



Reduced Tillage for Improved Soil Health

Alabama Practice Job Sheet AL345



Prepared for: _____

Prepared by: _____

Farm: _____ Tract Number: _____ Date: _____

DEFINITION:

Reduced tillage (also known as conservation tillage or mulch-tilling) is managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting the soil-disturbing activities used to grow.

PURPOSES: (check all applicable):

- Reduce sheet, and rill erosion.
- Maintain or increase soil organic matter content.
- Reduce energy use.
- Increase plant-available moisture.

By reducing tillage to only the tillage needed to establish the crop, reduce subsurface compaction and harvest the crop (where applicable) will result in protection of the soil and increased organic matter accumulation. Conservation tillage should be planned as a part of a system that includes other practices including the following; conservation crop rotation (328), cover crop (340), nutrient management (590) and other supporting practices to promote soil health. Conservation tillage is fundamental in improving the soil's physical, biological, and chemical properties, limit soil erosion, limit runoff, conserve moisture, etc.

CONDITIONS WHERE PRACTICE APPLIES:

This practice applies to all annually planted cropland.

SPECIFICATIONS:

The information provided in this job sheet and attachments (conservation plan, maps, and other documents) will meet the requirements of this practice. The following provides the basic requirements of this standard:

- All residue should be uniformly distributed over the entire field except for removing residue from the row area just prior to or during planting.
- Often additional crop residue will be needed to protect the soil surface and provide adequate levels of carbon returning to the soil to improve soil health. Cover crops may be required following low residue crops to achieve the needed residue.
- Burning of residue will leave the soil unprotected and decrease the carbon returned to the soil and is not permitted.
- Immediately following the planting a minimum of 30 percent of the soil surface shall be covered by plant residue. Additional crop residue may be required to meet the site specific conservation purposes.

- o Site specific evaluation of the cropping system, properties of the site (soil, topography, climate) and tillage equipment available will be used to determine the level of tillage needed to meet the conservation goals and are listed in Table1.

statement in the conservation plan, attached maps, and other applicable documents.

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice shall be prepared for each field or treatment unit using the approved practice implementation requirements and recorded in Table 1, a narrative

OPERATION AND MAINTENANCE

Evaluate/measure the crop residues cover and orientation for each crop to ensure the planned amounts and orientation are being achieved. Adjust management as needed to either plan a new residue amount or orientation; or adjust the planting, tillage, or harvesting equipment.

Table 1. Site specific implementation requirements for each field or treatment unit that meets the conservation goals that are being treated with this practice.

	Track/Field	Crop/year(s)	Yield goal	Soil Loss ^{1/}	Soil Conditioning Index (SCI) ^{1/}	Soil Tillage Intensity Rating (STIR) ^{1/}
Existing Tillage System						
Planned Tillage System						
Below is a brief description of the existing and planned tillage system (type and number of tillage operations).						
Existing Tillage System						
Planned Tillage System						

^{1/} Listed calculated soil loss and other related soil and tillage parameters may be omitted from this table if reference is given to the attached RUSLE 2 output.

Practice Design Certification (To be completed after job sheet is complete and before practice installation)

The site specific requirements for the installation, operation, and maintenance of the practice on the client's treatment unit, as recorded in this job sheet, attached programmatic requirement (attached if applicable) and other attached documents, have been prepared in accordance with the 345 Residue and Tillage Management; Mulch Till Standard:

Planner: _____ **Date:** _____
 (Signature)

Landowner/Cooperator: _____ **Date:** _____
 (Signature)

EQIP Practice Guidelines

345 Residue and Tillage Management, Mulch Till (Reduced Tillage)

Participant Name: _____

Date: _____

Contract Number: _____

In addition to the general specifications there are additional limitations if there are EQIP payments associated with the practice. Within EQIP the practice is based on a reduction of the Soil Tillage Intensity Rating (STIR). The STIR is a numerical value that gives conservation planners an indication of the level of soil disruption. This value is based on all tillage operation and there operational speed, tillage type, depth of tillage and percent of the soil surface disturbed. Lower number indicates low levels of soil disruption.

When managing to improve soil health reducing the level of soil disruption to a minimum will improve soil function. Surface tillage damages the structure of the soil which will lead to decreased infiltration and increased erosion. Additionally, tillage will decrease the size of crop residue and incorporate it into the soil, this results in faster decomposition of crop residue and soil organic matter.

EQIP eligibility Conservation Tillage (mulch till):

- Acres eligible for the incentive payments are acres that have not adopted a conservation tillage system on the acres. The existing and planned tillage systems must meet the limitations listed below.

EQIP limitation Conservation Tillage (mulch till):

- Conservation tillage must be managed to meet the requirements of the Residue and Tillage Management, Mulch Till (345), the site specific information as documented in AI 345-2 (table 1), the conservation plan and limitations as listed within this document.
- Planned tillage system must have a STIR of 45 or less and the planned system must be a decrease

in the STIR by at least 30 compared to the current tillage system.

- When comparing STIR values on existing or planned tillage systems considered all tillage operations for the crop year. For example if evaluating the STIR in a year with double cropping (wheat/soybeans) or that includes a cover crop (rye cc/peanuts) consider the tillage operations for both crops.
- If the previous crop is a low residue crop (cotton, peanuts, soybeans ...) acres must be planted to a cover crop according to the cover crop standard (340).
- All tillage operations must be done 35 days or less then the planned planting date.

Conservation tillage planning guidance:

To determine general eligibility and alternatives to offer to the land owner use the information below as general guidance. Before the conservation plan is finalized an evaluation using RUSLE 2 with the current database should be performed to insure the planned reductions in STIR meet all of the requirements. Site specific factors will result in slightly different outcomes in reducing STIR values; use information below as general guidance.

General reductions in STIR expected by eliminating listed implements.

Implements	STIR reduction range
Moldboard Plow	65
Chisel Plow	45
Heavy Disk	33
Field cultivator	26
Finish Disk	20
Vertical Tillage (turbo-till)	15
Sub-soiling	5-12

Alabama Practice Certification:

345: Residue and Tillage Management, Mulch Till

Landowner/Cooperator: _____

Field Office: _____

Farm/Tract No.: _____

A visual assessment of the area is consistent with the implementation of this practice and the producer certifies that the tillage performed was as described in AI 345-2 (table 1), the conservation plan and/or all limitations associated with program payments.

Yes___ No___

Notes:

This practice has been installed according to the site specific installation requirements and meets standards and specifications:

NRCS Certification: _____
(Signature)

Date: _____