

Practice: 345 - Res. & Tillage Mgt, Mulch-till

Scenario: #1 - Mulch till-Basic

Scenario Description:

Mulch-till 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 crops in systems where the entire field surface is tilled prior to planting. This practice includes tillage methods commonly referred to as mulch tillage or chiseling and disking. It applies to stubble mulching on summer-fallowed land, to tillage for annually planted crops and to tillage for planted crops and to tillage for planting perennial crops. All residue shall be uniformly distributed over the entire field, be present on the soil surface throughout the critical wind erosion period(s), and not burned or removed. RUSLE2 or WEPS models will be used to review the farming operation and determine if enough residue is being retained, throughout the rotation, to keep soil loss below T. Residue and tillage management, mulch till is planned and applied to address one or more of the following purposes: reduce sheet and rill erosion, reduce wind erosion, improve soil quality, reduce energy use, or increase plant-available moisture. This practice is applicable to both irrigated and non-irrigated fields and conventional or organic farming operations.

Before Situation:

Full width tillage is performed to incorporate post harvest crop residues, prepare the seed bed, and manage weeds. Crop residue cover is not maintained on the soil surface. Residue amounts after harvest average 30% or less, resulting in bare soil being exposed to erosion (wind & water) during fallow periods. Runoff from the fields may flow into streams, water courses or other water bodies causing degradation to the receiving waters. Soil health (soil organic matter) declines over time as a result of tillage practices, low residue monocultures, and long periods of bare soil.

After Situation:

Following harvest, at least 30% of the crop residues will be maintained on the soil surface, during critical erosion periods or until the next crop is planted. Soil erosion losses will be kept below T as documented in RUSLE2 and or WEPS models. Over time, soil health is improved due to the additional biomass, ground cover, soil infiltration, and plant diversity in the cropping system.

Scenario Feature Measure: Area planted

Scenario Unit: Acre

Scenario Typical Size: 100

Scenario Cost: \$3,603.00

Scenario Cost/Unit: \$36.03

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<i>Equipment/Installation</i>						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$16.87	100	\$1,687.00
Seeding Operation, No Till/Strip Till Planter	1230	No Till/Strip Till row planters for seeding. Includes all costs for equipment, power unit, and labor.	Acre	\$19.16	100	\$1,916.00