



The effect of FMR Ω 3 on the performance of broilers

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Introduction

To ensure sustainable broiler production, the feed industry is continuously searching for sustainable feed ingredients, including alternative protein sources. In early poultry life, the targets are gut development and immune competence, which are essential for supporting fast growth and feed efficiency.

Joosten – young animal nutrition, developed FMR Ω 3, a 100% vegetable and processed protein source that includes omega-3 fatty acids. FMR Ω 3 contains high levels of glutamine, an amino acid essential in young animals and delivers a direct positive effect on villous development and gut health.

Overall, the high levels of glutamine, amino acids and omega-3 fatty acids, and superior protein digestibility, make FMR Ω 3 a sustainable and safe solution to replace conventional animal protein sources such as fishmeal or other high quality protein ingredients in young animal diets.

In an experimental broiler trial the effects of FMR Ω 3 on the performance of broilers were studied.

Methods

Day-old female broilers (Ross 308) were purchased from the hatchery. On the day of arrival, they were randomly distributed over 22 wire-floored suspended pens, each holding 4 broilers.

Two starter diets (day 1 - 14), grower diets (day 14– 24), and finisher diets (day 24-36) were produced.

The two experimental treatment groups, with 11 replicates for both diet A and B, were as follows:

- A. Control: Commercial** basal diet.
- B. FMR Ω 3: Control** diet with 5% FMR Ω 3 included during the starter period (day 1 -14)

Broilers were weighed per cage on days 1, 14, 24 and 36. Feed intake was measured per pen at these time points, and feed conversion was calculated. The Footpad lesion scores and faeces scores were also measured.

Results

The body weight in the FMR Ω 3 group was significantly higher (by 3.2%) on day 14 than in the Control group ($p=0.036$). When measured on days 24 and 36, body weight was numerically higher but not significantly different.

Table 1. Average body weight (g) of the broilers of the two dietary treatment groups.

Treatments ¹	Day 1	Day 14	Day 24	Day 36
A: Control	44.9	492.6	1240	2302
B: FMR Ω 3	44.6	508.6	1253	2320
P-values	-	0.036	0.287	0.319

During the starter period (day 1-14), the growth rate of birds was significantly higher (by 3.8%) for the FMR Ω 3 group compared to the Control group ($p=0.034$). There was no significant difference in the growth rate of birds between the control and FMR Ω 3 group during the grower (day 14-24), finisher (day 24-36) and total period (day 1-36).

Table 2. Average growth rate (g/d) of the broilers of the two dietary treatment groups.

Treatments ¹	Day 1-14	Day 14-24	Day 24-36	Day 1-24	Day 1-36
A: Control	34.4	82.9	88.5	54.3	66.4
B: FMR Ω 3	35.7	82.7	88.9	54.9	66.9
P-values	0.034	0.458	0.438	0.281	0.316

The feed intake was numerically higher across all the growth phases in the FMR Ω 3 group compared to the control, but not at a statistically significant level.

Table 3. Calculated daily feed intake (g) per broiler for the two experimental treatment groups.

Treatments ¹	Day 1-14	Day 14-24	Day 24-36	Day 1-24	Day 1-36
A: Control	38.3	113.5	148.2	71.1	97.5
B: FMR Ω 3	39.0	115.4	148.9	72.2	98.5
P-values	0.184	0.171	0.416	0.165	0.259

During the starter period, the FCR value was significantly lower ($p=0.039$) in the FMR Ω 3 group compared to the control group; the improvement in FCR value in the FMR Ω 3 group was approximately 2%. Conversely, the FCR value tended ($p=0.058$) to be lower for the Control group during the grower phase (day 14-24). There were no significant differences in FCR between the two groups during the finisher phase and the total period (day 1-36).

Table 4. Feed conversion of broilers for the two treatment groups.

Treatments ¹	Day 1-14	Day 14-24	Day 24-36	Day 1-24	Day 1-36	FCR2300
A: Control	1.113	1.370	1.679	1.309	1.470	1.469
B: FMR Ω 3	1.093	1.397	1.678	1.316	1.472	1.468
P-values	0.039	0.058	0.488	0.275	0.411	0.480

Footpad lesions, severity and faeces scores did not differ significantly between the Control and the FMR Ω 3 group.

Conclusion

The addition of a 5% FMR Ω 3 significantly improved the FCR of broilers during the starter period (day 1-14). The additive showed no significant difference in FCR during the rest of the growth phases (grower, finisher and total period).

The addition of a 5% FMR Ω 3 significantly improved the growth rates of broilers during the starter period (day 1-14). The additive showed a numerical improvement in feed intake across all growth phases.

Overall, the addition of a 5% FMR Ω 3 during the starter phase significantly improves growth rates and feed utilisation efficiency of the broilers. As they grow, the carryover effect results in a 1% improvement in growth performance during the grower and finisher phases.

This broiler trial is confirming that FMR Ω 3 is a high-quality protein ingredient which improves the technical performance in broiler production.