

# Effect of lysophospholipids and xylanase supplementation on growth performance in turkeys

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## Introduction

Xylanase is routinely added to monogastric feed to degrade non-starch polysaccharides. Likewise, lysophospholipid (LPL)-based additives have been found to support the digestion and absorption of various nutrients. However, there is a scarcity of data on the effect of combining both a xylanase and an LPL-based additive on bird performance. Objective of this study was to evaluate possible interactions of an additive containing LPL, monoglycerides and a synthetic emulsifier (LEX) and xylanase (XYL) supplementation on growth performance in turkeys.

## Materials and Methods

- 192 BUT 6 mixed-sex turkeys were assigned to a 35-day study
- 2 x 2 factorial design
- 12 pen replicates/treatment (4 turkeys/replicate)
- Feed intake and body weight were measured weekly
- Data were analysed by ANOVA using the fit model platform of JMP 16.1 and means separation was achieved using student's t-test. Differences were considered significant at  $p < 0.05$ ;  $p < 0.1$  was considered a trend.

### Treatments

T1: Control

T2: LEX at 500g/t

T3: XYL at 45,000 U/kg (Xygest™ HT)

T4: LEX + XYL

## Results

- LEX supplementation increased ( $p < 0.05$ ) body weight gain (BWG) and feed conversion ratio (FCR) between 0 and 28d and delivered higher ( $p < 0.05$ ) final body weight (FBW) by almost 70 g at d35 compared to the control.
- During the total trial period (from 0 to 35d), XYL supplementation tended to improve ( $p = 0.088$ ) FCR by 7 points compared to the control.
- No interactions were observed for any of the parameters.

Treatments	Feed intake		BWG		FCR		FBW	
	0-28	0-35	0-28	0-35	0-28	0-35	d35	
Control	1454.2	2294.2	928.9 <sup>a</sup>	1459.4 <sup>a</sup>	1.562 <sup>a</sup>	1.571	1530.2 <sup>a</sup>	
LEX	1441.5	2396.6	987.0 <sup>b</sup>	1556.7 <sup>b</sup>	1.460 <sup>ab</sup>	1.547	1629.4 <sup>b</sup>	
XYL	1431.8	2274.2	963.1 <sup>ab</sup>	1512.0 <sup>ab</sup>	1.486 <sup>ab</sup>	1.505	1584.9 <sup>ab</sup>	
LEX+XYL	1404.7	2267.8	988.5 <sup>b</sup>	1545.3 <sup>b</sup>	1.419 <sup>b</sup>	1.467	1620.1 <sup>b</sup>	
SEM (n=12)	53.2	80.5	19.5	29.8	0.043	0.044	31.0	
<b>Main effect factors</b>								
LEX	0	1443.0	2284.2	946.0 <sup>a</sup>	1485.7 <sup>a</sup>	1.524 <sup>a</sup>	1.538	1557.6 <sup>a</sup>
	500 g/T	1423.1	2332.2	987.8 <sup>b</sup>	1551.0 <sup>b</sup>	1.439 <sup>b</sup>	1.507	1624.8 <sup>b</sup>
XYL	0	1447.8	2345.4	958.0	1508.1	1.511	1.559	1579.8
	45,000 U/kg	1418.3	2271.0	975.8	1528.7	1.452	1.486	1602.5
SEM (n=24)	36.6	55.4	13.4	20.5	0.029	0.030	21.4	
<b>P-value for main effects and interactions</b>								
LEX	0.696	0.539	<b>0.030</b>	<b>0.027</b>	<b>0.044</b>	0.460	<b>0.029</b>	
XYL	0.562	0.343	0.342	0.472	0.157	<b>0.088</b>	0.447	
LEX*XYL	0.888	0.486	0.383	0.266	0.460	0.873	0.285	

<sup>a-b</sup> Different letters indicate significant differences ( $p < 0.05$ ); SEM: standard error of the mean.

## Conclusion

Supplementing a turkey diet either with LEX or a xylanase or in combination, induced positive performance effects compared to feeding a non-supplemented diet.