



Bio Reverse is a robust microbial package designed to significantly reduce residue, stubble, or terminated cover crop. The unique, tough and stable formulation has been designed to compost and break down residue to improve seed-to-soil contact, help reduce planter or tire damage from tough crop stalks and reverse nutrient tie-up in crop residue to provide more available nutrients. Bio Reverse helps you build a healthy soil biome for continued season-long composting.



## FEATURES & BENEFITS

- **Easy to handle and may be applied to field and residue using various application methods**
- **Formulated to be shelf-stable for two years or more**
- **Contains a powerful consortium of proprietary microbes that stay viable longer**
- **Designed to be applied on all crop residues and maximize residue breakdown**
- **Improves nutrient availability**
- **Enhances seedbed quality in the spring**



## FREQUENTLY ASKED QUESTIONS

- Q: When is best time to apply Bio Reverse to maximize decomposition of crop residues?**
- A: Apply Bio Reverse as soon as possible following harvest, to allow maximum residue decomposition.
- Q: Will the microbes in Bio Reverse survive the cold temperatures endured during the winter?**
- A: The microbial strains in Bio Reverse will survive the cold temperatures experienced in the winter months. The strains are cold weather-tolerant and will continue to be active until sustained below freezing temperatures are present. During the coldest months, the microbes will become dormant to survive any winter conditions. When the weather begins to warm, the microbes in Bio Reverse will become active again and continue colonizing the crop residue.
- Q: How can the microbes be applied to the field and residue?**
- A: The consortium of microbes in Bio Reverse are in a robust sporulated form that allows for the following application methods: broadcast with fall herbicides, mixed with liquid fertilizers, impregnated on dry fertilizers, included in pivot irrigation, or sprayed with any other carriers that may be applied in the spring or fall.

*See more Frequently Asked Questions on the next page.*

## FREQUENTLY ASKED QUESTIONS *(continued)*

**Q: How does Bio Reverse break down crop residue?**

A: Bio Reverse is a specially selected package of soil borne microbes chosen for their ability to break down the cellulose and lignin in plant tissues. The unique blend of microbes works together to support the production of enzymes needed to break down cell walls and compost residue. Bio Reverse is formulated with a significant volume of colony forming units (CFUs) to ensure excellent coverage for improved performance.

**Q: What other benefits would you expect from the composting of residue?**

A: When Bio Reverse is applied in the fall, expect better seedbeds the following spring due to improved residue breakdown. The application of Bio Reverse will provide better seed-to-soil contact, helping to improve consistency of seed depth in the field. Another key benefit is the recycling of nutrients from crop residues. Bio Reverse breaks down crop residues post-harvest, making nutrients more available the following season to meet crop needs.



In this photo, the corn stalks on the right were treated with 1 pt/acre of Bio Reverse in the fall post-harvest. The following spring, the stalks treated with Bio Reverse had more residue breakdown compared to the untreated check on the left.

### GUARANTEED ANALYSIS

Total Nitrogen (N)..... 5.0%  
 4.8%....Urea Nitrogen  
 0.2%....Ammoniacal Nitrogen  
 Available Phosphate (P<sub>2</sub>O<sub>5</sub>) ..... 5.0%  
 Soluble Potash (K<sub>2</sub>O)..... 5.0%  
 Derived from: urea, phosphoric acid, potassium hydroxide

### ALSO CONTAINS NON-PLANT FOOD INGREDIENTS

#### Guaranteed Analysis- Soil Amending Ingredients

##### ACTIVE INGREDIENTS

Bacillus cellulolyticus .....1.28 X 10<sup>8</sup> cfu/ml  
 Bacillus ligninophilus .....1.28 X 10<sup>8</sup> cfu/ml  
 Rhodospseudomonas palustris .....1.28 X 10<sup>8</sup> cfu/ml  
 Saccharomyces cerevisiae .....1.28 X 10<sup>8</sup> cfu/ml

##### INERT INGREDIENTS

Total Other Ingredients (from fertilizer material)....80%

### PHYSICAL PROPERTIES

pH..... 7.5  
 Specific Gravity..... 1.21 @ 68°F  
 Density ..... 10.1 lbs/gal  
 Salt Out ..... 2°F

## APPLICATION

Crop	Timing	Use Rate (per acre)	Minimum Carrier Rate Liquid (per acre)
All crop residues	Post-harvest, pre emergence	1 pint	20 gallons



#### FOR MORE INFORMATION

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