



Residue Breakdown Program

RESIDUE BREAKDOWN PRODUCTS

Managing the residue from a high yielding crop is a crucial first step in maximizing yield potential for the following year.

Practices that promote the rapid breakdown of residues ensure that the nutrients contained in the residues are re-released into the soil in time for next year's crop.

A great option for promoting faster breakdown of crop residues is by utilizing biological products in the fall directly after harvest. These can be in the form of live biologicals that are applied to the soil, and in the form of biological-stimulating products that provide energy sources for the native microbes to work more efficiently.

Our recommendations for residue breakdown products include **KaPre® AG PLUS WSP** and **KaPre® Embella**. These are great companion products for a fall burndown pass to promote quick and efficient residue breakdown.



KaPre AG PLUS WSP is a biological product that contains 4 robust *Bacillus* species and a *Trichoderma* species at 13.3 billion CFU (colony forming units)/g. These microbes provide enhanced residue breakdown, nutrient cycling, and ultimately increased nutrient availability for next year's crop.



KaPre Embella is comprised of proteins, simple and complex sugars, and sequestering agents. These components promote beneficial microbial activity by providing an energy source to the soil microbes and ensuring that the released nutrients remain stable in the soil and in plant-available forms.

Residue Breakdown Trial

Here is a summary of a residue breakdown trial started in the fall of 2022 and continued into the following spring. In this trial, we compared our residue breakdown program against a competitor's product and a non-treated control. We sampled the soil from each treatment in the fall to provide a baseline, and then again in the spring to quantify what each product is doing in the soil.

	CO ₂ Burst	Soil Health Score	Additional N Credit (lb./ac.)
Non-Treated Control	55.5	8.45	25.5
Competitor's Product	52.0	8.15	27.0
KaPre AG PLUS WSP + KaPre Embella	79.5	11.50	32.0

The **CO₂ Burst** test is a measure of microbial activity in the soil and is highly related to overall soil fertility. This test measures the amount of CO₂ naturally released from the soil due to microbial respiration. In general, the higher the number the better, with 50 being an average for most agricultural soils.

The **Soil Health Score** summarizes the overall health of the soil based on the soil health indicators CO₂ burst, organic C, organic N, and the C:N ratio. A score below 7 is considered low, with higher numbers representing better soil health.

The **Additional N Credit (lb./ac.)** estimates the additional N that will be released via organic matter mineralization in the following year. This N credit is influenced by the CO₂ burst value, the C:N ratio, and the size of the organic N pool.



Control



.5 oz/Acre



8 oz/Acre