



Can Feeding 10% Dried Distiller's Grains and Solubles Maintain Broiler Performance While Reducing Feed Costs?

Matt Oryschak¹, Doug Korver², Ali Pishnamazi² and Eduardo Beltranena^{1,2*}

¹Alberta Agriculture and Rural Development, Edmonton, AB, ²University of Alberta, Edmonton, AB

Summary

We fed diets that included up to 10% of wheat, corn or triticale DDGS and observed no impact on broiler weight gain, feed consumption, feed efficiency or weight of breast muscle. Including 10% DDGS in commercial diets could reduce costs without adversely impacting productivity.

The Problem

Government policies mandating renewable or 'green' content in gasoline and diesel fuels are likely to stimulate growth in 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.

What We Did

We formulated a control diet based on wheat and soybean meal and 6 test diets that included either 5 or 10% of wheat, corn and 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 test diets, the level of soybean meal (SBM) and wheat were each reduced by 5% or 10% in order to accommodate DDGS.

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.

Breast weight and breast yield (as % of body weight) was measured on day 37 of the trial in five, randomly-selected birds from each pen.

What We Observed

We observed expected differences between males and females, but no interaction between sex and test diet.

In each of the 6 weeks and in the overall experiment no difference in ADG, feed efficiency or breast weight/yield was observed between test diets and the control (Figure 1, Figure 2).

Slight differences in daily feed intake were observed in a couple of the weeks, but these did not translate into significant differences in feed efficiency.

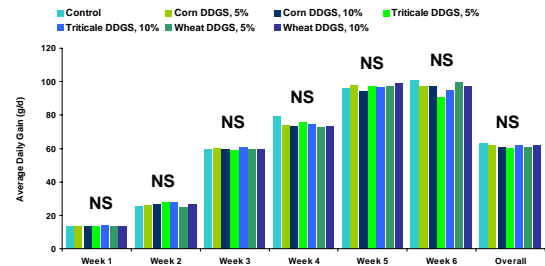


Figure 1. Effect of 5 or 10% dietary inclusion of wheat, corn or triticale DDGS on ADG of broilers (NS = no significant differences among treatments).

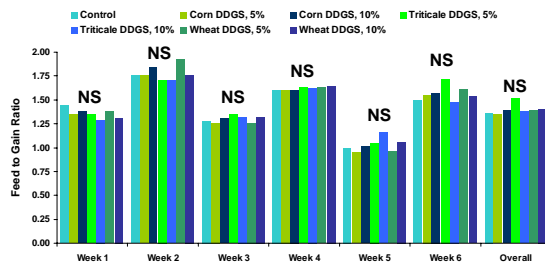


Figure 2. Effect of 5 or 10% dietary inclusion of wheat, corn or triticale DDGS on feed efficiency (Feed-to-Gain) of broilers (NS = no significant differences among treatments).

Implications

Our study suggests that Alberta poultry producers can successfully feed corn, wheat or triticale DDGS at 10% of the diet without compromising performance or breast yield of their birds.

At current prices (e.g., wheat=\$170/T, SBM=\$375/T, DDGS=\$160/T) **including 10% DDGS in a wheat-SBM diet (similar to the control in our study) could reduce feed costs by at least \$5/Tonne.**

Our Sponsors:



*Corresponding author is Dr. Eduardo Beltranena (AARD), email: eduardo.beltranena@gov.ab.ca, Tel: 780.427.4567