

Landowner \_\_\_\_\_

**WHAT IS MULCH TILL RESIDUE MANAGEMENT?**

Mulch Till systems manage 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 crops in systems where the entire field surface is tilled prior to planting.

**PURPOSE**

Mulch Till systems are used to accomplish one or more of the following:

- Reduce sheet and rill erosion
- Reduce wind erosion
- Reduce soil particulate emissions
- Maintain or improve soil condition
- Increase plant-available moisture
- Provide food and escape cover for wildlife

**HOW IT HELPS THE LAND**

Mulch Till reduces the number of tillage operations performed during the crop rotation decreasing soil aeration. Crop residues can then be used to reduce soil erosion, conserve soil moisture, manage snow, and provide food and cover for wildlife.

**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 or your local Conservation District office.

**APPLYING THE PRACTICE**

Crop residues should not be burned or completely buried by tillage equipment. Harvested residues

need to be uniformly distributed over the soil surface by using straw spreaders on combines.

The crop rotation should maintain at least a 30% cover of residues on the soil surface at planting or have an annual Soil Tillage Intensity Rating (STIR) of no more than 60.

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.

When grazing or haying is used to remove crops or residues, be sure to allow for adequate soil cover during fallow periods.

Control equipment traffic on field during periods of wet weather to avoid ruts and compaction.

#### **CONSIDERATIONS**

Removal of 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 residue necessary for the proper functioning of this practice can be enhanced by selection of high residue producing crops and crop varieties in the rotation, use of cover crops and adjustment of plant populations and row spacing.

Where improving soil tilth is a concern the use of undercutting tillage implements will enhance accumulation of organic material in the surface layer.

CO<sub>2</sub> loss is directly related to the volume of soil disturbed, the intensity of the disturbance, the soil moisture content and the soil temperature at the time the disturbance occurs. The following guidelines can make this practice more effective:

- Shallow soil disturbance (1-3 inches) releases less CO<sub>2</sub> than deeper operations.
- When deep soil disturbance is performed, such as subsoiling or fertilizer injection, make sure the vertical tillage 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.

The effectiveness of crop stubble to trap snow increases with stubble height. Increasing the stubble height will increase the amount of snow trapped.

Variable height stubble patterns may be created to further increase snow trapping and storage.

Tillage and planting operations done on the contour will help slow overland flow and increase infiltration, thus increasing the potential for increased water storage in the root zone.

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

Forgoing fall shredding or tillage operations will maximize the amount of wildlife food and cover during critical winter months.

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.

---

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

---