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BOOK OF ABSTRACTS

PS4 - Solution to improve the nutritional value of feed**PS4-042 Growth performance and gut response of broiler chickens fed diets supplemented with a grape pomace extract**

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During the last decade, interest in dietary supplementation in animal feeding with extracts originating from wine by-products has grown, mainly due to the antioxidant properties and the potential immune response stimulation in animals of the polyphenolic compounds they contain. Therefore, this study aimed to evaluate how the dietary supplementation with polyphenols from grape pomace (0 mg/kg, 250 mg/kg, 500 mg/kg, and 1000 mg/kg) affected growth performance of 560 female Ross broiler chickens from hatching to 41 d of age, and jejunum gut morphology at different ages (12, 23, and 34 d). The dietary supplementation with 1000 mg/kg grape pomace polyphenols resulted in significantly lower body weight ($P < 0.01$) and daily weight gain ($P < 0.01$) compared to the control diet and the diets with 250 and 500 mg/kg polyphenols. The addition of grape pomace extract did not affect feed intake at a significant level ($P > 0.05$), even though it was numerically the lowest in chickens fed the highest supplementation level (86.8 g/d, 87.1 g/d, 88.5 g/d and 85.1 g/d in pens fed diets at 0 mg/kg, 250 mg/kg, 500 mg/kg, and 1000 mg/kg). On the other hand, the supplementation with 500 mg/kg and 1000 mg/kg polyphenols significantly increased feed conversion ratio ($P < 0.01$) compared to the control diet or the diet with 250 mg/kg. Regarding gut morphological analysis, jejunum villi height was higher ($P < 0.01$) in chickens fed the diet containing 500 mg/kg polyphenols compared to the ones fed the other diets. Additionally, villi height significantly increased over time ($P < 0.01$), and significant interactions between age and diet were recorded showing that differences among dietary treatments increased over time ($P < 0.01$). In conclusion, a different response was observed depending on the dietary supplementation level of polyphenols which has been associated by other authors to the effects on feed intake level and the immune response (stimulating or suppressive effects). In detail, in the present study, no effect of the lowest dose was recorded; villi height increased when chickens were fed the intermediate dose (500 mg/kg) while growth performance was depressed with the highest inclusion level (1000 mg/kg). Funding: The research grant of M. Boskovic Cabrol is supported by the DEMyo project (No 101063055) funded by the European Commission under the HORIZON-MSCA-2021-PF-01 call.

PS4 - Solution to improve the nutritional value of feed**PS4-043 Gut health improvements with dietary β -mannanase in meat producing broiler chickens**

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β -Mannans are antinutritional factors found in most feed ingredients. β -Mannans induce wasteful innate response leading to gut inflammation which in turn reduce poultry productivity. The study objective was to evaluate, in field conditions, the effect of 1,4- β -mannanase (Hemicell™ HT Dry, Elanco Animal Health) addition on digestive parameters and zootechnical parameters in poultry. Fifty-one lots of broilers, raised in field conditions (1,143,545 animals), were allocated to 2 treatments groups. The animals were fed wheat, maize and soybean-based diets. Xylanase and phytase were used in the diet. T1: Control receiving a standard diet (n=27), T2: as T1 less 60 kcal ME/kg + 330 g enzyme / ton of feed ie 52800 IU / ton of feed (n=24). Zootechnical performances (ADG, Body weight and FCR) were recorded. For each lot, autopsies of 5 chickens were performed by veterinarian between 23 and 25 days of age. Gizzard erosion, intestinal tone, water content, mucus, cellular sloughing were evaluated. No significance difference between T1 and T2 was observed for zootechnical parameters. No significant difference was reported for intestinal tone and mucus between T1 and T2. Gizzard erosion, water content, cellular sloughing were lower for T2 in comparison to T1. In this study, the use of a β -Mannanase in field conditions allowed to maintain zootechnical performance while decreasing the energy expenses in feed. Improvement of digestive tract health indicators demonstrate improvement of intestinal health of poultry with addition of dietary β -Mannanase.