

Producer _____

County _____

Date _____

Farm # _____

Tract # _____

Assisted By _____



Definition

Residue tillage, or mulch till, is the management of the amount, orientation, and distribution of crop and other plant residue on the soil surface year-round, while growing crops. The entire field surface may be tilled prior to planting when tillage operations include chisel plowing, field cultivation, tandem disking or vertical tillage. The practice also includes ridge tillage, with fewer tillage operations, and strip-till, with no more than 1/3 of the row width tilled. Strip-till is included in this standard when it does not meet the stricter criteria of No-till Residue Management (Code 329).

Purposes

This practice is applied as part of a conservation management system to support one or more of the following results. This system may have some or all of the practices of a no-till system, but not cannot meet the stricter requirement of a lower STIR value of 20 required in the no-till residue management. The STIR value is a measure of soil disturbance obtained from RUSLE2 (or

the current NRCS soil erosion software). The STIR value between the interval between the harvest of the previous crop and the harvest or termination of the current cash crop cannot be greater than 80 when implementing reduced tillage. Identify the applicable purposes and provide the required documentation in Table 1 below.

Strip-till tillage management, a no-till cover crop (Code 340) and deep tillage (Code 324) are frequently used together in a conservation tillage crop production system. Deep tillage is frequently needed to break up hardpans, especially in sandy Coastal Plain soils.

A conservation tillage system should include the first three purposes. Select the purpose and provide the additional documentation for each one in the appropriate table in the Georgia NRCS Cover Crop (Code 340) jobsheet when this production system is implemented.

Controlling weeds is should also be a goal of implementing conservation tillage. Also, document weed control in the jobsheet of the cover crop standard because it is not a purpose of implementing residue and tillage management in either standard.

___ Reduce soil erosion (sheet, rill and wind) to the tolerable level, or other soil loss goal. Other soil loss goals may apply, such as when planning on highly erodible land (Table 2). Also, determine the amount of surface residue, time of year required and amount of soil disturbance allowed to reduce erosion to the desired level.

___ Maintain or increase soil quality and organic matter with a Soil Conditioning Index (SCI) value of zero or greater (Table 3).

___ Increase the use and storage of water available to plants. Maintain a minimum 60% surface residue cover throughout the year on at least 50% of the field (Table 6). Information for calculating the amount of dry biomass is available in Appendix I.

The next two purposes are not likely to be part of a conservation tillage crop production system. Select the desired purpose and provide the required documentation.

___ Reduce energy use in field activities. Document at least a 25% reduction in the RULSE2 software.

___ Reduce tillage-induced air-borne particulate matter. The standard will probably not be used in Georgia to accomplish this purpose, except indirectly, by reducing soil erosion, as mentioned in the first purpose.

Conservation Management System

A single conservation practice rarely provides the treatment needed to protect a natural resource. As mentioned above, a conservation tillage system should include at least the three practices at the same time in a field. Furthermore, residue management should be components of conservation management systems that conserve energy, soil, water, air, plant and animal resources while meeting the objectives of the land user. Crop rotation and nutrient and pest management are also recommended in a conservation management system along with residue management.

As mentioned above, the soil is left undisturbed from harvest through planting in

strip-till, except for narrow strips up to 1/3 of the row width. Planting or drilling is accomplished with equipment that has coulters, row cleaners, in-row chisels, subsoiler shanks, or disk openers. Weed control is accomplished primarily with herbicides.

As mentioned above, the maximum STIR value for a specific period of the rotation, obtained from the current NRCS soil erosion software, cannot exceed 80. This level of tillage is applicable to all purposes.

Crop residue is left on the soil surface from the prior crop harvest. Distribute crop residue evenly throughout the field with combines and other harvesting machines.

Do not graze or hay residue in a conservation tillage system.

Crop residue will not be wind rowed or burned. The removal of residue by baling or grazing is limited to retain the amount of residue needed to achieve the intended purpose.

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 plan a new residue amount and orientation or adjust the planting, tillage, or harvesting equipment to meet the criteria.

If there are areas of heavy residue accumulation (because of movement by water or wind) in the field, spread the residue prior to planting so it does not interfere with planter operation.

Practice Lifespan 1 year

Table 1 – Documentation for the rotation by purpose. Many of the results are obtained from RUSLE2 or the current NRCS soil erosion software. Provide information required in the table below or in the software printout.

			Documentation Required by Purpose ¹			
			For All Purposes	Reducing Soil Erosion	Maintaining Soil Quality	Increasing Soil Moisture
Field/Tract	Crop	Dry Crop Residue (lbs./ac.) ¹	STIR Value <=80	Current, Planned & Obtained Soil Loss (tons/ac.) ²	SCI=>0	Crop Residue ³

¹ See Appendix I for estimating dry crop residue.

² Also, determine the amount of surface residue, time of year required and amount of soil disturbance allowed to reduce erosion to the desired level. Maximum row grade is 4%.

³ Document actual range in per cent surface cover of field at the time of year when the lowest surface cover is anticipated. Minimum 60% surface residue cover required throughout the year on 50% of the field.

For More Information Contact your local NRCS Office and Soil & Water Conservation District

Jobsheet Certifications

Prepared by

_____ Title _____ Date _____

Approved by

_____ Title _____ Date _____

Installation Meets NRCS Standards and Specifications

Certified by

_____ Title _____ Date _____