

RESIDUE MANAGEMENT, NO-TILL/STRIP TILL/DIRECT SEED

USDA, NATURAL RESOURCES CONSERVATION SERVICE PA329



PRACTICE DEFINITION

Management of the amount, orientation and distribution of crop and other plant residue on the soil surface throughout the year. Crops are established in narrow slots or tilled strips in the untilled seedbed of the previous crop.

PRACTICE INFORMATION

The objective of this practice is to maintain maximum crop residue on the soil surface throughout the year. The practice may be referred to as no-till, or strip-till. The common characteristic of this practice is that tillage is only performed in a very narrow strip prepared by coulters, sweeps, or similar devices attached to the front of the planter. All prior crop residues must be evenly distributed for effective no-till systems. Weeds and other pests are managed by using agriculture chemicals and cultural practices such as cover cropping and crop rotations. “No-till” planting systems require a higher level of technology and management than those systems using tillage. The fields must be scouted on a regular basis and the farm operator must be familiar with the pests and understand the concept of threshold populations and other Integrated Pest Management technologies. It is highly recommended that producers desiring to start a no-till system consider contacting a Certified Crop Advisor or other consultant with knowledge of no-till farming.

The benefits of this practice are significant. To maximize these benefits, no-till must be used as a continuous system without ever performing tillage. Crop rotations and the use of cover crops also become important in early years of a no-till system and to maximize the benefits of the no-till system. Erosion is usually reduced to acceptable levels and sometimes below. This is due to the protective residue left on the surface, the use of cover crops as well as decreased surface runoff. Soil organic matter increases and soil organisms such as earthworms increase progressively. The soil tilth improves, and productivity increases as the constant supply of organic matter left on the surface is decomposed by a healthy population of soil organisms. These characteristics of a no-till system help to decrease surface runoff and increase infiltration to provide more soil moisture for growing crops

