

BIO-MULCH™

**Eliminate Your Crop Residue Problems
Turn Years Into Months**

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Bio-Mulch accelerates crop residue break down and increases nutrient cycling and nutrient availability in the soil. Bio-Mulch is specifically designed to reduce crop residue build-up on the soil surface resulting in improved planting, seed placement and germination.

How Does Bio-Mulch Work?

Bio-Mulch is a unique blend of nutrients and fermentation enzymes designed to increase existing local populations of cellulose digesting microbes. By increasing digesting microbe populations naturally, Bio-Mulch accelerates cellular structure break down in stubble, stalks, cobs, roots and other organic debris.

Bio-Mulch is the answer to no-till and minimum-till problems:

Bio-Mulch minimizes crop residue build-up improving the efficacy of these tillage methods.

- Reduced crop residue lessens the risk of nutrient tie up, which is important to the growing crop.
- Less residue improves herbicide activity.
- Reduced crop residue permits better seed germination leading to optimum plant population and higher yields.
- Less crop residue allows soils to warm and dry earlier, enhancing seed-bed preparation and earlier planting.
- Bio-Mulch leaves just the right amount of crop residue on the soil surface for effective protection against water and wind erosion.

Science-Driven NutritionSM



The Issue:

Prior to the widespread adoption of reduced tillage practices, crop residue was turned under to accelerate decomposition and availability of nutrients for next year's crop. Now much of the residue remains on top of the soil increasing the decomposition time and in essence delaying the availability of the nutrients locked-up in the residue. The move towards higher plant populations has only compounded the residue issue and created logistical, planting and in some cases germination issues for more and more farmers. In addition, genetic insect resistance built into corn varieties has increased decomposition time. Corn root balls below the surface are also more durable. While the debris from reduced tillage does help conserve topsoil and moisture, there are limits to the benefits. Sometimes negative consequences occur. Residue may hold in too much moisture, especially in advance of an unusually wet spring. Residue can also harbor more

pathogens and over-wintering insects that are difficult to reach with pesticides and may survive to attack the spring seedlings.

University agronomist's caution against manually removing too much stover after harvest because of long-term "adverse consequences to the soil's level of organic matter or physical and chemical properties and to successive crop yields." (See "Removing Crop Residue Removes Nutrients," University of Illinois September 2010.)

Striking the right balance is the key to managing crop residue, maximizing nutrient cycling and availability and maximizing yields year over year. Bio-Mulch™ is the answer to residue management and plant issues.

The Solution - Bio-Mulch:

Bio-Mulch should be applied at a rate of 1-2 quarts per acre. For application convenience, Bio-Mulch can be applied with additional nitrogen. Bio-Mulch is

recommended for any field situation where crop residue management is needed. Bio-Mulch can also be used to accelerate the breakdown of cover crops after burn-down or applied with discing.

Bio-Mulch can be applied in the spring pre-plant during field prep-work and when spreading ground fertilizers. If applying during the spring, avoid application 2-3 weeks before or after a pre-emergent herbicide application. Bio-Mulch may reduce the persistence and/or performance of pre-emergence herbicides.

Bio-Mulch can also be applied at or immediately after harvest to encourage crop residue breakdown. Shredding, chopping, discing or other mechanical methods used to reduce crop residue piece size and incorporate into the soil will help accelerate the crop cycling process and improve the performance of Bio-Mulch.



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