Efficiency of liquid methionine confirmed in French broiler trials

A large-scale evaluation of the use of DL-OH-methionine (OH-Met) in broiler production in France was started in July 2019. Over one million male broiler chickens on 50 farms in Brittany were fed on the experimental diets with either powder or liquid OH-Methionine. Performances were compared and showed 100% efficiency of OH-Met, with growth equivalent between the two methionine sources.

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This trial was performed with the French integrator Michel Group, with the objective of comparing the performance of broilers fed either powder or liquid methionine-based diets.

The same efficacy to sustain growth performance had already been proven in scientific studies.

The aim was to have a comparison under field conditions on a large number of broilers.

The conclusion was that on commercial units there was no difference between broilers' growth performance whatever the methionine source used.

With the poultry integrator in control of this study, the partnership was able to validate the efficiency of liquid methionine on a large scale.

Methionine for broilers

Methionine is essential for growth, feathering and is involved in many metabolic functions; even a slight deficiency in methionine will reduce performance.

Therefore, broiler diets require supplementation with methionine and underestimating its importance can have a huge economic impact.

In order to meet the requirements for optimal performance, diets are supplemented with a synthetic source of methionine: DL-OH-Methionine (OH-Met), DL-Methionine (DL-Met) or L-Methionine.

Practicalities

The trial was carried out in partnership with Michel Group: feed was produced by its Saint-Germain-en-Coglès plant (France) and then distributed to farmers in their network.

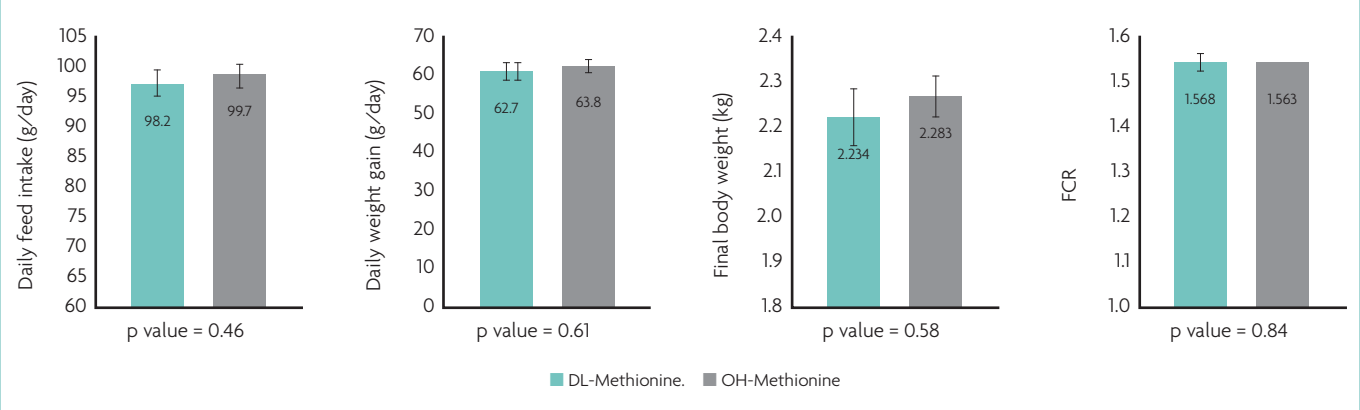
The 50 farms were divided in two – with 562,400 Ross 308 broilers fed OH-Met and 475,389 fed DL-Met over the course of the 10-month study.

There were cycles in same farms to avoid any farm performance bias and the producers did not know which treatment they were on. There were two diets for each rearing phase of the 35-day cycle. The diets were based on cereals (corn, wheat, barley, etc) and protein sources (soya, rapeseed, peas, etc). The feed was formulated by nutritionists at Michel Group to meet their commercial nutrients requirements on a least-cost basis.

This meant that the ingredients were subject to change between batches, but the nutrient levels remained the same between batches. Methionine was supplemented on equimolar basis to meet total sulphur amino

Continued on page 26

Fig. 1. More than one million broilers could not tell the difference between DL-Met and OH-Met.



Continued from page 25
acids requirements as either OH-Met or DL-Met, calculated as: 1.0kg DL-Met (99%) = 1.12kg OH-Met (88%).

Feed samples were analysed and were in line with the expected levels. These results confirm a good application of additives and a good raw materials' quality evaluation (control plan).

Growth performance

Final body weight (day 35) and feed intake were measured for each farm. The average daily weight gain, average daily feed intake and feed conversion ratio were calculated for the whole study for each farm.

Mortality was recorded from day 0-35 and statistical analysis carried out on the results considering the farm as an experimental unit.

No significant effect of farm was observed on any of the performance criteria.

There were no significant differences between the treatments in terms of daily feed intake, final body weight, daily weight gain and feed conversion ratio (Fig. 1). This confirms the results of the same comparison carried out in scientific studies – OH-Met and DL-Met are equivalent at sustaining broiler performance.

OH-Methionine is 100% efficient

This trial has enabled the efficacy of liquid OH-Met to be demonstrated on an impressive number of birds in a commercial setting.

The two companies are committed to an ongoing partnership, in order to facilitate large scale commercial evaluation of strategies to improve the performance, economics and sustainability of animal production. Although these two methionine sources are based on different molecules, they promote the same level of performance. Feed producers are able to take advantage of the practical and financial benefits of a liquid methionine addition.

Liquid benefits

Using a liquid methionine product has several advantages for feed mills on top of significant savings when used at 100% value.

It does not contribute to dust in the facility, reducing the inhalation of fine particles by workers and risk of explosion; as well as assisting in cleanliness.

The international bulk containers (IBCs) or drums used to hold the liquid product can be stored inside or outside the mill – linked up to an automatic dosing system, which both saves on storage and minimises manual handling.

The empty IBCs or drums do not create a waste issue as they can be reused or sold. ■

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Partnership delivers results

The Michel Group, in France, has been involved in animal nutrition since 1947, producing and distributing feed to farmers. In 2019, the total feed production of the Michel Group reached 800,000 tons, sold to 3.5K farmers. Five hundred of these are poultry producers, which make up 40% of the total business. In the collaboration between Adisseo and the Michel Group, large-scale field evaluations of nutritional solutions for broiler production were conducted in France with real-time monitoring of animal performance parameters at the farm level, thanks to sensors.