NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

RESIDUE MANAGEMENT

SEASONAL

(Ac.)

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 annual crops on a clean-tilled seedbed, or when growing biennial or perennial seed crops.

PURPOSES

1. Reduce sheet and rill erosion.
2. Reduce soil erosion from wind and associated airborne particulate matter.
3. Improve Soil Condition
4. Reduce off-site transport of sediment, nutrients or pesticides.
5. Provide food and escape cover for wildlife.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all cropland that uses full-width clean tillage to establish crops.

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

All residues shall be uniformly distributed over the entire field.

Combines or similar harvesting machines shall be equipped with spreaders capable of redistributing residues over at least 80 percent of the working width of the header.

Residues shall not be burned.

Tillage operations during the residue management period shall be limited to undercutting tools such as blades or wide sweeps that minimize residue flattening or burial.

Additional Criteria to Reduce Sheet and Rill Erosion and Erosion from Wind

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 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, whichever occurs first. Erosion prediction estimates shall account for the effects of other practices in the conservation management system.

Additional Criteria to Improve Soil Condition

The quantity and orientation of residue needed to achieve a positive soil condition index value shall be determined using current approved erosion prediction technology and the current approved Soil Condition Index.

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

The quantity and orientation of residue required to reduce off-site movement of agricultural chemicals and sediment during the specified period shall be determined using the appropriate assessment tool(s) [Windows Pesticide Screening Tool (WIN-PST), Phosphorus Index (PI), Leaching Index (LI), erosion prediction technologies, or other recognized tools] for the site conditions.

Additional Criteria to Provide Food and Escape Cover for Wildlife

The amount of residue, height of the stubble, and length of the management period necessary for meeting habitat requirements for the target species or wildlife population shall be determined using an approved habitat evaluation procedure.

CONSIDERATIONS

Removal of plant residue by baling or grazing may have a negative impact on resources. These activities should not be performed without full evaluation of impacts on other resources.

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

When planting into a clean tilled seedbed, completing tillage and planting in a single operation, or by performing primary tillage no more than three days before planting can minimize exposure to erosion; and in limited moisture areas, can conserve moisture for germination.

Leaving one or two rows of unharvested crop standing at intervals across the field can enhance the value of residue for wildlife habitat. Unharvested crop rows have the greatest value when they are adjacent to other cover types, such as grassy or brushy areas or woodland.

In areas that are in non-attainment for PM10, and for other areas with particular sensitivities to PM from dust, residue cover is especially important and should ensure that off-site PM levels are below critical thresholds, including maintenance of proper visibility.

Consider the relationship between crop residues and soil fungi or organisms. Adequate residue will provide food and habitat to beneficial soil flora and fauna, which positively impacts: soil aggregate stability, moisture retention, infiltration, fertility, and breakdown of inorganic compounds.

No till planting annual spring small grains appropriate for the climatic zone in the fall, that winter-kill, will provide additional cover and/or feed for wildlife, grazing animals, soil erosion protection, and water retention without adding additional weed control measures.

Follow NRCS policy on cultural resources.

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice shall be prepared for each field or treatment unit according to the Criteria described in this standard.

Specifications shall be recorded using approved job sheets, narrative statements in the conservation plan, or other acceptable methods.

OPERATION AND MAINTENANCE

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

REFERENCES

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