



where would you be without conservation

since the 1930s New Mexico weathered two droughts worse than the Dust Bowl. did you notice? no? maybe it was because of conservation

state-of-the-art conservation techniques

conservation tillage



The USDA is an equal opportunity provider and employer.

Save Money, Save Energy with Conservation Tillage

Bare soils, associated with conventional tillage, lead to severe soil erosion from both wind and water. In addition to wind and water erosion, conventional tillage can cost growers in soil productivity and poor water use. In contrast, conservation tillage is any system that leaves at least a third of the surface covered with residue after planting.

Conservation tillage has two basic advantages for the grower: conservation of soil, water, and soil organic matter; and reduction of costly inputs while maintaining or improving crop yields and profits.

In a New Mexico State University sprinkler-irrigated wheat study in the Clovis, New Mexico area, irrigated cost and return estimates showed large differences between conventional and conservation tillage systems. While yields and purchased inputs were similar, the conservation tillage system saved \$27.71 acre in irrigation fuel and oil savings. The difference was caused by less water loss from evapotranspiration, which allowed growers to reduce the number of irrigations from seven to five. In addition, conservation tillage operating expenses for the wheat were \$35.24 per acre less than the conventional tillage system.

Producers may discover additional benefits with conservation tillage or reduced tillage systems, including utilization of marginal land, reduced soil compaction, some harvesting advantages, and conservation compliance. See your CES agent or NRCS field office for information on conservation tillage systems.

Potential Benefits of Conservation Tillage

Environmental:

- Reduces soil erosion from both water and wind (90% erosion reduction can be expected when using a no-till instead of intensive tillage system).
- Increases organic matter (each tillage trip oxidizes some organic matter; research shows continuous no-till can increase organic matter in the top 2 inches of soil about 0.1% each year).
- Improves water quality (when combined with irrigation water management, crop nutrient management, integrated pest management, conservation crop rotation, in

integrated system, conservation tillage plays an important role in improving both runoff to streams, rivers, and lakes as well as water that finds its way into aquifers).

- Improves wildlife habitat (the crop's residue provides food and shelter. In addition, if combined with other needed habitat, such as grassy cover and woody areas, wildlife may increase significantly).
- Other benefits include reduced soil compaction, utilization of marginal land, some harvesting advantages, and conservation compliance.

Economic:

- Yields are good, if not better, than reduced or intensive tillage system when managed properly.
- Optimizes soil moisture (improved infiltration and increased organic matter are especially important on droughty soils and may help the crop through a persistent dry period. Tillage reduces available moisture by about ½" per trip).
- Saves time (On a 1000 acre farm, an additional 100 hours are needed for every pass (example based on 18' disk, 160 hp FWD). Many growers take advantage of the time savings by exploring other "opportunities").
- Reduces fuel consumption (no-till can reduce fuel use by 3.5 gallons/acre compared to intensive tillage).
- Reduces overall production costs (NMSU reports that irrigated wheat yields in Clovis are comparable between conventional and conservation tillage, but production costs for conservation tillage are lower by as much as \$50 per acre).
- Reduces machinery wear (less machinery means fewer pieces need to be replaced. Economists report this amounts to a \$5/acre reduction in costs).

