period shall be limited to methods that maintain the planned residue cover conditions.

Additional Criteria to Reduce Off-Site Transport of Sediment, Nutrients, or Pesticides

The amount and orientation of residue required to reduce off-site movement of agricultural chemical during the specified period shall be determined using the appropriate field assessment tools such as Windows Pesticide Screening Tool (WIN-PST), Phosphorus Index, Leaching Index, erosion prediction models, or other recognized tools for the site conditions.

Additional Criteria to Increase Plant-Available Moisture

A minimum of 2000 pounds per acre or 60 percent surface residue cover shall be maintained until immediately prior to planting. Residue shall be evenly distributed and maintained on the surface. Removal of residue by any means such as baling or grazing shall be limited to retain the minimum amount needed to conserve soil moisture.

Any tillage that occurs from harvest to tillage that destroys the surface cover immediately prior to planting shall be limited to undercutting implements such as blades, sweeps, or similar implements that minimize residue flattening and burial.

Additional Criteria to Provide Food and Escape Cover for Wildlife

Residue height and amount will be managed based on the food and cover required to meet habitat requirements for the targeted wildlife species or population. Residues shall not be removed unless it is determined by a habitat evaluation procedure, Wildlife Habitat Appraisal Guide, that residue removal would not adversely affect habitat values.

Tillage shall be delayed until the end of the management period to maintain the food and cover value of the residue.

CONSIDERATIONS

Excess removal of crop residues by baling or grazing often produces negative impacts on resources. These activities should not be

performed without full evaluation of impacts on soil, water, animal, plant, and air resources.

Production of adequate amounts of crop residues necessary for the proper functioning of this practice can be enhanced by the selection of high residue crops and crop varieties, use of cover crops, and adjustments to plant populations and row spacing.

When planting on a clean seedbed, exposure to erosion can be minimized and available moisture for germination can be improved by completing tillage and planting in a single operation. If a single tillage and planting operation is not feasible, primary tillage and planting should be completed within three (3) days.

The effectiveness of stubble to trap snow or reduce plant damage from freezing or desiccation increases with stubble height. A minimum stubble height of **10 inches** is desired. Patterns of variable stubble heights may be created to further increase snow storage.

Leaving rows of unharvested crop standing at intervals across the field can enhance the value of residues for wildlife habitat. **Unharvested crop rows have the greatest value when they are adjacent to other cover types such as grassy or woody areas.**

PLANS AND SPECIFICATIONS

Site specifications for establishment and maintenance 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.

Site specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

No specific operation and maintenance requirements have been identified for this practice.