



## Residue and Tillage Management

### Ridge Till

Alabama Job Sheet No. AL346



#### DEFINITION

Residue and tillage management--Ridge-Till is managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year round while growing crops on pre-formed ridges alternated with furrows protected by crop residues. At least 30 percent of the soil surface must be covered with crop residues immediately following planting.

#### PURPOSE

This practice is applied as a 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 quality
- Reduce energy use
- Modify cool wet site conditions
- Provide food and escape cover for wildlife

#### Conservation Management System

Residue and tillage management systems such as ridge-till are established as a part of a conservation management system consisting of structural and management practices to maintain the productivity and condition of the soil.

Crop rotation, cover crop, pest management, nutrient management, various structures, and buffer practices are used in resource management planning to address the natural resource concerns identified during the planning process. This practice applies to all cropland and other land where crops are grown.

#### Specifications

- Ridge-till is sometimes referred to as ridge planting. After planting, residue shall be maintained in the furrows until the ridges are rebuilt by cultivation. Ridges shall be rebuilt to their original height and shape during the last row cultivation. Weed control is accomplished with herbicides and cultivation.
- Residue to be retained on the field shall be uniformly distributed. Combines or other harvesting machines shall be equipped with spreaders capable of distributing residue over at least 80 percent of the combine header width.
- Cultivation and planting equipment designed to operate on ridges shall be used, such as cultivator equipped with ridging attachments and planters equipped with ridge planting attachments like row cleaning devices and guidance systems.
- Residue shall not be burned.
- Secondary removal of crop residue by baling or grazing shall be limited to retain the amount of residue needed to achieve the intended purpose(s).
- A minimum of 30 percent of the soil surface shall be covered by plant residue immediately following the planting of the crop. (Additional crop residue is often needed to reduce soil erosion levels to the soil loss tolerance ("T") value, increase soil organic matter content, improve water quality, and to meet other resource objectives.
- Weed control techniques must be carefully planned yet sufficiently flexible to complement the system. Burndown herbicides applied at least two weeks prior to planting will kill the cover crop, weeds, and other vegetation that may compete with the crop and deplete the soil moisture. All pesticides used will be labeled for their intended use.

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### Planning for Intended Purpose

#### All Purposes

Ridge height shall be maintained throughout the harvest and winter seasons by controlling equipment or livestock traffic.

Ridge-till may be practiced continuously throughout some crop sequences or may be managed as a part of a residue management system which includes other tillage and planting methods such as mulch-till or no-till. In mixed systems, ridges must be periodically re-established.

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, cover crops, and adjustment of plant populations and row spacing.

Consider the need for other practices, in conjunction with ridge till, during the planning process. For example, consider the need for grassed waterways and/or terraces where erosion by concentrated flow is a problem.

Soil compaction may be reduced by controlled traffic, where wheel traffic from all operations is limited to the area between designated rows or traffic areas.

Burndown herbicides should be applied at least two weeks prior to planting of the next crop to reduce competition from weeds and other vegetation for soil moisture and nutrients.

Crop rotation of all crops (including cover crops) is needed to aid in pest control. Follow proper soil testing, nutrient management, Integrated Crop Management (ICM), and Integrated Pest Management (IPM) techniques.

#### Reduce Sheet and Rill Erosion

The amount of residue needed and the amount of surface soil disturbance allowed to reduce erosion to any planned soil loss objective shall be determined using the current approved water erosion prediction technology.

In most cases at least 50 percent residue cover provides protection against sheet and rill erosion to acceptable levels. Contact your NRCS technician for help in estimating the percent cover at planting.

#### Reduce Wind Erosion or Reduce Soil Particulate Emissions

Maintaining residue cover during critical periods of growing season can reduce crop damage caused by wind erosion. Partial removal of residue by means such as baling or grazing shall be limited to retain the amount needed to reduce wind erosion damages.

#### Maintain or Improve Soil Quality

The amount of residue needed and the amount of surface soil disturbance allowed to achieve the desired soil condition shall be determined using the current approved soil conditioning index procedure and result in a positive trend. At least 50 percent residue cover is needed to sustain soil organic matter. Contact your NRCS technician for help in estimating the level of residue at planting.

#### Modify Cool Wet Site Conditions

Ridge height prior to planting shall be at least six inches. After planting, the top of the ridge shall be maintained at least three inches higher than the furrow between the ridges.

#### Provide Food and Escape Cover for Wildlife

Residue height, amount, and time period shall be determined using an approved habitat evaluation procedure. Residues shall not be removed unless determined to not be detrimental to habitat values. The value of residues for wildlife habitat can be enhanced by leaving rows of unharvested crop standing at intervals across the field.

### REFERENCES

NRCS AL Conservation Practice Standard:

[Residue and Tillage Management, Ridge Till, Code 346](#)

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