



Lasting Change

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Get more from your crop residues. As discussed in last week's *Ground Work*, accelerated residue digestion generates a vast **active carbon** pool that fuels the next crop cycle, reduces purchased inputs, and increases profitability. But wait, there's more! Use some of that active, soluble carbon to build more **stable carbon** and add long lasting fertility and value to your soil.

Some call the process of creating stable carbon 'building organic matter'; some call it 'carbon sequestration'. At AgriEnergy Resources we call it 'building fertility' and we believe our **Residue™** programs play a key role in realizing this beneficial and lasting change to your soils.

Soluble (active) carbons, such as simple sugars, are used as fuel by organisms. They are also used as building blocks – all the molecules in anything that is alive are built around a skeleton of carbon atoms.

Soluble (active) carbons can also be anchored to existing, stable, soil carbon and then themselves become stable carbon. Stable meaning that they are very difficult to degrade by microorganisms and as such they make soil improvements (like better water infiltration and better water holding capacity) practically permanent.

The trick for this process of 'building fertility' to occur is to have more soluble carbon in the soil profile than the microbes can consume. This is a big reason why we advocate acceleration of residue decomposition. In warm, moist climates a

surplus of soluble carbon is very difficult to achieve. But in areas that have a true winter, conditions for sequestering carbon come almost every fall.

The process starts with accelerating the decomposition of our crop residues. This means wise tillage; it could mean cover crops; it could mean fertilizer amendments. It certainly means adding **Residue™** cultures along with a stimulating liquid. When all that is done, a population explosion of decomposing organisms occurs and there is soluble carbon all over the place.

Then winter hits, soils quickly cool off, and the microbes die down. There is little left for the remaining soluble carbon to do but to become part of the previously anchored, stable, soil carbon.

Bottom line: Managing the **carbon** in crop residues, especially following high yields, can help in two ways. (1) You can increase your soil's **active carbon** to fuel the next crop – don't forget that plants need more carbons than any other nutrient. (2) You can anchor **stable carbon** – 'build fertility', 'build organic matter', 'sequester carbon' – to improve your soil's long term fertility and your farm's long term value.

"Organic matter contains more energy than anything else of value to plants." – Robert Parnes, *Fertile Soil*

"Proper carbon management is the most important function on your farm." – AgriEnergy Resources