

No-Till Notes:
It's All About Water

By Rod Wilke, Watershed Water-Quality Project Coordinator
University of Nebraska – Lincoln Extension

This week's column by Rod Wilke is in special observance of National Stewardship Week themed "Water Is Life," April 27-May 3.

Life and water. The first cannot exist without the second. The realities of water shortages (as evidenced by the state's drought areas and the counties experiencing decreasing groundwater levels) quickly become known and support the need for all of us to be responsible managers of water quantities and quality.

University research and demonstration has proved that the practice of continuous no-till (no soil disturbance to bury crop residue except for the minimal disturbance caused by the planter and limited nutrient application) crop production can greatly improve water quality. In addition, continuous no-till crop production improves soil quality, reduces production costs (increasing profits), increases water infiltration and reduces soil moisture loss. A recent crop-residue management survey of northeast Nebraska crop fields indicates that the practice of continuous no-till cropping has increased in acceptance... and indications are that this practice will continue to be applied to more acres because of its economic and environmental advantages.

Informed producers recognize that fuel, machinery, irrigation and labor costs are too expensive and, thus, have elected to abandon traditional tillage practices and leave crop residue and growing vegetation on the soil surface. *The practice of continuous no-till crop production is economically logical, environmentally sensible and socially responsible.* The practice is certain to bring about improvement in the quality of water that leaves individual watersheds and flows into surface streams and water bodies... as well as water that may leach into underground aquifers.

For a crop producer, improving soil quality using continuous no-till is a first step to improving water quality. The organic matter, crop residue and growing vegetation within the soil and on the soil surface will act as a water filter as well as a flow-reduction-agent to allow for greater infiltration of surface moisture and velocity-reduction of the excess runoff. Traditional tillage destroys organic matter and soil structure leading to drier soils (requiring more crop water), compaction (restricting root development) and reduced moisture infiltration (increasing runoff that carries sediment, nutrients, and organic matter to our surface and ground waters).

A second step to water-quality-improvement would be the establishment of conservation buffers such as grassed waterways, filter strips, contour buffer strips, field borders, and riparian forest buffers, to name a few.

It is gratifying to see the number of producers who have taken this ethical environmental-leadership position by first adopting continuous no-till, and then by establishing permanent vegetation in sensitive flow areas on production acres and next to water bodies. Some of these same producers are also leading the way in doing their part to improve the quality of water within their watershed by having old or abandoned wells properly sealed and by upgrading their household wastewater (septic) system. Others are

embracing a relatively new concept of filtering livestock lot-runoff by installing a Vegetative Treatment System...a less expensive alternative to a waste lagoon.

UNL–Extension and your local NRCS personnel can assist you by providing research and demonstration documentation supporting the value of these water-quality-improvement practices. We will have made major strides toward improving water quality when each one of us takes responsibility for the quality of runoff water that leaves our property and continues its journey to the bottom of the watershed. The process starts with you and me....not our upland neighbor.