



## Welcome to Ground Work

### *Capturing Carbon*

8/20/2012

*Over the past few weeks we've been focusing on residue management because wise residue management is at the heart of Biological Farming. And, wise residue management starts with an AgriEnergy Resources **Residue™** program.*

*As a quick refresher course ... good residue management positively impacts soil tilth, seedbeds, nutrient cycling, yield, biosanitation, and your bottom line. In short, **converting crop residue to humus adds value to your farm and pocket book.***

When your residue decomposes to the point you can't recognize what crop it came from, that's a "harvest" of raw organic matter. Live microbes in **Residue™** speed this "harvest" along, sequestering/capturing/storing more of your recycled crop nutrients.

A couple years ago we measured organic matter on several farms which have used our AgriEnergy Resources system for a number of years, including on our own research farm near Princeton, IL. With permission from neighbors, we pulled samples from biologically farmed fields and adjoining conventionally farmed fields with the same soil types.

Our soil samples were segmented into (a) the top three inches, (b) three-to-six inches, and (c) six-to-12 inches. Soils were tested by Midwest Laboratories,

and ***in every instance the organic matter was higher on the biologically farmed field than on the neighboring conventionally farmed field.***

The first set of samples we pulled at our farm compared our biologically farmed soil with the conventionally managed soil to our south, and showed our soil had:

- 23% more organic matter in the top 3 inches
- 26% more organic matter in the 3-to-6 inch profile
- 10% more organic matter in the 6-to-12 inch profile

The difference across a line where a fence once stood was amazing! Our side was dramatically higher in carbon content. So, we checked another side of the farm.

This time we compared our soils to the conventionally-farmed soils adjoining our west boundary. These tests showed we had:

- 40% more organic matter in the top 3 inches
- 49% more organic matter in the 3-to-6 inch profile
- 10% more organic matter in the 6-to-12 inch profile

Even more dramatic! Averaging these two sites, the biologically farmed soil has 3.9% organic matter compared to 2.9% on soils without **Residue™** added.

The difference is 1% organic matter.

- **1% organic matter = 20,000 pounds of organic matter per acre.**
- **1% organic matter also translates into the soil's ability to store another 10,000 gallons of water per acre.** That's about one-third of an inch of extra rainfall captured each time it rains. We usually run low on soil moisture three or four times between summer rains, and an extra third of an inch of stored moisture delays severe moisture stress by one-to-three days each time. Through the growing season, that could give a crop a moisture reserve of an extra four-to-12 days!

What is organic matter? Sure, it is largely carbon. But what else?

***That extra 1% organic matter adds:***

- 1,000 lbs. nitrogen/acre
- 650 lbs. phosphate/acre
- 115 lbs. potash/acre
- 700 lbs. calcium/acre

Building organic matter/sequestering carbon on your farm is "true fertility" gained. The additional carbon has countless benefits for your soil. The sequestered nitrogen and other nutrients have countless benefits for your wallet.

***Talk to us about using **Residue™** to build organic matter.***