

Landowner _____



WHAT IS RESIDUE TILLAGE MANAGEMENT NO TILL?

Residue management is 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.

This practice only involves an in-row soil tillage operation during the planting operation and a seed row/furrow closing device. There is no full-width tillage performed from the time of harvest or termination of one cash crop to the time of harvest or termination of the next cash crop in the rotation regardless of the depth of the tillage operation.

PURPOSES

Surface roughening is used to:

- Reduce wind erosion
- Reduce dust emissions into the air
- Protect plants from abrasion by wind blown particles

HOW IT HELPS THE LAND

Implementing no till residue management 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 in planning no till residue management, contact your local Natural Resources Conservation Service or your local Conservation District office.

APPLYING THE PRACTICE

Crop residues should be 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.

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

To maintain the full benefit of no-till, grazeout wheat (i.e., not harvested for grain) will only be applied once within a crop rotation and at a rate of no more than one in three years. The grazed out wheat shall maintain 60% ground cover of living biomass and will be immediately followed by the planting of a high residue producing warm season crop or cover crop to supply crop residue which is lost during the grazing operation.

Grazing of harvested crop residue shall be managed to maintain a minimum of 50% ground cover on the soil surface or 1500 lbs/acre of small grain equivalent (SGe) until planting of the next crop.

When ruts created from normal field operations become a concern, leveling shall be limited to implements that minimize residue burial (ex. sweeps, chisels, etc.) whenever possible. Tillage will only be used on the area(s) of the field needing to be leveled. Avoid tillage when soil is wet.

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.

Long term no till management requires rotating crops to crops with different life cycles. Rotating crops, herbicides, and pesticides results in increased diversity, lower economic risk, and decreased pest adaptation to the crop cycle.

CONSIDERATIONS

Production of adequate crop residues to achieve the purpose of this practice can be enhanced through the use of high residue crops and crop varieties, the use of cover crops, and adjustment of plant populations through seeding rates and row spacing.

Using wider row spacing on drills will disturb less soil and leave more standing residue thus more protection against wind and water erosion.

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

Using Residue Management - No Till for all crops in the rotation or cropping system can enhance the positive effects of this practice by:

- increasing the rate of soil organic matter accumulation.
- keeping soil in a consolidated condition, which provides additional resistance to the erosive forces of water and wind.
- sequestering additional carbon in the soil.
- further reducing the amount of particulate matter generated by field operations.
- reduce energy inputs to establish crops.
- forming root channels and other near-surface voids that increase infiltration.

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