

Can Feeding Diets Containing up to 10% DDGS Maintain Broiler Performance While Reducing Feed Costs?

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Problem

Government-mandated renewable or 'green' content in gasoline and diesel fuels are likely to stimulate growth of the ethanol industry in Western Canada. This will increase the availability of dried distiller's grains and solubles (DDGS), a co-product of ethanol production that has potential value as a low-cost protein supplement for livestock and poultry feeding.

While corn predominates as the feedstock for ethanol production in the US, wheat is more commonly used in Western Canada. Triticale also shows promise as an alternative feedstock that might alleviate pressure on local wheat supplies. Little is known about the nutritional value and practical inclusion levels of Western Canadian DDGS types in broiler rations.

The objective of this study was to determine whether feeding practical diets containing up to 10% wheat, triticale or corn DDGS would affect broiler performance or breast muscle yield.

Our Approach

We formulated a control diet based on wheat and soybean meal and 6 test diets that included either 5 or 10% of wheat, corn or triticale DDGS. Diets were formulated to meet minimum requirements for all nutrients based on NRC (1994) and the Ross 308 production guide (Aviagen) and contained similar levels of energy, crude protein and digestible amino acids. In order to accommodate DDGS in test diets, the level of soybean meal (SBM) and wheat were each reduced by 5% or 10%.

Test diets were fed to 8 replicate floor pens (4 pens of males and 4 of females) of approximately 50 broilers each. Each week, birds were weighed as a pen and feed consumption was measured to allow calculation of average daily gain, average daily feed intake and feed efficiency.

Our Observations

In each of the 6 weeks and for the overall experiment no difference in ADG, feed efficiency or breast weight/yield was observed between test diets and the control (**Table 1**).

Slight differences in daily feed intake were observed between treatments (in particular 5 or 10% triticale DDGS diets), but these did not translate into significant differences for feed efficiency.

Table 1. Effect of inclusion of 5 or 10% corn, wheat or triticale DDGS on broiler growth performance, breast muscle weight and yield.

Parameter	DDGS Inclusion Level, %						
	0%	5%			10%		
		Corn	Wheat	Triticale	Corn	Wheat	Triticale
ADG, g/d	62.4	61.4	61.3	60.6	60.7	61.8	61.3
ADFI, g/d	91.5 ^{cd}	92.6 ^c	90.2 ^{cde}	100.6 ^b	88.3 ^e	89.6 ^{de}	104.5 ^a
G:F, g:g	0.70	0.71	0.72	0.64	0.71	0.72	0.64
Breast weight, g	408	404	411	405	414	406	396
Breast yield, %	19.1	18.9	19.2	18.8	19.4	18.9	18.5

What Does This Mean?

Our results suggest Alberta poultry producers can successfully feed corn or wheat triticale DDGS at 10% of the diet without compromising performance or breast yield of their birds. Based on prices at the time of the study, including 10% DDGS in a wheat-SBM diet (similar to the control in our study) could **reduce feed costs by \$5 - 8/Tonne**.

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Contact Information

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