



Mulch Till (345) – High Intensity

Residue and Tillage Management –Irrigated Cropland

Conservation Practice Job Sheet

ID- 345, JS- 19



What is a High Intensity Mulch-Till System?

Mulch-till systems manage the amount, orientation, and distribution of crop and other residue on the soil surface year round, while growing crops where the entire soil surface is tilled prior to or during the planting operation. Residue is partially incorporated using chisels, sweeps, field cultivators, or similar implements. Residue management is used in conjunction with crop rotation, and other practices needed on a site-specific basis, to address wind erosion and water quality concerns while meeting the landowner's objective.

Purpose

The enhanced mulch-till system is designed to accomplish the following conservation purposes:

- Reduce wind erosion
- Increase soil organic matter and soil tilth
- Improve water quality
- Reduce energy use
- Reduce PM 10
- Increase awareness and acceptance of innovative conservation tillage systems

Enhanced mulch till systems reduce soil erosion from wind and water by converting to conservation tillage; conserve soil moisture by adopting conservation tillage to reduce tillage operations that typically deplete soil moisture; and, reduce the risk of failure

by implementing more effective methods of growing crops on irrigated cropland.

Practice Specifications

This practice applies to irrigated cropland. It includes tillage methods commonly referred to as mulch tillage or chiseling and disking. It also includes some planting operations such as hoe drills, air seeders and "no-till" drills that disturb a large percentage of the soil surface during the planting operation, strip tillage operations for root crops where harvest equipment disturbs a large percentage of the soil surface, or combination of mulch tillage and no-till systems. All residues shall be uniformly distributed over the entire field. Residue shall not be burned.

The amount of randomly distributed surface residue needed and the amount of surface soil disturbance allowed to reduce erosion to the planned soil loss objective (at or below "T") shall be determined using RUSLE2 (sheet and rill erosion) or WEQ (wind erosion).

Other forms of erosion must also be addressed and meet quality criteria. Sprinkler-induced erosion will be determined through visual assessment. SISL will be used to determine surface irrigation induced erosion. Calculations shall account for the effects of other practices in the management system (such as change in crop rotation).

The planned crop rotation and tillage system must provide a positive rotational SCI, and a 25% reduction in the average annual STIR for the contracted years.

Production of adequate amounts of crop residue necessary for the proper functioning of this practice can be enhanced by change in rotation to include additional high-residue producing crops in the rotation, use of cover crops and green manures, and adjustment of plant populations and row spacing.

Mulch till may be practiced continuously throughout the crop sequence or may be managed as part of a residue management system that includes other tillage methods such as no till.

EQIP Requirements

The minimum contracted period for this practice is three years. The contracted years of the rotation will

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not contain alfalfa or permanent cover (with the exception of the establishment year), although the entire rotation used to calculate the SCI may contain these.

The producer must maintain the practice for the length of the rotation used to determine the rotational SCI. Producers must keep annual records of all tillage and crops grown, and will provide to NRCS annually. Rotations shall provide for acceptable substitute crops for weather related or economic reasons. Acceptable substitutes are crops having similar properties that meet the criteria for all the resource concerns identified for the field or treatment unit, and provide for an annual STIR rating equal to or less than the planned tillage for that year. RUSLE2/SCI and WEQ updates will be required to verify that the producer is still in compliance. **Any changes to the planned rotation and tillage must be approved prior to any site preparation or planting for the year of the deviation.**

Recommended companion practices include grassed waterways, filter strips or riparian buffers to fully address the water quality concerns, and windbreaks and other conservation practices needed to address wind erosion concerns, especially during the critical erosion period (e.g., seasonal residue management, surface roughening, PAM, etc.).

The attached worksheets will document the planned rotation and tillage. The producer may use blank copies of the worksheets to keep annual records, or may use any format for record keeping that provides the required information.

Documentation will include the rotation, erosion rates, annual and rotational STIR, and rotational SCI values for both the benchmark and contracted crop rotation. **The planner will attach copies of the RUSLE2/SCI, SISL, and WEQ evaluations.**

CLIENT'S ACKNOWLEDGEMENT STATEMENT

Have you received payments for a residue management practice (e.g., ridge till, mulch till, no till) from any local (e.g. Soil Conservation District), state, or federal entity in the last ten years? Note: You are not eligible for EQIP payments if you have received financial incentives within the last 10 years for any type of residue management practice.

YES

NO

The Client acknowledges that:

- a. The planned rotation must provide a positive SCI, and reduce the average annual STIR value by 25% for the contracted years.
- b. The producer must receive approval of any changes to the planned rotation and tillage prior to any site preparation or planting for the year of the change.
- c. The producer must keep annual records of crop and tillage and provide copies to NRCS annually.
- d. The producer has received a copy of this practice specification and understands the contents and requirements.

Accepted by: /s/ _____ Date: _____

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Tract & Field #s	Acres	Crop for Each Year in the Planned Rotation						
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7

Identify which are the contracted years.

