

Effective protection for optimal growth, even under mycotoxin challenge.

## IMPACT OF MYCOTOXINS IN BROILER PRODUCTION

**Gut Health:** Mycotoxins damage the digestive tract, reducing the absorption of essential nutrients.

**Immune System:** Mycotoxins suppress the bird's natural defenses, increasing susceptibility to infections.

**Growth and Feed Efficiency:** Mycotoxins impair growth and decrease feed conversion efficiency.

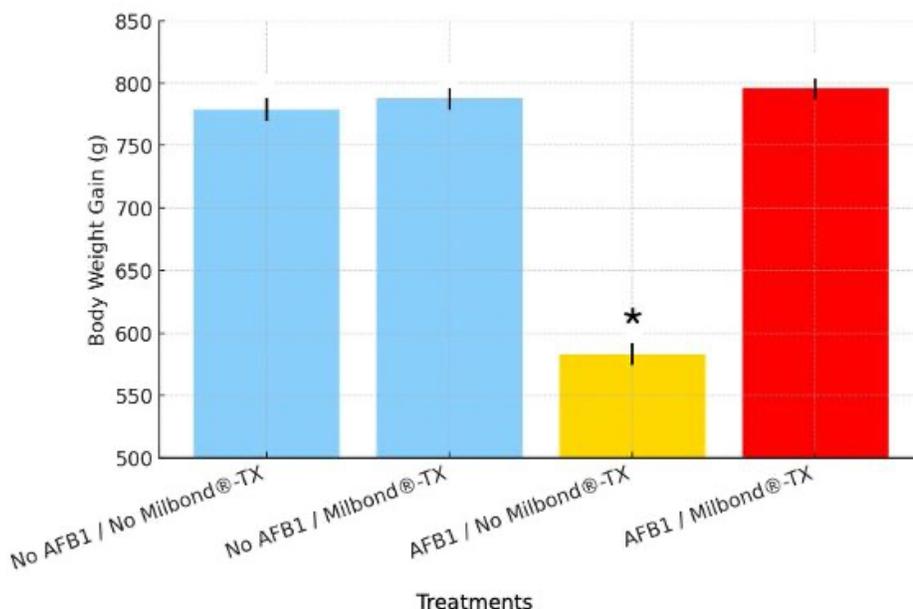
## EFFECTIVE PROTECTION AGAINST AFLATOXINS IN BROILER CHICKEN KEY FINDINGS:

**Impact of Aflatoxins:** Broilers exposed to 4 mg AFB1/kg diet AFB1 experienced a severe reduction in body weight gain.

**Effect of MILBOND<sup>®</sup> - TX:** Supplementation with MILBOND<sup>®</sup> - TX allowed broilers to reach **796 g**, surpassing the weight of non-exposed birds.

## CONCLUSION:

**MILBOND<sup>®</sup> - TX** maintains optimal performance under stress conditions, protecting productivity from mycotoxin-related damage.



Effect of MILBOND<sup>®</sup>-TX on body weight gain in broilers exposed to AFB1 Bars with different letters are significantly different ( $P < 0.001$ ). Study conducted with MILBOND<sup>®</sup>-TX at 1% inclusion. Commercial usage is typically 0.25%, depending on mycotoxin challenge level. Safety studies have demonstrated that MILBOND<sup>®</sup>-TX is safe even at higher inclusion levels. Graph based on published data (Ledoux et al., 1998).

### Citation:

Osuna, O. (2015) Ledoux, David & Rottinghaus, George & Alonso-Debolt, M. (1999). Efficacy of hydrated sodium calcium aluminosilicate to ameliorate the toxic effects of aflatoxin in broiler chicks. *Poultry science*. 78, 204-10. 10.1093/ps/78.2.204.



### CONTACT US:

info@milwhite.com  
www.milwhite.com

4401 S. Pinemont Dr. STE 216  
Houston TX 77041

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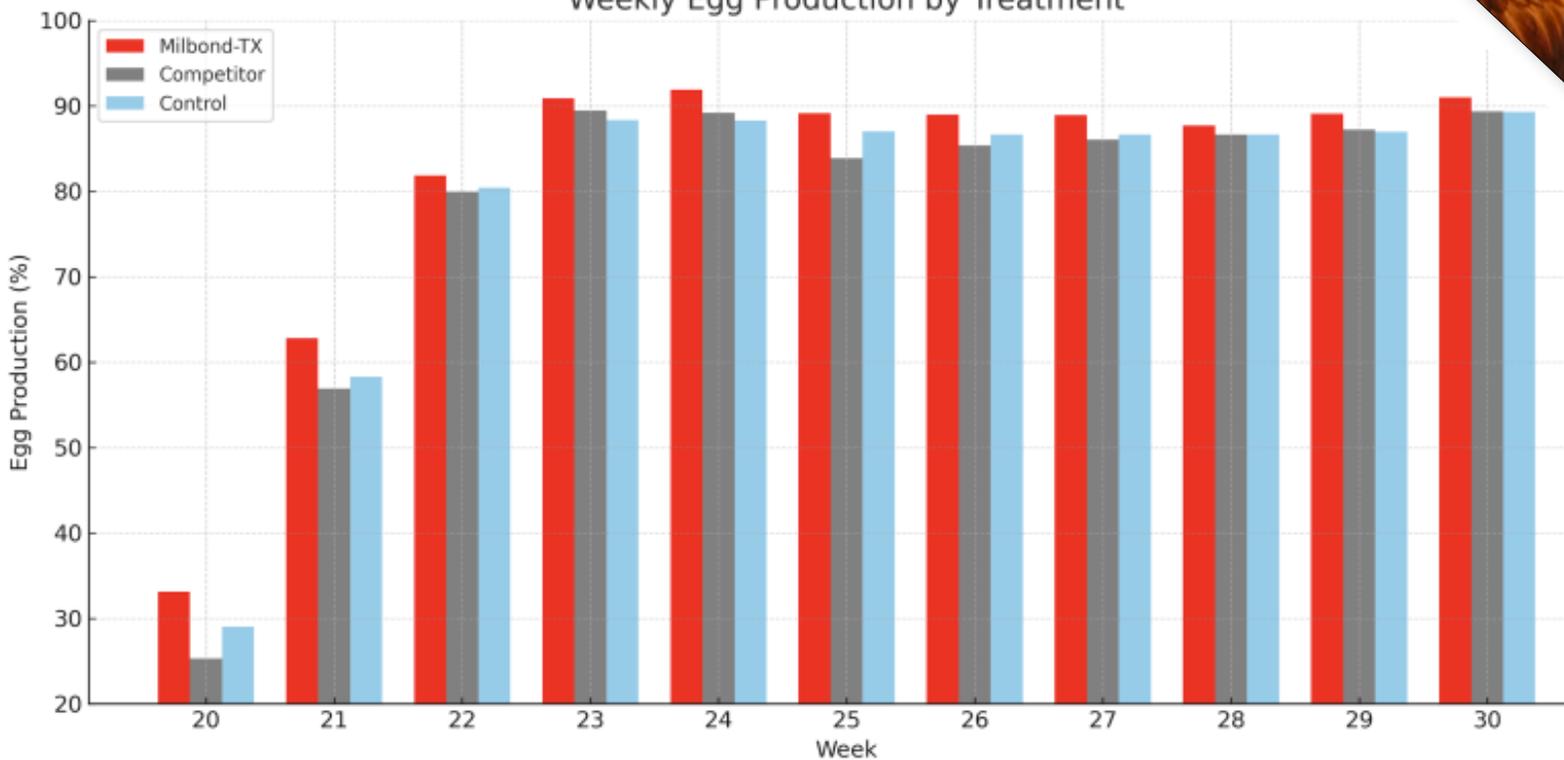
DAILY PROTECTION FOR EXTENDING PRODUCTION LIFE.

## HOW MILBOND<sup>®</sup>-TX HELPS:

MILBOND<sup>®</sup>-TX is a proven mycotoxin adsorbent that supports gut health and improves overall productivity. In layers, it has been shown to:

- Improve feed conversion, reducing feed cost per dozen eggs
- Support higher weekly egg production compared to control and competitor products

Weekly Egg Production by Treatment



### MILBOND<sup>®</sup>-TX Optimizes Feed Efficiency in Laying Hens (Weeks 20–30)

MILBOND<sup>®</sup>-TX consistently maintains higher weekly egg production compared to control and competitor groups, supporting peak performance in layers.

**Citation:**

González Hernández, J., & Osuna, O. (2001, September 23). Cost benefit analysis for Milbond TX, used in laying hen diets: Final report of the study (Report No. A-0794-001). Pharmacia & Upjohn Animal Health.

MILBOND<sup>®</sup>-TX provides confidence in layer performance—even in the presence of mycotoxins.



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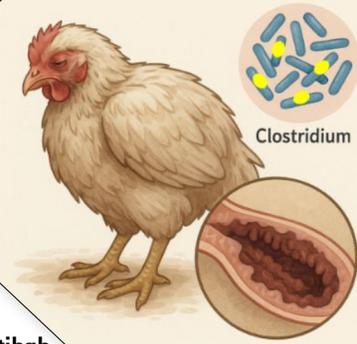
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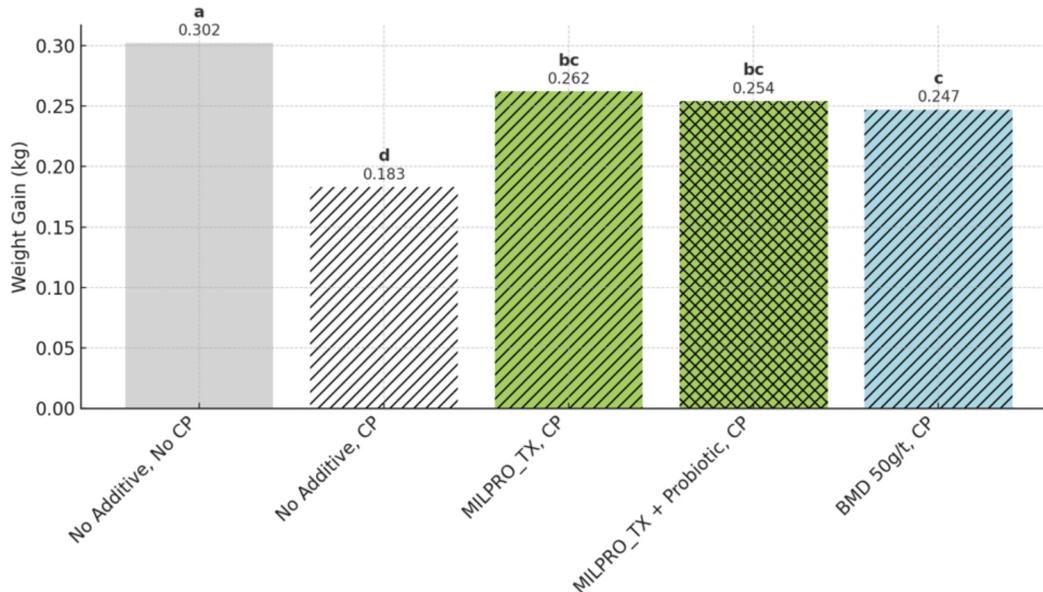
## A Natural Strategy to Reduce Antibiotic Dependence

Necrotic enteritis (NE), caused by *Clostridium perfringens*, affects broiler chickens between 2 weeks and 6 months of age. It causes up to \$6 billion in global losses annually, mainly due to poor performance, higher mortality (up to 1% daily), treatment costs, and carcass downgrades.

In humans, *C. perfringens* is the third leading cause of foodborne illness, after *Salmonella* and *Campylobacter* (Fatimah et al., 2022).



### MILPRO<sup>®</sup>-TX: Superior Performance in Weight Gain Without Antibiotics



In trials, MILPRO<sup>®</sup>-TX delivered higher daily weight gain compared to antibiotic treatments (Gentamicin, BMD 50 g/ton) and probiotic products (Osuna, 2015).

### MILPRO<sup>®</sup>-TX: Dry litter. Healthy birds. Proven results.

- Outperforms antibiotics and probiotics in daily weight gain under *Clostridium perfringens* challenge.
- Reduces mortality and intestinal lesions caused by NE, while preserving gut integrity.
- Keeps litter dry, reducing bacterial proliferation and minimizing *Clostridium* shedding and recirculation.
- Prevents NE outbreaks naturally, improving gut health and overall flock welfare.
- Supports antibiotic-free production, boosting performance and sustainability of chicken (Final Report, Study No. Milwhite NE 15-1). Southern Poultry Research, Inc.

#### Citation:

- Osuna, O. (2015). Comparative efficacy of Milwhite products to the ACP BMD administered in the feed for the control of necrotic enteritis caused by *Clostridium perfringens* in broiler chicken (Final Report, Study No. Milwhite NE 15-1). Southern Poultry Research, Inc.
- Fancher, C. A., Zhang, L., Kiess, A. S., Adhikari, P. A., Dinh, T. T. N., & Sukumaran, A. T. (2020). Avian Pathogenic *Escherichia coli* and *Clostridium perfringens*: Challenges in No Antibiotics Ever Broiler Production and Potential Solutions. *Microorganisms*, 8(10), 1533. <https://doi.org/10.3390/microorganisms8101533>
- Line, J.E.. (2006). Influence of relative humidity on transmission of *Campylobacter jejuni* in broiler chickens. *Poultry science*. 85. 1145-50. 10.1093/ps/85.7.1145



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## Poultry's First Line of Defense for Gut Integrity and Long-Term Vitality



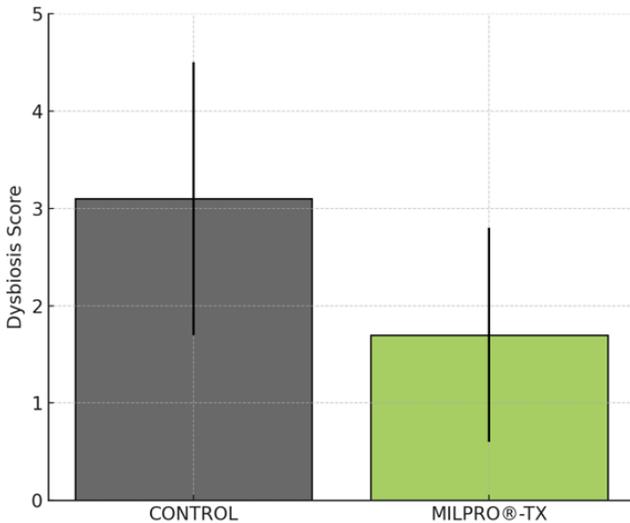
**MILPRO<sup>®</sup>-TX** First MilPro TX is an activated proprietary, all-natural blend of feed additives formulated to support optimal gut health and provide comprehensive detoxification across the gastrointestinal tract. Engineered for daily use, MilPro promotes resilience and longevity in poultry by enhancing internal wellness and environmental cleanliness.

### Key Benefits:

- **Comprehensive Gut Support:** Maintains daily gastrointestinal function and integrity.
- **Mycotoxin Protection:** Demonstrated efficacy in adsorbing a wide spectrum of harmful mycotoxins.
- **Pathogen Defense:** Proven effectiveness against bacteria, viruses, and endotoxins.
- **Ammonia Control:** Binds ammonia both within the animal and in its surrounding environment.
- **Advanced Detoxification:** Targets and neutralizes heavy metals, nitrates, herbicides, radiation, and microplastics.

**Reducing toxic interference and promoting a cleaner living environment, MilPro TX supports overall animal wellness and enhances productivity.**

### MILPRO<sup>®</sup>-TX Improves Microbiota Balance and Intestinal Health



*MILPRO<sup>®</sup>-TX significantly reduced the dysbiosis score in laying hens, promoting a healthier gut microbiota, better nutrient absorption, and reduced need for antibiotics. An effective solution to enhance gut health and support sustainable productivity.*

### Species-Specific Effects and Observations

#### Poultry:

- Incidence of dirty eggs decreased from 1.25% to 0.31%.
- Yolk index increased, suggesting improved egg quality.
- Fecal moisture content was lower.
- Dysbiosis scores improved, and birds demonstrated greater protection when exposed to *E. maxima*, *C. perfringens*, *E. coli*, and *Salmonella*.

### Use & Dosage (General Guidelines)

Species	Dosage / Guideline	Frequency / Notes
Poultry & Swine		Mixed into ration

*Stable in feed and water; no withdrawal; 5-year shelf life.*

#### Citation:

Elias Salvador, T. (2022). Evaluation of MilPro-TX<sup>®</sup> on productive response, economic performance, and egg quality of laying hens [Final report of experimental trial]. National University 'San Luis Gonzaga,' Faculty of Veterinary Medicine and Animal Science.



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