



“Solvita is an excellent tool to measure soil health. I routinely include it in soil evaluations and to monitor improvements on the farm”

**Dan Davidson, CCA, farmer
Stanton County, NE**

The Challenge

Dan Davidson looks after the family farm in northeast Nebraska. He has noticed that the soils, mainly high pH and calcareous, have tight clays, are scarce in earthworms and the soil lacks an earthy smell. In short the soil has poor tilth even though No-till had been the common practice.



Discovery

Dan conferred with local farmers interested in improving the tilth of their soil and then set out to develop his own recipe, long before soil health became a term. Over more than a decade he has followed a two-year corn followed by a one-year soybean rotation that includes 1 ton/a of ag gypsum and 4 to 6 ton/a

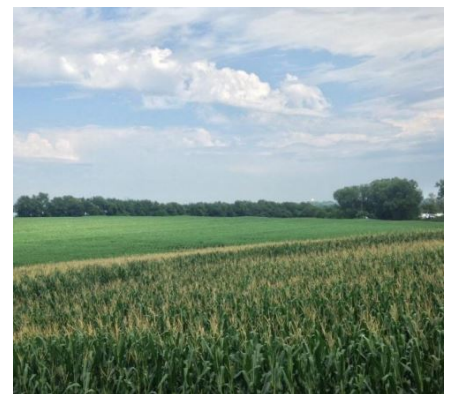
of manure compost on a 3-year rotation. In addition to no-till, he plants cereal rye as a cover after harvest. He has noticed a distinct uptick in yield, mellowing of the soil and tilth improvement.

WHY DAN USES SOLVITA SOIL TESTING

Dan notes that after a decade this 80-acre field was distinctly better than others on their farm that did not get the same attention and investment. Because of his interest in soil health and the tools to measure its indicators he became familiar with Solvita. He felt that a CO₂ respiration test should be an excellent tool to monitor soil since it aggregates into one the many factors that affect it.

Results

Dan has determined that this field now has CO₂ respiration values of from 80 to 90 ppm compared to a neighboring field that farmed more conventionally which has respiration values in the 40 to 60 ppm range. Over a decade, following his recipe, he has seen the productivity of this field double from 100 to 200 bu with less yield variability across the field and more resiliency to heat and drought stress.



The Davidson family farm comprises more than 800 acres in Stanton County, Neb. The major crops are corn, soybeans, alfalfa and pasture. Conservation practices include no-till, crop rotation and planting covers when time allows. Application of gypsum, manures and compost is a common practice. Davidson is an advocate of soil health, implementing strategies to improve it and routinely measuring it at the field level to document gains.