

RESIDUE and TILLAGE MANAGEMENT, NO-TILL and STRIP TILL

N.C. Practice Job Sheet 329

Prepared for: _____

Prepared by: _____

Farm: _____ Tract: _____ Date: _____



Residue from the last crop serves as ground cover for the current crop planted by the no-till method.

DEFINITION

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

PURPOSE

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

- * Reduce sheet, rill, and wind erosion.
- * Maintain or increase soil organic matter content.
- * Conserve soil moisture.
- * Provide habitat for wildlife.
- * Improve soil quality.
- * Improve air quality.
- * Maintain or improve water quality.
- * Improve nutrient use efficiency.
- * Reduce carbon emissions.
- * Store atmospheric carbon in the soil

CRITERIA

Residues must 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.

Planters or drills must plant directly through untilled residue or in a tilled seedbed prepared in a narrow strip.

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. Higher levels of ground cover may be needed for added soil improvement benefits. Partial removal of residue by means such as baling or grazing shall be limited to retain the amount needed.



A ground cover of 80% or more is needed to gain the greatest range of benefits associated with increased organic matter content.

Planting operations must not disturb more than one fourth of the row width. The row area formed by planting shall be level with or slightly above the adjacent row middles unless the rows are planted on the contour.



To gain moisture retention benefits, a minimum of 50% ground cover is needed, evenly distributed over the surface.

SPECIFICATIONS

Purpose of the Practice:

Minimum Ground Cover (%) Required (after spring planting):

Source of the Ground Cover: (cover crop, previous crop residue)

Additional Specifications:



Research has proven the benefits of no-till to quail populations.

OPERATION AND MAINTENANCE

Soil test to ____ inches at least every ____ years.

Partial removal of residue by means such as baling or grazing, if done at all, must be limited to retain the amount needed to get the desired benefit.

Care must be taken to replenish residues as they are consumed by the soil's biological community. Cover crops may be needed to add diversity.

Measure ground cover after spring planting. The line transect method is the best way to determine the amount of surface cover provided. This method is described on the next page.

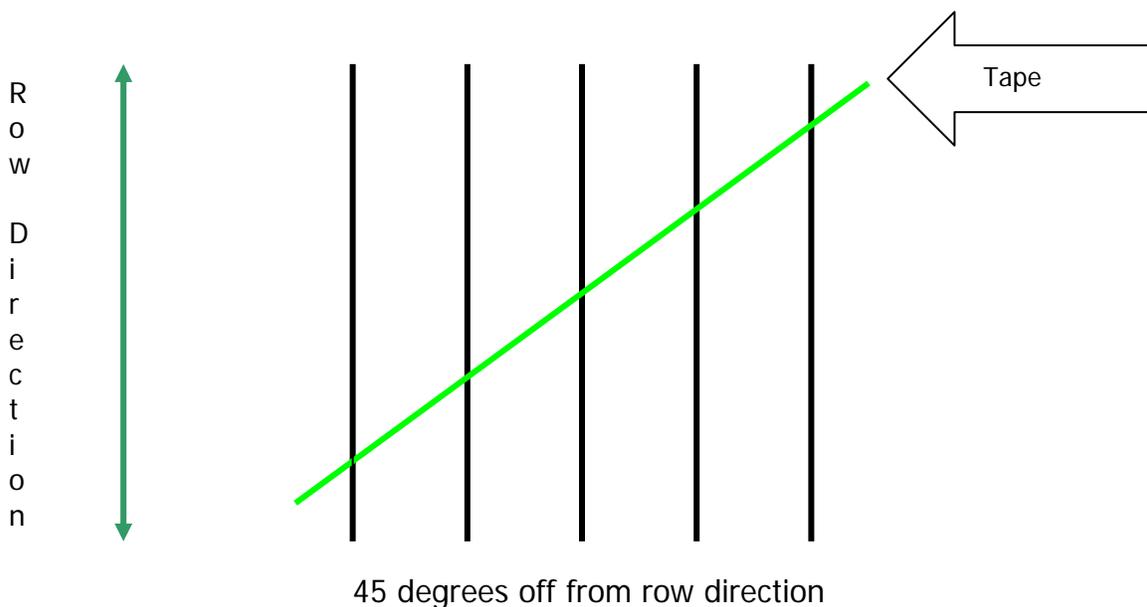
NRCS will provide assistance developing remedial measures to address surface rutting if needed.

Additional Operation and Maintenance

ESTIMATING PERCENT GROUND COVER USING THE LINE TRANSECT METHOD

The line transect method has proven most effective in estimating the percent ground cover by plant residue. The following is the recommended procedure for using the line transect method.

- ❖ Use a commercially available 50 or 100 foot long tape or chain which has one-foot intervals clearly marked.
- ❖ Select an area that is representative of the field as a whole and stretch the line out across the rows. Lay the tape at a 45 degree angle off the row direction.



- ❖ Walk along the line, stopping at each one-foot mark, using the same edge of the line for all sightings. Looking straight down, determine whether a piece of residue is **directly beneath** the mark. Count the number of marks under which is seen a piece of residue large enough to intercept a raindrop. A rule of thumb is to count only residue which is 3/32 inch wide. Do not move the line while counting.
- ❖ When using a line with 100 marks, the per cent residue cover is equal to the number of marks under which a piece of residue is counted. Double the number for a 50-foot line.



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