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A LITTLE BIT COUNTRY
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Soil Health Information Ranks High

This past week I participated in two meetings scheduled to plan the educational programs for next year's Wheat Show and Pulse Day. These meetings involved farm producers, agribusiness folks and county agents. Both groups are at the initial stages of identifying issues that have positive impact on farm profits and what producers want to learn more. Both committees cited 'soil health' as a broad area for which there is opportunity to improve productivity of cropland acres.

Researchers across the nation are beginning to convince us that plants and soils are entwined in shared life. The health of one depends upon the health of the other. Many years ago I attended an in-service training during which Dr. Lee Manske, Range Scientist at the Dickinson Research Center explained how soil organisms have a significant role in maintaining prairie ecosystems which have survived the passage of time and ravages of weather. At the time I thought this message was a little deep for me. Then a few years later I attended a national county agent meeting and heard an Ohio researcher describe how they were able to eliminate water erosion in cropland having six percent slopes by increasing soil organic matter and soil organism population.

Since these early contacts other researchers such as Martin Entz, Plant Scientist at the University of Manitoba; Jill Clapperton, a rizosphere ecologist with past ties to Agriculture Food Canada and Don Tanaka of the North Great Plains Research Laboratory at Mandan have affected my thinking regarding the importance soil organisms play in producing plant life and visa-versa.

In the new publication "The Zero Till Evolution" published by the Manitoba-North Dakota Low Tillage Farmers Association, Entz quotes "It's essential for plants to be a part of any process intended to improve soil health. Healthy soils lead to healthy plants and, in turn, healthy people."

Entz emphasizes that maintaining sufficient moisture is critical to produce plant soil synergy. In the northern plains more moisture usually produces more biomass from plants. The volume of biomass is important because from that storehouse of material comes the soils potential to make organic matter. The carbon in the biomass is the carbon source for the soil and the amount of root material contributes to this carbon.

Without question no-till farming practices have been a major contributor to the soil health in the Northern Plains. It has reduced the loss of soil moisture through evaporation thus making more moisture available for plant growth and more biomass for soil organisms can feed on to increase organic matter levels. As organic matter of the soil increases so does water infiltration and water holding capacity.

Tanaka tells us that keeping soil alive is a catalyst for the ongoing breakdown of decomposing plant residue from previous years' crops. In long-term and stabilized no-till systems this breakdown of residue by microorganisms recycles nutrients making them available for subsequent years' crops. Tanaka's research has shown that growing diverse plant communities aid residue decomposition because plant diversity above ground stimulates diversity of life below ground. In other words, the more diverse a population of soil microorganisms, the more diversified and efficient will be their cycling of residue.

Tanaka says, "Every crop has a unique set of organisms associated with it, and the organisms gravitate to that crop. The best way to develop a diversity of organisms in the soil is to grow a diversity of crops."

Although detailed agendas for the Wheat Show and Pulse Day are yet to be determined, I am sure we can look forward to hearing speakers discuss ways we can profitably incorporate diverse cropping systems which also will aid in improving soil health at a faster rate.

The Wheat Show is scheduled February 6, 7 & 8 in Williston while the day and place of Pulse Day is pending.

A complimentary copy of the above reference publication can be obtained by calling this office 701-577-4595.