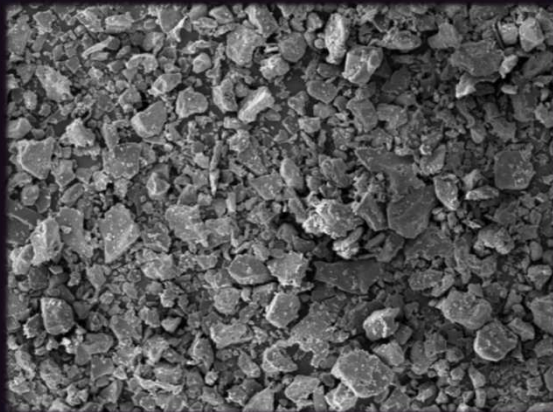
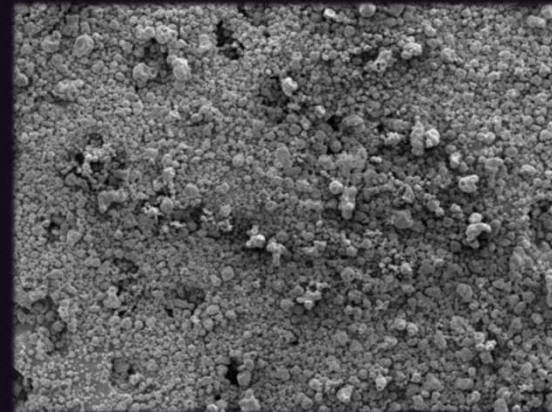


# Where Next-Generation Technology Delivers Results Today.

Traditional YCW 50X



ImmuStim™ 50X



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Bio-Ag Solutions is headquartered in Cheyenne, Wyoming, with regional manufacturing.  
Give us a call to find out more at (513) 280-1247.



Another Innovative Technology From:



## ABOUT Bio-AG SOLUTIONS LLC

At Bio-AG SOLUTIONS LLC, we are committed to advancing animal agriculture through science, innovation, and investment. With deep expertise in animal nutrition and a clear understanding of industry challenges, we strive to deliver solutions that enhance performance, sustainability, and profitability.

### Discover the Power of ImmuStim™

**ImmuStim™ has distinct advantages that sets it apart:**

- **Pure Bio-active Technology**

No carriers or fillers, ensuring maximum potency and purity.

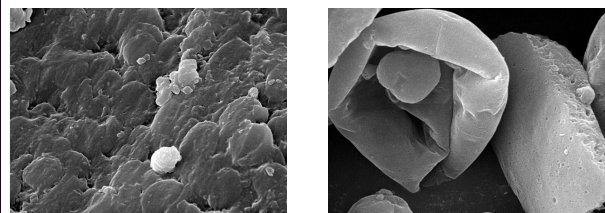
- **Enhanced Bio-efficiency**

Increased surface area and binding sites allowing for greater efficacy at a lower inclusion rates, making it more efficient and cost-effective.

- **Proprietary Enzymatic Treatment**

Unlocks the bioactive components, creating a more effective and consistent solution for animal nutrition.

ImmuStim™ is physically different from traditional yeast cell wall providing a consistent product in every batch.



Images 5000X

**ImmuStim™ – Unlock the Full Power of Yeast Cell Wall!**

## What Is ImmuStim™?

ImmuStim™ is a next-generation yeast innovation that overcomes the limitations of basic yeast cell walls by incorporating enzymatic technology to unlock their inherent potential to support the immune system and gut health.

### How it works:

- **Exposes key bioactive sites**  
breaks down bonds between mannans & β-glucans.
- **Increases solubility**  
higher bioavailability in the gut.
- **Boosts pathogen binding**  
stronger binding effect against *E.coli* & *Salmonella*.
- **Enhances immune response**  
better recognition by innate immune receptors. improves bioavailability of mannans & β-glucans.
- **Improves consistency**  
standardized performance across batches.
- **Lowers inclusion rates**  
effective at ~50% the dose of untreated YCW.

#### Benefits of Mannans & β-glucans:

- **Reduction of Pathogenic Bacteria:** Helps in maintaining a healthy gut flora
- **Growth of Beneficial Bacteria:** Supports overall gut health and immunity

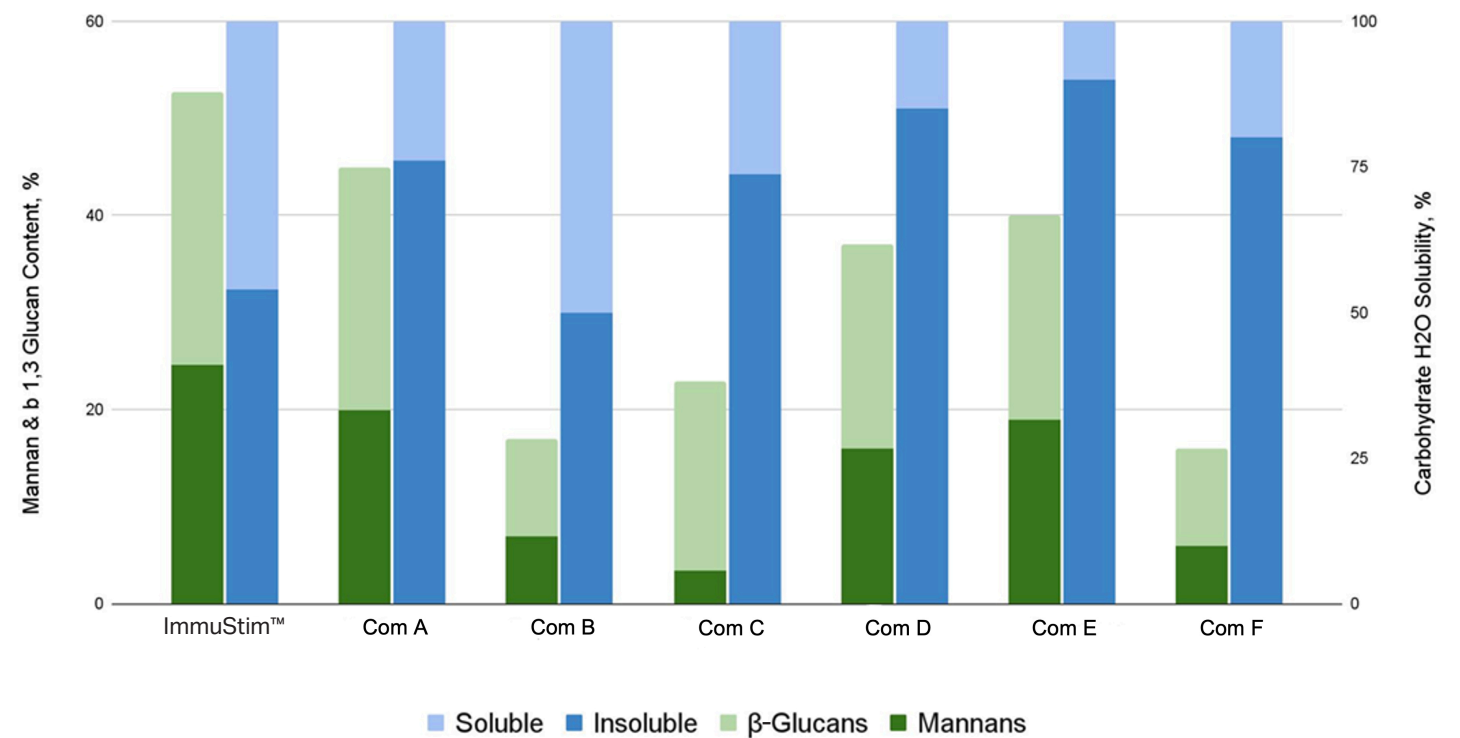
#### What makes ImmuStim™ different?

The enzymatic treatment of ImmuStim™ breaks down the bonds between mannans & β-glucans and increases the active site surface area of the cell wall compared to traditional products. This enhanced surface area allows ImmuStim™ to more effectively bind harmful bacteria such as Salmonella and E. coli, without requiring higher feeding rates or compromising solubility.

Research conducted at the University of Ghent, Belgium, has further demonstrated that ImmuStim™ exhibits a high affinity for a broad spectrum of mycotoxins, including Aflatoxin, Fusarium, Zearalenone, DON, and Fumonisin. This adsorption capacity plays a crucial role in ensuring both safety and optimal health in dairy nutrition. With its unique properties, ImmuStim™ stands out as a reliable and effective solution for supporting animal health and performance.

## Solubility & Bio-Availability of YCW Products

The Bio-Availability differences is very clear. More efficient vs more expensive with less performance.



### Effects of the Enzymatic Treatment on Important Bio-Chemical Groups

Yeast cell walls (YCW) are rich in β-glucans and mannan oligosaccharides (MOS), known for their role in gut health, pathogen binding, and immune modulation. Traditional yeast cell walls are effective but limited by low solubility and variable activity.

Enzymatic treatment unlocks these bioactive components, creating a more potent and consistent solution for animal nutrition.

Technical Comparison:

Feature	Untreated (conventional) YCW	Enzymatically Treated (ImmuStim™) YCW
Structure	Intact, rigid; actives bound	Hydrolyzed; active exposed
Solubility	Low	High
Pathogen Binding	Limited	Enhanced
Immune Modulations	Strong	Strong
Consistency	Variable	Standardized
Inclusion Rate	8-12 g /hd/ day	4-6 g /hd/ day
Overall Efficacy	Moderate	High