

Landowner \_\_\_\_\_

**Harmon Co., OK****WHAT IS NO TILL/STRIP TILL/DIRECT SEED?**

No Till/Strip Till/Direct Seed are similar systems that can be described as managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities to only those necessary to place nutrients, condition residue, and plant crops.

**PURPOSE**

No Till/Strip Till/Direct Seed residue management systems can be designed to accomplish one or more of the following:

- reduce sheet and rill erosion
- reduce wind erosion
- improve soil organic matter content
- reduce CO<sub>2</sub> losses from the soil
- reduce soil particulate emissions
- increase plant-available moisture
- provide food and escape cover for wildlife

**HOW IT HELPS THE LAND**

Using No Till/Strip Till/Direct Seed for all crops in a rotation or cropping system:

- increases the amount of cover on the soil surface reducing wind and water erosion.
- increases the rate of soil organic matter accumulation and decreases soil bulk density.
- keeps soil in a consolidated condition, which provides additional resistance to sheet and rill erosion.
- sequesters more carbon in the soil.
- further reduces the amount of particulate matter generated by field operations.
- forms root channels and other near-surface voids that increase infiltration.
- protects soil moisture from evaporation.

**WHERE THE PRACTICE APPLIES**

This practice applies to all cropland and other land where crops are grown.

## WHERE TO GET HELP

For assistance with this practice, contact your local Natural Resources Conservation Service office or your local Conservation District office.

## APPLYING THE PRACTICE

Crop residues are maintained on the soil surface throughout the crop rotation. Harvested residues need to be uniformly distributed over the soil surface.

Crop residues should not be burned or disturbed by full width tillage equipment regardless of the depth of the tillage operation. Use only implements that disturb the soil in strips or slots such as no-till and strip-till planters or selected drills and air seeders, strip-type fertilizer applicators, manure injectors, and in-row chisels.

The Soil Tillage Intensity Rating (STIR) value in RUSLE2 for all field operations performed during the crop interval between harvest of the previous crop and harvest or termination of the current crop (including fallow periods) should be no greater than 30.

Equipment traffic should be controlled on the field during periods of wet weather to avoid ruts and compaction.

When grazing or haying is used to remove crops or residues, allow for adequate residues to remain on the soil surface during fallow periods.

## CONSIDERATIONS

Removing crop residue by baling or grazing can have a negative impact on resources. These activities should not be performed without full evaluation of impacts on soil, water, animal, plant and air resources.

Production of adequate amounts of crop residues can be enhanced by the selection of high residue producing crops and crop varieties in the rotation, use of cover crops, and adjustment of plant populations and row spacing.

Perform soil testing just prior to planting and monitor through the entire crop rotation. Apply nutrients at the recommended rates for each crop in the rotation.

Compacted soil layers need to be alleviated before implementing a no till system. Compaction should be checked periodically during the crop rotation.

Existing structural practices (terraces, waterways, etc.) should be functioning as designed prior to implementing a no till system. Repair and maintain these practices as needed.

When deep soil disturbance is performed, such as by subsoiling or fertilizer injection, make sure the vertical slot created by these implements is closed at the surface.

Soil disturbance that occurs when soil temperatures are below 50° F will release less CO<sub>2</sub> than operations done when the soil is warmer.

Slower operating speeds will generally produce fewer soil particulate emissions.

Farming dry soils will produce more soil particulates than moist soils.

Soil-disturbing operations performed when the soil surface is wet will result in greater moisture loss than operations done when the top two to three inches of soil have dried.

Leaving stubble 10-inch or higher will trap more snow and provide better protection to plants from freezing or desiccation.

Variable-height stubble patterns will further increase snow trapping.

Performing all field operations on the contour will slow overland flow and allow more opportunity for water infiltration.

Leaving rows of unharvested crop standing at intervals across the field or adjacent to permanent cover will enhance the value of residues for wildlife food and cover. Leaving unharvested crop rows for two growing seasons will further enhance the value of these areas for wildlife.

Avoid disturbing standing stubble or heavy residue during the nesting season for ground-nesting species.

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