



## Antioxidant feed stabilisers improve performance in meat poultry

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### APPLICATION

Antioxidant feed stabilisers may improve broiler performance and meat yield.

### INTRODUCTION

Commercial poultry production is correlated with an array of stressors including nutritional, environmental, biological, and technological (Surai, 2020), which can impact the health and growth performance of poultry (Pashtetsky *et al.*, 2019). Antioxidants (AOX) and other dietary factors play a key role in sustaining immune-competence, high growth rates and general health and survival of the animal (Masood *et al.*, 2013). Poultry have developed an “antioxidant system,” which is a defence mechanism that protects cells from free radicals and maintains the Antioxidant-prooxidant balance (Surai, 2020). These unstable atoms mainly originate from reactive oxygen species (ROS) or reactive nitrogen species (RNS) and are created naturally from standard metabolic activity in the body and can damage important biological molecules such as: proteins, carbohydrates, lipids and/or DNA (Pashtetsky *et al.*, 2019). This study investigates the effect of supplementing dry or liquid antioxidants into a standard poultry diet and the subsequent effects on performance and meat yield of broilers.

### MATERIAL AND METHODS

288 male Ross 308 broiler chicks were randomly allocated into groups of 6 birds in 48 floor pens in an environmentally controlled room. Pellet diets were formulated based on wheat (50% inclusion) and soybean meal with added oil, vitamins, minerals, and amino acids, to meet the requirements of the age and strain of the birds. The birds were fed crumbed starter diet from D0-D7, pelleted starter from D8-D22 and pelleted finisher from D22 until the end of the trial. The dietary treatments were as follows: standard poultry diet; standard plus dry AOX and standard plus liquid AOX and each diet was allocated randomly to 16 pens. Feed and water were provided *ad libitum*. Bird body weight gain (BWG) and feed intake (FI) were measured at D0, D7, D14, D21, D28, D34 and D37 and meat yield was measured for both D34 and D37. The trial protocol was approved by the University's ethical review group prior to starting. One-way ANOVA was used to determine the effect of dietary treatment on all parameters measured using R.

### RESULT

Birds fed diets with an AOX feed stabiliser, dry or liquid, significantly showed an improved FCR for D0-21 compared to non-supplemented birds, though these differences were not maintained till D37. They also demonstrated a higher breast meat yield in comparison to the birds fed on the control diet with significant results when fed with the liquid form.

	D0-21 BWG (g)	D0-21 FI (g)	D0-21 FCR	D21-37 BWG (g)	D21-37 FI (g)	D21-37 FCR	Breast Yield (g)	Carcass yield (g)
Control	1101	1470	1.34b	2066	2978	1.44	757b	1393
Dry AOX	1133	1425	1.24a	2061	2993	1.45	802ab	1436
Liquid AOX	1128	1430	1.27a	2084	2978	1.43	814a	1438
SEM	11.1	17	0.016	25.4	30.2	0.016	15.3	22.9
P value	0.099	0.139	0.002	0.807	0.924	0.63	0.018	0.187



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### CONCLUSION

Adding a liquid AOX feed stabiliser significantly improved both growth performance in the starter period and breast meat yield. It is notable that this study had to be terminated slightly early due to the substantial growth of all birds involved in the study, above breed standards by some margin. However this study suggests that enriching a broiler diet with antioxidants can be beneficial. Further investigation needs to be conducted, to identify what dosage is most suitable for optimal performance and meat yield, while considering cost efficacy.

### ACKNOWLEDGEMENT

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