

# Hemicell®



Evaluation of Hemicell HT in Broiler Feeds Using Meta Analysis of Multiple Experiments.

## OBJECTIVE

To determine the Effects of Feeding Hemicell HT in Broiler Diets.

### Materials and Methods

Eleven studies with Hemicell HT were included in this initial meta-analysis. Original data from eight of the studies were included in the analysis, and pen summary data were used for the others. In order to guard against possible publication bias, a further search on the internet was conducted for possible additional broiler studies that should be included in the meta-analysis. No additional studies were found that potentially could be included. Specific selection criteria were developed to determine the inclusion in the final analyses.

### Inclusion/Other Criteria

The following criteria were used to select the studies for the meta-analysis:

1. Pen trials conducted from day 0 to market age of 42-43 days
2. Trials with 3 feeding periods: Starter (0-21 days), Grower (21-35 days) and Finisher (35-42 days)
3. Pen weights, feed consumption, and mortality data
4. Weight and mortality adjusted feed conversion data included in the original study
5. Practical corn-soybean meal based diets
6. Treatments with and without varying levels of Hemicell-HT
7. Analysis based on assayed  $\beta$ -mannanase levels in the trial feeds
8. All diets contained commercial levels of a phytase but no NSP enzymes
9. Male only studies
10. Hemicell HT applied pre-pelleting to the mixer

Effects on gain, FCR and body weight were analysed separately for the Starter, Grower and Finisher periods. Gain, FCR and weight and mortality adjusted FCR were adjusted to a common age of 42 days before the analysis for the overall trial period.



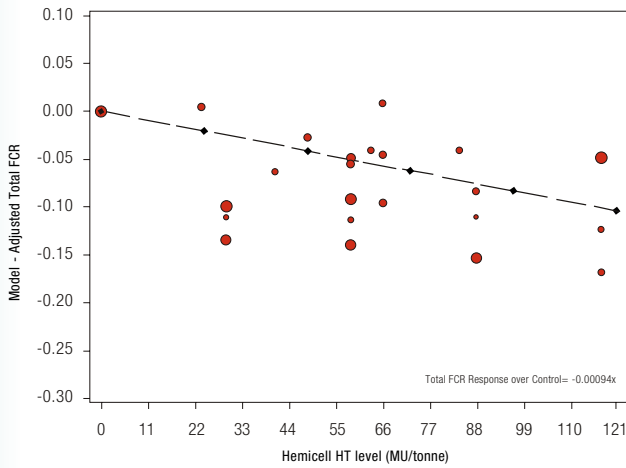
# THE ENERGY-SPARING ENZYME

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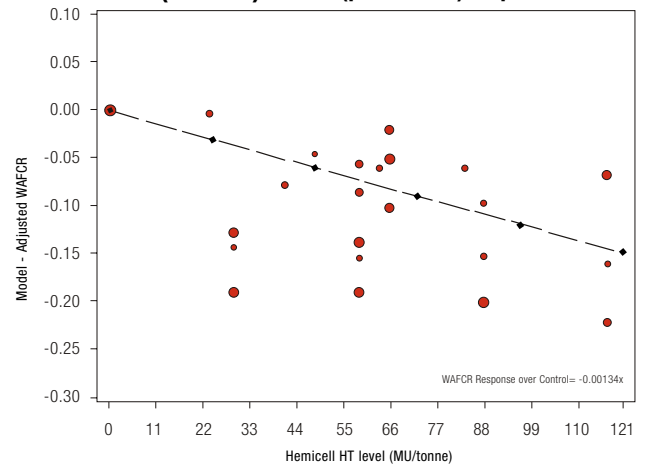
### Hemicell HT: Total Feed Conversion Ratio:

Linear ( $p < 0.0001$ ) response



The response in total FCR for 53 MU/tonne ( $\approx 330$  g Hemicell HT) was a decrease of 5.0 points.

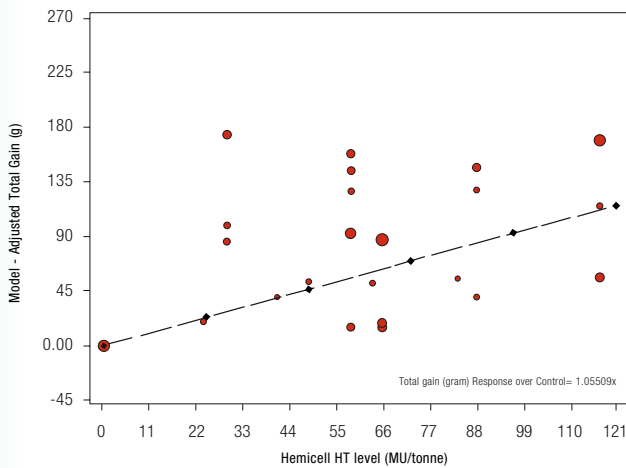
### Hemicell HT: Weight Adjusted Feed Conversion Ratio (WAFCR): Linear ( $p < 0.0001$ ) response



The response in WAFCR for 53 MU/tonne ( $\approx 330$  g Hemicell HT) was a decrease of 7.1 points

### Hemicell HT: Total Gain:

Linear ( $p < 0.0001$ ) response



The response in total gain for 53 MU/tonne ( $\approx 330$  g Hemicell HT) was 56 g which is an increase of over 2%

## Summary

The meta-analysis of the 11 trials (conducted up to 2012) indicate that using Hemicell at 330g/tonne of feed will result in:

- 56 g increase in body weight/ bird for a 42 day old broiler
- 5.0 points decrease in FCR
- 7.1 points decrease in Weight Adjusted FCR.

## Hemicell Use and Recommendations

Hemicell is a unique, patented enzyme produced by fermentation of *Bacillus lentus*. The active ingredient is *Endo-1,4-β-D-mannanase*.

**Species:** Broilers

**When:** From start to finish

**Dosage:**

Product	Dosage per tonne of complete feed
Hemicell HT	200 - 400 g/ton of feed

1 kg of hemicell HT contains (minimum guarantee) 160 million units (MU)

**Recommended use program:** Use Hemicell in diets with at least 12% SBM or equivalent  $\beta$ -mannan content.

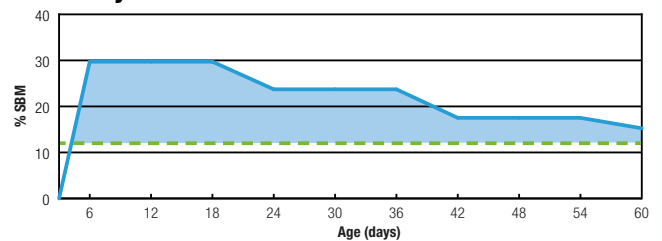
**Energy reduction (for high-energy diets):** Improved performance allows for a reduction of dietary energy up to **90 kcals/kg**.

Reference: Evaluation of Hemicell in Broiler Feeds Using Meta Analysis of Multiple Experiments.

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### % soybean meal in broiler diets



Use Hemicell in diets with at least 12% soybean meal or equivalent  $\beta$ -mannan content.

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