



SafMannan

Predictable performance



Safmannan®

Advanced management in the broiler industry

phileo-lesaffre.com



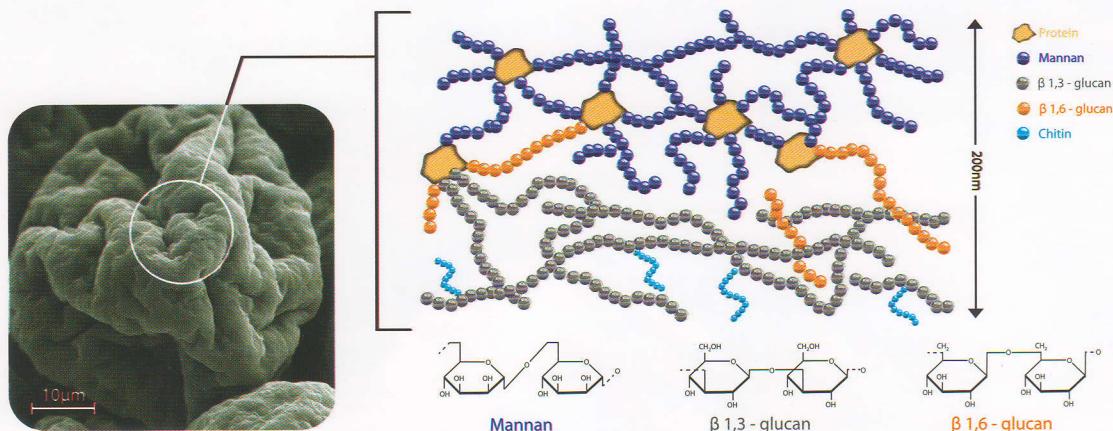
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LESAFFRE ANIMAL CARE

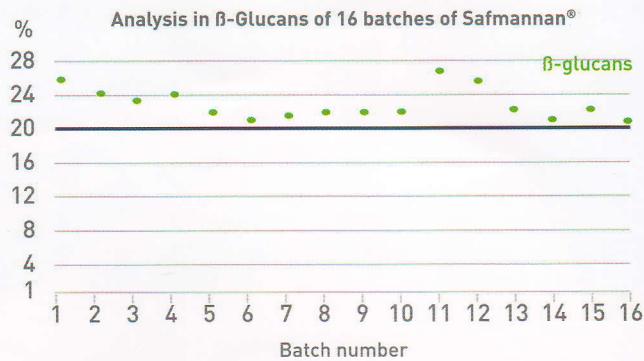
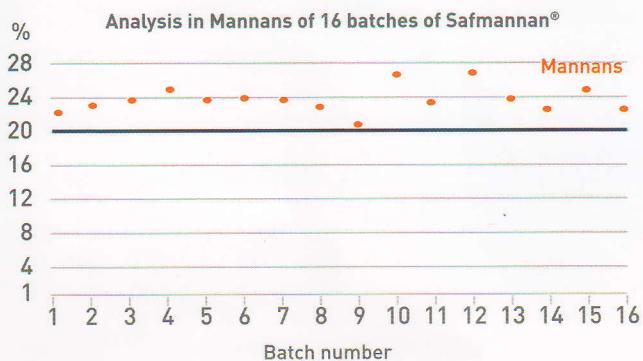
SafMannan

Premium yeast fraction

Safmannan® is a premium yeast fraction rich in mannan-oligosaccharides (MOS) and β -Glucans (1,3 and 1,6). **Safmannan®** is obtained by autolysis of *Saccharomyces cerevisiae* proprietary bakery strains. Batch-to-batch consistency and high concentrations of active ingredients enable **Safmannan®** to achieve repeatable excellent performance.



Safmannan® meets the highest standards of ingredients and consistency, yielding significantly better benefits than other yeast cell wall products.



Yeast cell wall products

Origin and Process

BY-PRODUCT

- Non selected yeast strains
- Yeast cell wall come from trading

Composition

NON-UNIFORM PRODUCTS

- No guarantee of component composition
- Basic standard feed analysis: crude protein from 10 to 50%



Safmannan®

SELECTED FRACTIONS

- Exclusive yeast strains
- Full manufacturing process controlled

BATCH-TO-BATCH CONSISTENCY

- Consistent concentration of Mannans $\geq 20\%$
- Consistent concentration of β -Glucans $\geq 20\%$

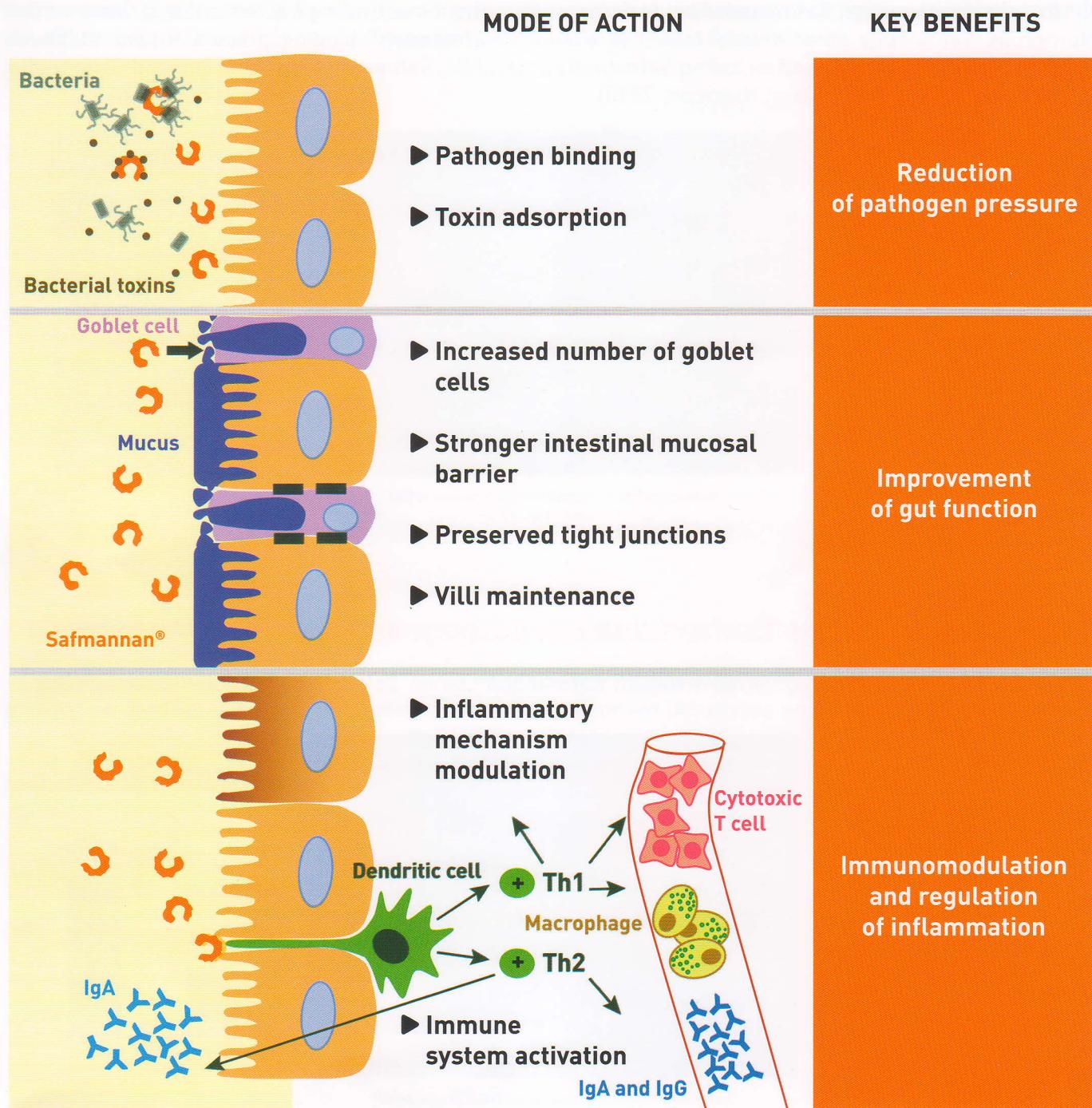


SafMannan

Mode of action and key benefits

The benefits of **Safmannan®** have been demonstrated worldwide by recognised independent institutions. The main effects of **Safmannan®** in poultry are indicated below. **Safmannan®** helps to:

- Reduce pathogen pressure
- Promote gut function
- Support natural defences



SafMannan

Pathogen pressure reduction

Thanks to its high mannan-oligosaccharides content, **Safmannan®** is well known for its ability to bind a broad spectrum of major pathogens.

- **Safmannan® binds three of the most significant *Salmonella* serovars**

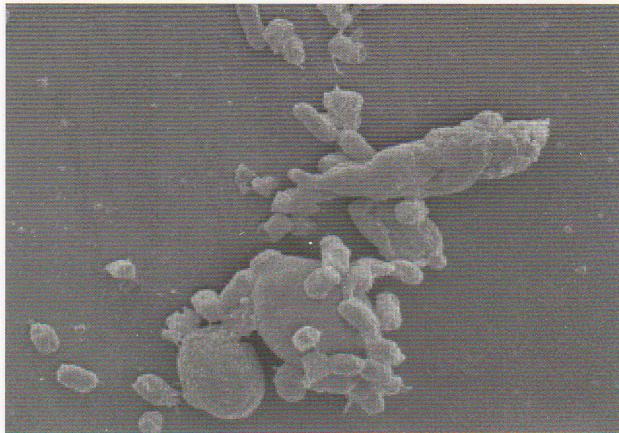
In vitro studies show that **Safmannan®** binds *Salmonella* without inactivating *Lactobacillus* strains. Numerous *Salmonella* strains were tested to evaluate **Safmannan®** binding properties and 81.3% of *Salmonella* strains were bound including *Salmonella Enteritidis*, *Salmonella Typhimurium* and *Salmonella Infantis* (Development of Animal Nutrition, 2010).



Safmannan® binds *Salmonella* (MEB picture x6500)
Posadas et al., 2014

- **Safmannan® binds *Escherichia coli* pathogens**

Of the various *Escherichia coli* strains tested, **Safmannan®** binds *E. coli* serogroup 02 (Development of Animal Nutrition, 2010).



Safmannan® binds *Escherichia coli* (MEB picture x6500)
Posadas et al., 2014

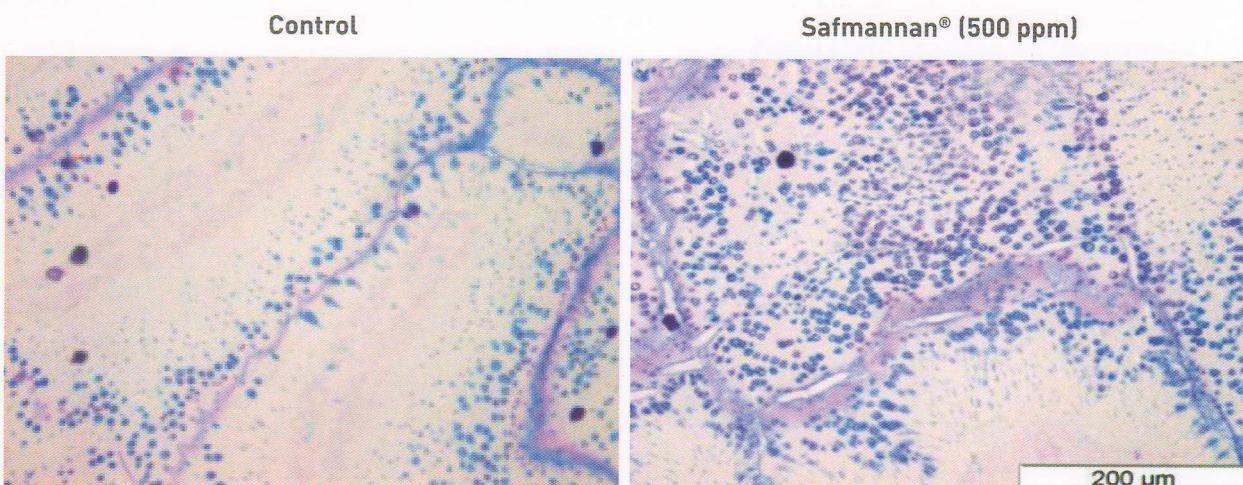
SafMannan

Gut function improvement

Safmannan® is also recognised for its contribution to improving gut morphology and integrity. As a result, animals absorb nutrients more readily and have greater resistance to challenging environmental conditions.

- **Safmannan® aids mucus secretion by increasing goblet cell numbers**

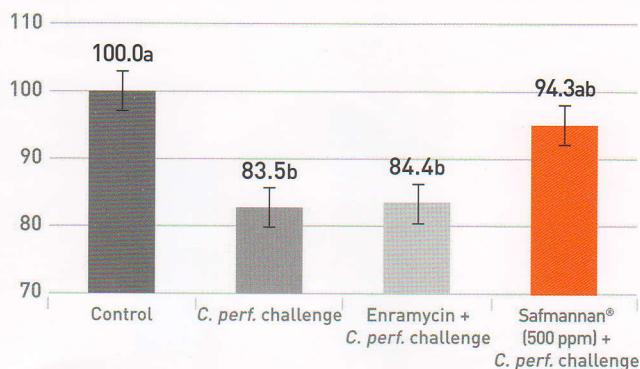
Safmannan® contributes to an increase in goblet cell numbers, thereby promoting mucus secretion and strengthening the intestinal mucosal barrier against pathogens ($p < 0.05$) (Morales *et al.*, 2010).



- **Safmannan® helps preserve gut development in challenging conditions**

A recent study in broilers subjected to *Clostridium perfringens* challenge proved that **Safmannan®** maintained ileal villus height compared to enramycin treatment (Abudabos and Yehia, 2013).

Ileal villus height in % of control



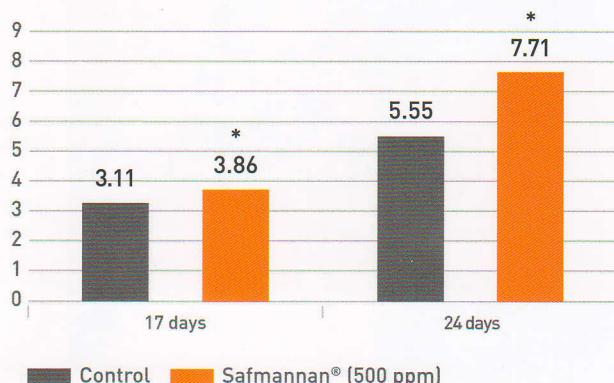
Immunomodulation and regulation of inflammation

Feeding **Safmannan®** helps the animals' immune system become more reactive to challenge. Birds deal more efficiently with challenging conditions such as infections or heat stress (Świątkiewicz *et al.*, 2014).

• **Safmannan®** enhances humoral immune response to challenges

This trial demonstrated that **Safmannan®** significantly increased antibody secretion in neonatal chicks, vaccinated at 10 days with a live vaccine against Newcastle disease virus (Gómez-Verduzco *et al.*, 2009).

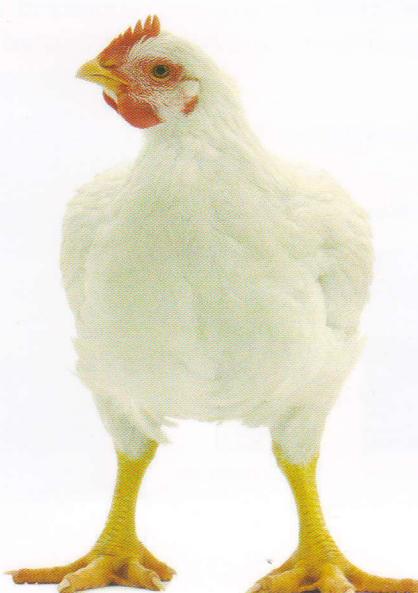
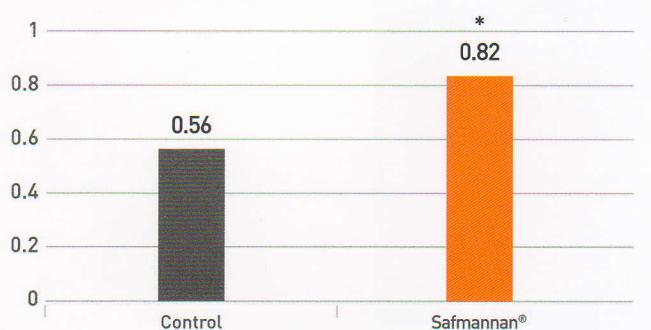
Effect of **Safmannan®** on antibody titers (log2) against NDV (HAI methodology)



• **Safmannan®** improves cell-mediated immune response to disease

This study underlined **Safmannan®** ability to enhance the cell-mediated immune stage in birds, by measuring the basophilic hypersensitivity response of neonatal chicks vaccinated against Newcastle disease virus (Gómez-Verduzco *et al.*, 2009).

Effect of **Safmannan®** on basophilic hypersensitivity at 21 days (in mm)

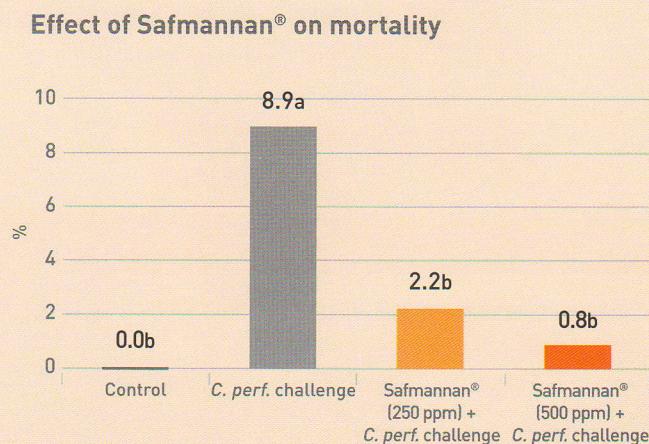
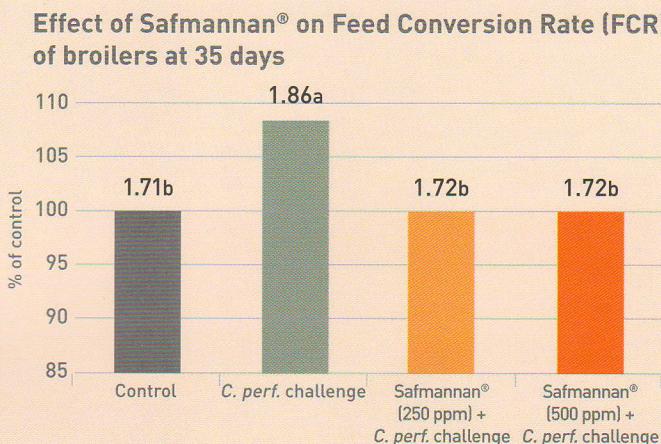


Predictable performance

Safmannan® binds pathogens, helps improve gut health and modulates the immune system in poultry. The effects of yeast fraction are known to improve broiler performance in challenging conditions (Świątkiewicz et al., 2014).

• Effect of **Safmannan®** in broilers subjected to *Clostridium* challenge

This trial was conducted at Southern Poultry Research Inc., in 1,600 male Cobb broilers. Broilers were challenged with coccidia, followed by a three-day inoculation of *Clostridium perfringens*. **Safmannan®** significantly reduced mortality and necrotic lesions (data on file, 2008).

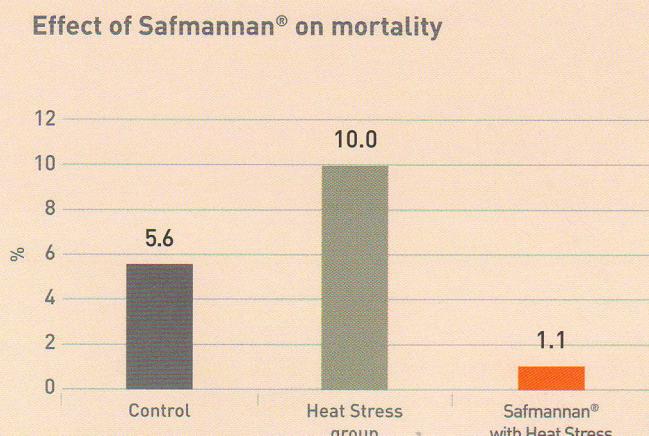
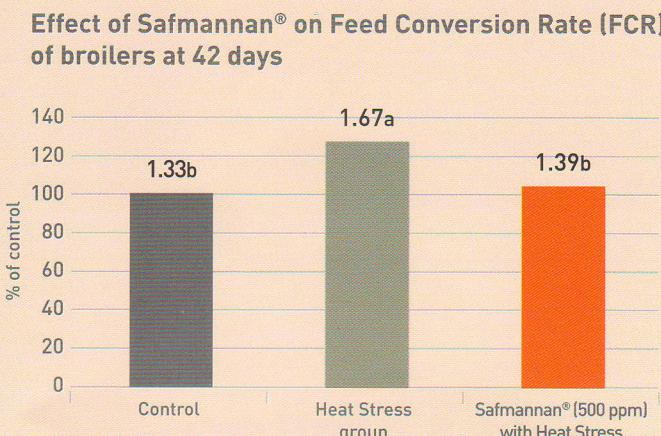


• Effect of **Safmannan®** in broilers subjected to chronic heat stress

This trial was conducted in 270 one-day-old broilers (Ross 708, mixed sex).

The **Safmannan®** group and Heat Stress group were subjected to chronic heat stress at $35 \pm 2^\circ\text{C}$ ($95.0 \pm 3.6^\circ\text{F}$) for 42 days. The temperature of Control group was set at $35 \pm 2^\circ\text{C}$ ($95.0 \pm 3.6^\circ\text{F}$) at day 1 and was decreased by 3°C (5.4°F) per week until it reached $26 \pm 2^\circ\text{C}$ ($78.8 \pm 3.6^\circ\text{F}$).

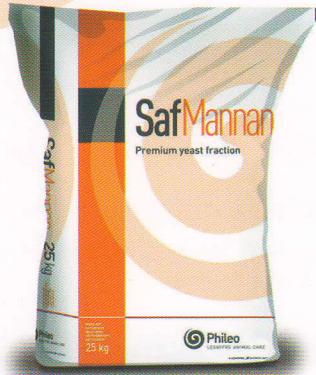
Safmannan® significantly improved growth performance and reduced mortality (Sohail et al., 2012).





SafMannan

Predictable performance



- ✓ Support natural defences
- ✓ Reduce pathogen pressure
- ✓ Promote gut function

↗ Resistance ↗ Performance

Starter

Broilers

125 to 250 ppm*

Grower

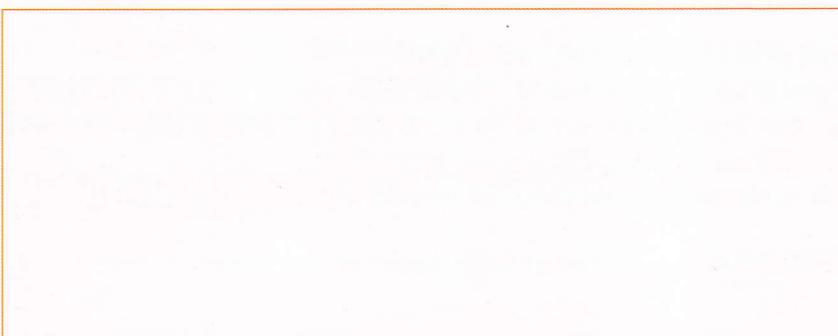
250 to 500 ppm

Finisher

125 to 250 ppm

*For optimum growth and development of your broilers, please respect the maximum incorporation rate of 250 ppm in starter diet.

For any questions, please contact your local sales representative.



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