

RESIDUE MANAGEMENT , NO-TILL AND STRIP TILL

PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service - practice code 329A



RESIDUE MANAGEMENT, NO-TILL AND STRIP-TILL

This practice is managing the amount, orientation and distribution of crop and other plant residue on the soil surface year-round. Crops are planted and grown in narrow slots or tilled strips established in the untilled seedbed of the previous crop.

PRACTICE INFORMATION

The objective of this practice is to maintain most of the crop residue on the soil surface throughout the year. The practice may be referred to as no-till, zero-till, slot plant, row-till, strip-till or just the generic term conservation tillage. The common characteristic of this practice is that the only tillage performed is a very narrow strip prepared by coulters, sweeps, or similar devices attached to the front of the planter.

Weeds and other pests are generally managed by using agriculture chemicals. The chemicals used are approximately the same as those used with a tillage based system, but a “no-till” residue management system requires a higher level of technology and management than a more conventional tillage system. The fields must be scouted on a regular basis and the farm operator must be very familiar with the pests and understand the concept of threshold populations and other Integrated Pest Management technologies.

The benefits of this practice are significant. Erosion is usually reduced to an acceptable level due to the protective residue left on the surface.

Soil organic matter increases and soil organisms such as earth worms increase progressively. The soil tilth improves, and productivity increases as the constant supply of organic material left on the surface is decomposed by a healthy population of soil organisms.

The following pages contain the conservation effects expected to occur when this practice is applied. These effects are subjective and somewhat dependent on variables such as climate, terrain, soil, etc. Users are cautioned that these effects are estimates that may or may not apply to a specific site.

CONSERVATION PRACTICE PHYSICAL EFFECT WORKSHEET

NOTE: recorded in Microsoft word 6.0 - use tabs to change cells/fields

STATE	ANY	FIELD OFFICE	ANY	DATE	12/5/96
PRACTICE: 329A Residue Management, No-Till and Ridge-Till				NOTES:	
RESOURCE: SOIL RESOURCE CONCERN: EROSION				Help Message: Click on form field for choice lists. Tab key to move around. "N/A" is the default.	
RESOURCE INDICATORS				PHYSICAL EFFECTS	
SHEET AND RILL				moderate reduction in sheet and rill erosion	
WIND				significant reduction in wind erosion	
EPHEMERAL GULLY				moderate reduction in ephemeral gully erosion	
CLASSIC GULLY				slight reduction in classic gully erosion	
STREAMBANK				insignificant	
IRRIGATION INDUCED				significant reduction in irrigation induced erosio	
SOIL MASS MOVEMENT				slight increase in mass movement of soil	
ROADBANK/CONSTRUCTION				N/A	
OTHER					
RESOURCE CONCERN: SOIL CONDITION					
SOIL TILTH				significant improvement in soil tilth	
SOIL COMPACTION				significant reduction in soil compaction	
SOIL CONTAMINATION					
• SALTS				slight reduction in soil salinity	
• ORGANICS				slight decrease in organic contaminates	
• FERTILIZERS				slight reduction in contamination from fertilizer	
• PESTICIDES				slight reduction in pesticide pollution	
• OTHER					
DEPOSITION/DAMAGE					
• ONSITE				significant reduction/onsite deposition damage	
• OFFSITE				significant decrease/offsite deposition damage	
DEPOSITION/SAFETY					
• ONSITE				significantly improve onsite safety/deposition	
• OFFSITE				sign. improve offsite safety hazard/deposition	
OTHER					
RESOURCE: WATER RESOURCE CONCERN: WATER QUANTITY					
SEEPS				slight increase in seepage hazard	
RUNOFF/FLOODING				moder. decrease in runoff/flooding	
EXCESS SUBSURFACE WATER				slight increase in excess subsurface water	
INADEQUATE OUTLETS				significant improvement in H2O outlet concern	
WATER MGT. IRRIGATION					
• SURFACE				insignificant	
• SPRINKLER				significant improvement in irrigation efficiency	
WATER MGT. NON-IRRIGATED				significant improvement in moisture use	
RESTRICTED FLOW CAPACITY					
• ONSITE				insignificant	
• OFFSITE				insignificant	
RESTRICTED STORAGE				sign. reduction in sedimentation of H2O storage	
OTHER					

RESOURCE: WATER	
RESOURCE CONCERN: WATER QUALITY	
RESOURCE	PHYSICAL EFFECTS
GROUNDWATER CONTAMINANTS	
• PESTICIDES	insignificant
• NUTRIENTS AND ORGANICS	insignificant
• SALINITY	insignificant
• HEAVY METALS	insignificant
• PATHOGENS	insignificant
• OTHER	
SURFACE WATER CONTAMINANTS	
• PESTICIDES	moderate reduction in SWater contam./pesticides
• NUTRIENTS AND ORGANICS	moderate reduction in SWater contam./nutri.,organ.
• SUSPENDED SEDIMENTS	sign. reduction in SWater contam./susp. sedi.
• LOW DESOLVED OXYGEN	insignificant
• SALINITY	slight reduction in SWater contam./salinity
• HEAVY METALS	N/A
• WATER TEMPERATURE	N/A
• PATHOGENS	N/A
AQUATIC HABITAT SUITABILITY	significant improvement in Aqua. Hab. Suit.
OTHER	
RESOURCE: AIR	
RESOURCE CONCERN: AIR QUALITY	
AIRBORNE SEDIMENT AND SMOKE PARTICLES	
• ONSITE SAFETY	sign. decrease in airborn sed.&smoke part./safety
• OFFSITE SAFETY	sign. decrease in airborn sed.&smoke part./safety
• ONSITE STRUCT. PROBLEMS	sign. decrease in struc. problems/dust and smoke
• OFFSITE STRUCT. PROBLEMS	sign. decrease in struc. problems/dust and smoke
• ONSITE HEALTH	sign. decrease in onsite health prob./dust&smoke
• OFFSITE HEALTH	sign. improvement in offlsite health
AIRBORNE SEDIMENT CAUSING CONVEYANCE PROBLEMS	sign. decrease in airborn sediment/convey. prob.
AIRBORNE CHEMICAL DRIFT	insignificant
AIRBORNE ODORS	insignificant
FUNGI, MOLDS, AND POLLEN	insignificant
OTHER	
RESOURCE CONCERN: AIR CONDITION	
AIR TEMPERATURE	N/A
AIR MOVEMENT (windbreak effect)	N/A
HUMIDITY	N/A
OTHER	

RESOURCE: HUMAN	
RESOURCE CONCERN: SOCIAL CONSIDERATIONS	
RESOURCE INDICATORS	PHYSICAL EFFECTS
PUBLIC HEALTH AND SAFETY	N/A
PRIVATE/PUBLIC VALUES	N/A
CLIENT CHARACTERISTICS	N/A
RISK TOLERANCE	N/A
TENURE	N/A
OTHER	
RESOURCE CONCERN: CULTURAL CONSIDERATIONS	
ABSENCE/PRESENCE OF CULTURAL RESOURCES	insignificant
SIGNIFICANCE OF CULTURAL RESOURCES	insignificant
MITIGATION OF NEGATIVE CULTURAL RES. IMPACTS	insignificant
OTHER	