Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

CONSERVATION HARVEST MANAGEMENT

CODE 809

(ac)

DEFINITION

Managing the amount, orientation, and distribution of crop and other plant residues on the soil surface during a specified period of the year.

PURPOSE

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

- Increase naturally available moisture use
- Enhance plant productivity and health
- Reduce sheet and rill erosion
- Reduce wind erosion
- Increase soil organic matter

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all cropland.

CRITERIA

General Criteria Applicable to All Purposes

Uniformly distribute residue over the entire field.

Combines or similar harvesting machines shall be equipped with and use spreaders capable of redistributing residues over at least 80 percent of the working width of the header; or maintain as much of the original residue as uncut as possible if residues can be left in place during the harvesting process (e.g. stripper headers).

Do not burn residues.

Leave standing or distributed residue intact, onsite, and undisturbed during the critical wind or water erosion period to the maximum extent possible within the chosen crop rotation and tillage.

Additional Criteria to Improve Naturally Available Moisture Use and Maximize Precipitation Retention

Maintain a minimum of 60 percent residue cover on the soil surface during the critical period of moisture capture or period of high evapotranspiration, as defined in the IR.

Trapping Snow

Maintain crop stubble height during the time significant snowfall is expected to occur as follows:

• 10 inches for crops with a row spacing of less than 15 inches;

• 15 inches for crops with a row spacing of 15 inches or greater.

Row Spacing (inches)	Minimum Stubble Height (inches)
<15	10
≥ 15	15

Additional Criteria to Enhance Plant Productivity and Health

Leave standing residue in place through the seeding and establishment of the subsequent crop to provide increased soil moisture retention and protection against plant damage from wind erosion.

Maintain a minimum of 60 percent residue cover on the soil surface throughout the year.

Additional Criteria to Reduce Sheet and Rill and Wind Erosion

Maintain above minimum percent surface residue through periods of greatest potential soil erosion, as defined in the IR.

Avoid partial removal of residue by means such as baling, grazing, or other harvest methods to retain the amount needed to meet the erosion reduction objective.

Determine the amount and orientation of residue needed and reduce erosion within the soil loss tolerance (T) or any other soil loss objective by using the current approved NRCS erosion prediction technology. Calculate the effects of other practices in the management system.

Additional Criteria to Enhance Soil Organic Matter

Ensure that an evaluation of the cropping system using the current approved soil conditioning index (SCI) and soil organic matter subfactor are trending positive.

CONSIDERATIONS

Tall, vertical residue improves naturally available moisture by increasing snow capture over the winter and reducing soil moisture evaporation during subsequent crop stand establishment. Where applicable coordinate this practice with NRCS conservation practice standard, Residue and Tillage Management, No Till (329) or Residue and Tillage Management, Reduced Till (345).

Adjustment of the ground speed or mechanical threshing settings in cropland is necessary to ensure a minimal amount of threshed grain is lost during the harvesting process, especially when switching between crop types.

Leaving vertical stubble in cropland will reduce the “hair pinning” of residue and poor stand establishment sometimes associated with no-till seeding into conventionally cut, horizontal residue.

Planting into vertical residue is best done with single- or double-disc openers. Hoe type drills often become plugged in this system.

When seeding into vertical residue, if the spacing is 10-inches or greater the subsequent crop can be drilled between the previous rows of standing stubble using GPS technology.

In cropland, harvesting which leaves vertical residue should put less plant material through the mechanical harvester. This may result in less wear on the machinery and may allow for faster machine operation and reduced fuel costs per acre.

A fallow year is not recommended after a harvest operation which leaves vertical residue in cropland. Over time, vertical residue can decay at the point of soil connection and become susceptible to wind

erosion. A crop seeded in the year immediately following will provide protection against wind erosion through vegetative growth and the maintenance of continual residue production.

Wheat stem sawfly (WSS) and WSS parasitoid populations may be altered due to additional habitat provided by tall residue, consider monitoring and adjusting pest management as needed.

PLANS AND SPECIFICATIONS

Develop plans and specifications for each field or treatment unit according to the criteria section requirements above, and operation and maintenance section requirements below. Specifications must describe the requirements to apply this practice to achieve the intended purpose(s). Record the following specification components in an approved Conservation Harvest Management (Code 809) implementation requirements document.

- Include a description of the practice purpose and resource concerns being addressed
- Document the planned harvester header width and crop residue spreading width behind the harvester.
- Document baseline conditions and planned conditions using the current NRCS erosion models. This documentation needs to include the following:
  - Tillage operation sequence and approximate dates
  - % surface cover after each tillage/field operation
  - Soil Conditioning Index (SCI)
  - Organic matter subfactor
- List the critial erosion period(s) and minimum cover needed during that period to achieve the intended purpose.
- List the row spacing for all crops grown in the rotation.
- Document the anticipated minimum crop height during the winter snow fall period. - If the intended purpose is to trap snow.
- Provide guidance for post-practice evaluation methods that meet the stated purpose and resource concerns addressed.

OPERATION AND MAINTENANCE

Maintenance (O&M) plan will include consideration for adaptive management and include the post-treatment assessment procedures as noted below:

- Evaluate/measure the crop residue amount, cover, and orientation after each crop to ensure the planned amounts and orientation are being achieved. Adjust management as needed to either plan a new residue amount and orientation or adjust the planting and/or harvesting equipment.
- Record estimated soil moisture using the “feel and appearance method”, or other approved method, in the spring following the vertical harvest.

REFERENCES

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