

Sustainability and poultry production: an inside job

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Summary

Probiotics are an important consideration for animal health and nutrition and play a role in greenhouse gas emissions in poultry production. A commercial *Bacillus licheniformis* (B-Act® supplied by Huvepharma®, Belgium), lowers the ecological footprint of commercial poultry production, by delivering positive results in terms of bird health, confirmed by extensive research.

Introduction

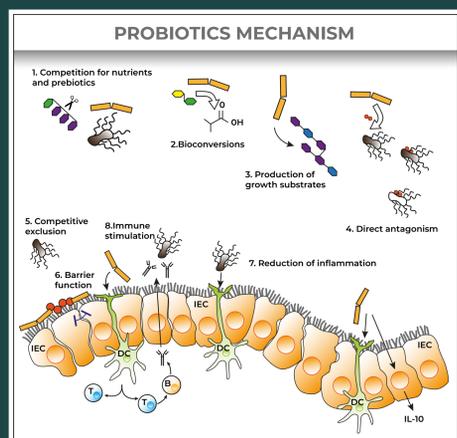
Meat and eggs, from poultry production, account for 8% of greenhouse gas emissions from the agriculture (livestock) sector, according to the Food and Agriculture Organization of the United Nations (Animal Production and Health Division). Whilst poultry production has a lower average emission intensity compared to other protein sources, the impact on the environment need to be considered throughout the production cycle. The sector's scale and rate of growth require reductions in emission intensity for environmental sustainability in the long term.

Factors which influence emission intensity are varied and differ depending on the species (layer or broiler), housing and production system and geographical region in question.

Some of the key factors are Feed Conversion Ratio (FCR), impact on Land Use Change (LUC), Animal Nutrition and Energy Use, all of which can be influenced by the inclusion of probiotics.

Method

Gut health is undeniably linked to health and welfare. The importance of a balanced and robust gut microbiota cannot be understated. Probiotics are viable micro-organisms which confer health benefits to the host by impacting the gut. Their mode of action is varied and diverse, providing a range of benefits.



Results

Competitive exclusion

Certain probiotic strains can outcompete undesirable bacteria for nutrients and space, preventing the colonisation of harmful bacteria. The *Bacillus licheniformis* in B-Act® exert its beneficial effects throughout the whole gastrointestinal tract. In addition, the studied probiotic is antagonistic against several pathogens.

- ⇒ Fewer contaminated birds mean fewer condemned carcasses at slaughter or fewer rejected eggs, marking more food available for consumption.
- ⇒ Reduction in energy costs associated with incineration.

Improved nutrient utilisation

The maintenance of a balanced gut microbiota improves intestinal integrity, leading to better digestion. A decrease of 3% in FCR, on average, has been demonstrated.

- ⇒ Reduction of LUC and less pressure on farmland.

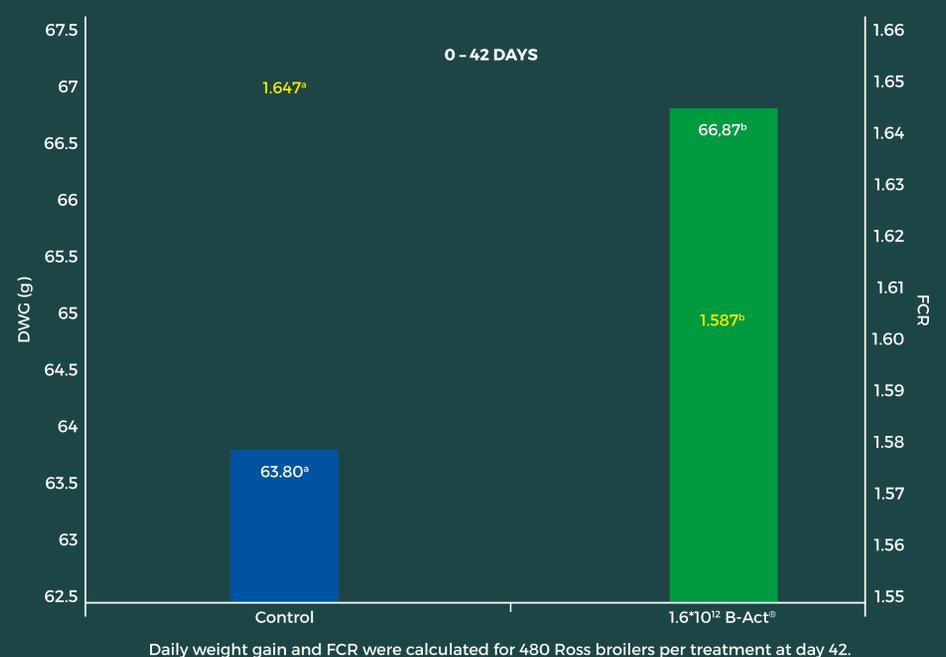


Figure 1. B-Act® improves DWG and FCR

Healthier birds

Bacilli probiotics induce T-cell subsets and enhance immunity to improve health. B-Act® improves litter quality and cracked eggs.

- ⇒ Less waste removal and carcase incineration in broilers and fewer downgraded eggs, which require further processing.
- ⇒ Further reduction in energy costs.

Discussion

Incremental reductions in emissions are required throughout poultry production, from the use of crops which require LUC, the use of energy, and through to the management of waste in production processes. These incremental improvements can multiply to deliver sizeable returns. The use of probiotics in poultry feed can impact bird health and welfare to reduce the carbon footprint of the production unit.

References available upon request.

