

# LETTER TO THE EDITOR

## Data interpretation raises risk for performance depression in broiler production

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Recently, Poultry Science published “Optimal methionine plus cystine requirements in diets supplemented with L-methionine in starter, grower, and finisher broilers” (Millecam et al., 2021) with the conclusion “that broilers have lower L-Met plus Cys requirements based on L-Met supplementation than the conventional requirements based on DL-Met.” This statement, valid only in a direct comparison of methionine sources in the same trial, is speculation rather than evidence. Although the authors admitted in the discussion, “no exact comparison with DL-Met or other Met analogs could be made,” they still made the above statement, even in the abstract. We would like to comment on two specific issues:

1. Millecam et al. (2021) do not address comparative bioavailability of L- vs. DL-Met in their trial design but attempt to convince readers that L-Met has higher bioavailability using substantial discussion of differences between L- and DL-Met metabolism. Furthermore, relevant literature on bioavailability is omitted (Dilger and Baker, 2007; Zhang et al., 2018). Regression analyses from studies cited by Millecam et al. (2021) would counter significant differences between methionine sources. (Shen et al., 2015; Esteve-Garcia and Khan, 2018; Park et al., 2018). Austin and Baker (1995) suggest complete bioavailability of D-Met.
2. In this trial, Met+Cys levels were gradually increased by L-Met supplementation. Indeed, performance plateaus in all three feeding phases were achieved with little L-Met additions. The authors did not discuss the possibility that other nutritional factors could have limited the performance responses. Recalculation of the experimental basal diets based on their

ingredients’ nutrient profiles (using data by Fickler et al. (2016)) give reasonable confirmation of the reported essential amino acid levels. However, recalculated crude protein levels would be at least 2.5, 2.0, and 1.5%-points lower than those reported by the authors in starter, grower and finisher diets, respectively. These findings indicate an inconsistency between reported diet composition and respective nutrient levels. Based on the rather low dietary crude protein levels used in the experiment and according to the concept of ideal protein it can be hypothesized that amino acids such as glycine equivalents limited the responses avoiding full effectiveness of methionine supplementation. Compared to recommendations by Santomá and Mateos (2018) recalculations revealed very low glycine-equivalent to lysine ratios of 100 to 106% support this hypothesis.

### DISCLOSURES

Both authors are employees of Evonik Operations GmbH, Hanau, Germany.

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