

Specification  
Mannanase 50,000U

# ASB MaxMannan HT

(Feed Grade Mannanase Enzyme)

Break Mannans. Unlock Nutrition. Boost Performance.

## ASB MaxMannan HT – Unlock Feed Potential:

- ✓ Advanced  $\beta$ -1,4-Mannanase breaks down anti-nutritional mannans, enhancing nutrient digestibility.
- ✓ Multi-enzyme action supports fiber digestion, gut health, and beneficial microbiota.
- ✓ Boosts growth performance, feed efficiency, and overall poultry productivity.
- ✓ Thermostable and research-backed for consistent results in poultry.

ASB MaxMannan HT is a highly thermostable  $\beta$ -mannanase enzyme derived from a unique *Trichoderma* strain that breaks down anti-nutritional mannans in plant-based feeds. It unlocks nutrients, improves digestibility, enhances gut health, and supports better growth performance and feed efficiency in poultry.



**ASB Enterprises**  
"The Best Additives for The Best Feed: Add to Make Difference"



ANHUI ZHENGLANG JIUZHOU BIOLOGICAL  
TECHNOLOGY CO.,LTD

## The Challenge

Non-starch polysaccharides (NSPs) such as cellulose, hemicellulose, and pectins significantly affect nutrient digestion and gut function in poultry. Among NSPs, hemicelluloses—including mannan, xylan, arabinan, and galactan are major components of cereal and plant-based feed ingredients. After xyans, mannans are the second most abundant hemicellulosic polysaccharides in poultry diets, making mannanases the second most important NSP-degrading enzymes after xylanases.

$\beta$ -mannans are highly prevalent in ingredients such as soybean meal, guar meal, copra meal, palm kernel meal, and sesame meal, where they act as strong anti-nutritional factors. Soluble galactomannans increase intestinal digesta viscosity, slowing nutrient passage and reducing enzyme efficiency and nutrient absorption. This results in poor digestibility of fat, protein, starch, and energy, leading to higher water intake, sticky droppings, and reduced growth performance in birds.

| Estimated soluble B-Mannan content for various feed ingredients |                                             |           |       |       |
|-----------------------------------------------------------------|---------------------------------------------|-----------|-------|-------|
| S.No                                                            | Ingredient name                             | Average % | Min % | Max % |
| 1                                                               | Corn (maize)                                | 0.13      | 0.05  | 0.22  |
| 2                                                               | Corn gluten meal                            | 0.17      | 0.1   | 0.24  |
| 3                                                               | DDGS, corn                                  | 0.57      | 0.23  | 1.09  |
| 4                                                               | Guar meal 36–42% CP                         | 6.68      | 4.67  | 8.74  |
| 5                                                               | Guar meal >47% CP                           | 2.69      | 2     | 3.57  |
| 6                                                               | Rapeseed, whole                             | 0.08      | 0.07  | 0.09  |
| 7                                                               | Sorghum                                     | 0.16      | 0.13  | 0.18  |
| 8                                                               | Soya hulls                                  | 6.67      | 6.43  | 6.91  |
| 9                                                               | Soybean meal 44% CP (non-dehulled)          | 0.79      | 0.38  | 1.3   |
| 10                                                              | Soybean meal 48% CP (dehulled)              | 0.56      | 0.09  | 1     |
| 11                                                              | Soybean meal, Full Fat (non-dehulled)       | 0.76      | 0.42  | 1.05  |
| 12                                                              | Soybean meal, Full Fat (dehulled)           | 0.44      | 0.43  | 0.44  |
| 13                                                              | Soybean meal, fermented                     | 0.43      | 0.23  | 0.59  |
| 14                                                              | Sunflower meal $\leq$ 32% CP (non-dehulled) | 0.62      | 0.42  | 0.9   |
| 15                                                              | Sunflower meal >32% CP (dehulled)           | 0.62      | 0.53  | 0.69  |
| 16                                                              | Wheat                                       | 0.25      | 0.08  | 0.42  |
| 17                                                              | Wheat bran                                  | 0.25      | 0.21  | 0.34  |

Courtesy of Elanco

## The Solution:

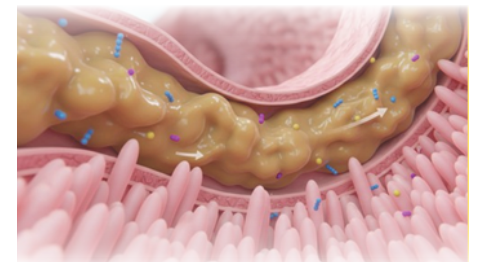
ASB MaxMannan HT is a  $\beta$ -1,4-mannanase-based hemicellulase that breaks down anti-nutritional mannans in plant feed ingredients. By releasing functional manno-oligosaccharides, it improves nutrient availability, supports gut health, and enhances growth performance. Highly effective in soybean meal, guar, and other mannan-rich feeds, it improves fiber digestibility, feed conversion, and overall efficiency in non-ruminant animals.



## MaxMannan HT:

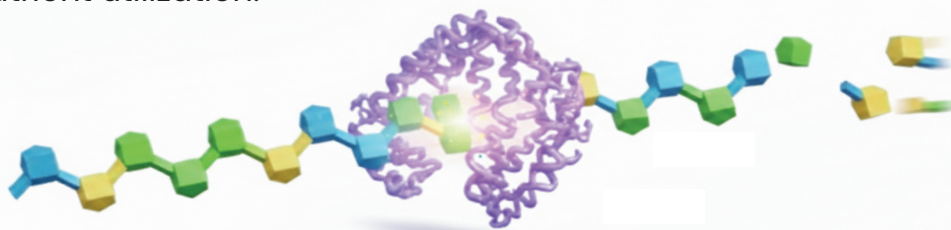
is an enzymatic preparation produced through fermentation by *Trichoderma* species. Its primary activity is mannanase, and it also contains  $\beta$ -glucanase, xylanase, and cellulase activities. These enzymes work synergistically to efficiently digest plant-based feed materials.

**MaxMannan HT** is suitable for soybean meal and other mannan-containing feed ingredients. It effectively improves the nutritional value of soybeans, coconut meal, and other grains by enhancing the digestibility of fibrous components. Additionally, it improves animal health and feed conversion efficiency in non-ruminants and reduces dry matter excretion in animal manure.



## Mode of Action:

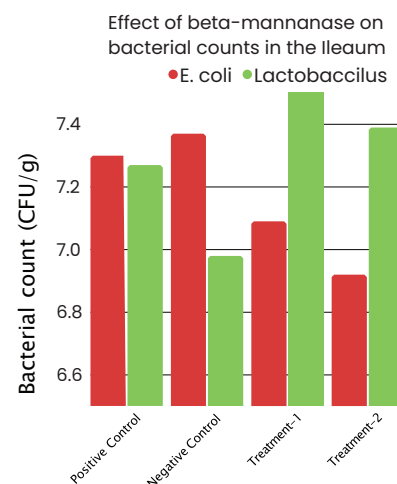
$\beta$ -Mannanase supplementation effectively counteracts the adverse effects of viscous galactomannans by hydrolyzing mannans, reducing intestinal viscosity, improving digesta flow, and enhancing nutrient utilization.



**MANNANASE ENZYME**  
**Hydrolyzing Mannan**

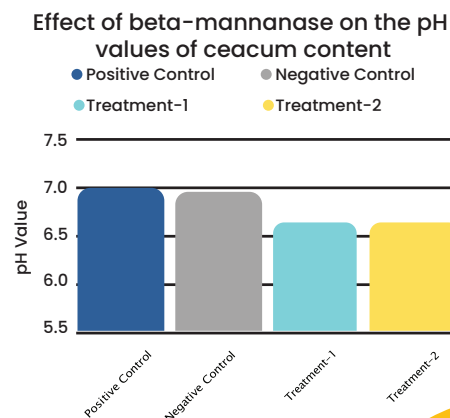
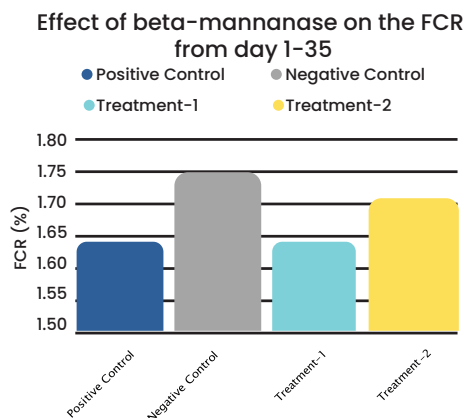
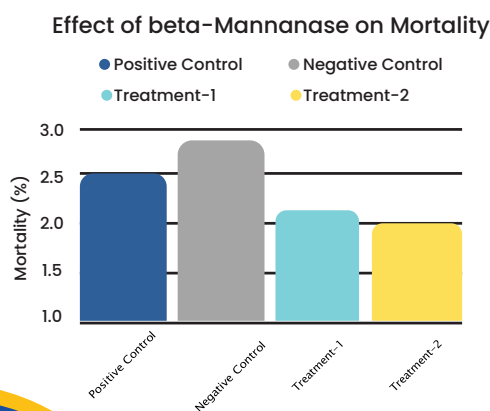
## Suppression of the proliferation of harmful microorganisms in the gut:

$\beta$ -Mannanase hydrolyzes  $\beta$ -mannan-rich feed ingredients (such as guar, copra, and palm kernel meal) to release  $\beta$ -1,4-manno- oligosaccharides (MOS) and D-mannose, which function as anti- adhesive and prebiotic molecules. These compounds inhibit pathogen attachment to the intestinal epithelium by saturating mannose-specific lectin receptors, thereby reducing *Salmonella* and *E. coli* colonization and shedding, while selectively promoting beneficial microbiota (*Lactobacillus*, *Bifidobacterium*). This results in improved gut health, microbial balance, and nutrient utilization.



## Effect on Immunity:

$\beta$ -Mannans present in soybean meal can act as pathogen-associated molecular pattern (PAMP) analogues in poultry, triggering innate immune activation characterized by increased macrophage and monocyte activity, elevated cytokine production, and nitric oxide synthesis, which imposes a substantial metabolic cost and depresses growth performance. This unnecessary immune stimulation diverts dietary energy away from productive functions; however,  $\beta$ -mannanase supplementation reduces the immune challenge by degrading dietary  $\beta$ -mannans, leading to improved energy utilization, reduced relative weights of immune organs, lower serum immunoglobulin levels, and decreased acute-phase protein responses in broilers and laying hens.



## Conclusion

- The supplementation of  $\beta$ -mannanase tended to decrease the E. coli colonies in the contents of ileum and cecum, whereas tended to increase the lactobacillus colonies in the ileal content
- $\beta$ -mannanase tended to decrease the pH value of the intestinal contents and kill the harmful bacteria.
- The Supplementation of  $\beta$ -mannanase to the low nutrient level diets could improve growth performance and feed efficiency of chickens.

### Key Features of ASB MaxMannan HT:

- ✓ **Powerful Mannan Breakdown:** Advanced  $\beta$ -1,4-mannanase efficiently hydrolyzes mannans in soybean meal, copra, and other plant feeds.
- ✓ **Scientifically Proven & Thermostable:** Designed for consistent performance even under high-temperature feed processing.
- ✓ **Surplus Activity:** Includes  $\beta$ -glucanase, xylanase, and cellulase to maximize fiber digestion and nutrient release.
- ✓ **Unlocks Nutrients & Reduces Anti-Nutritional Effects:** Enhances digestibility and nutrient availability for better growth.
- ✓ **Supports Gut Health:** Generates manno-oligosaccharides that promote beneficial gut microbiota and intestinal well-being.
- ✓ **Boosts Performance & Feed Efficiency:** Improves weight gain, feed conversion, and overall poultry productivity.

### اے ایس بی میکس مینن ایچ ٹی

نان سٹارچ پولی سیکرائیڈز (NSP) جیسے سیلولوز، ہیملی سیلولوز اور پیکٹن خوراک کے ہاضمے اور آنتوں کی کارکردگی پر منفی اثر ڈالتے ہیں۔ ہیملی سیلولوز میں مینن، زائلن اور پیٹاگلکون شامل ہوتے ہیں، جن میں مینن مقدار کے لحاظ سے زائلن کے بعد دوسرے نمبر پر ہے۔ B-مینن اسی وجہ سے زائلنیز کے بعد ہیملی سیلولوز کو توڑنے والا دوسرا سب سے اہم انزائم ہے۔ یہ مینن عام طور پر سویا بین میل، سن فلاور میل اور گوار میل میں پایا جاتا ہے اور یہ پولٹری خوراک میں ایک اہم اینٹی نیوٹریشنل فیکٹر ہے جو غذائی اجزاء کے استعمال کو کم کرتا ہے۔

### Recommended Dosage:

50-100 gram/ton of feed  
(Depending on the substrate availability)

### Standard package:

25 kg Bag

### طریقہ استعمال:

100-50 گرام فی ٹن فیڈ  
(Substrate کی دستیابی کے مطابق)

### پیکنگ:

25 کلو بیگ



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