

## Feeding DDGS to Pigs

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### Introduction

An increased output of Dried Distillers Grains with Solubles (DDGS) is expected for North American livestock production. However, very little research has been completed in Ontario using product manufactured by GreenField Ethanol from their Chatham plant. Since variation in product quality can exist from one plant to the next, feeding trial initiatives were needed to quantify the economic ramifications of feeding DDGS (Chatham) to swine herds in Ontario.

### Objective

The project evaluated the effects of feeding dried distillers grains with solubles (DDGS) to pigs based on measurements of growth, feed intake, economic returns and carcass quality. The following objectives were specifically addressed:

- a) o determine the effects of feeding DDGS (Chatham plant) at a 10 and 20 percent dietary (as fed) inclusion rate based on pig growth rate, feed intake and efficiency.
- b) To determine the economic benefits of feeding DDGS from the Chatham plant in pig growing and finishing diets.

### Experimental Procedures:

After a three week adjustment period, ninety-six pigs ( $48.8 \pm 5.2$  kg) officially began the trial on February 14<sup>th</sup>, 2005. Each pen (3 barrows and 3 gilts) was randomly assigned to one of the four grower diets until they were 70 kilograms body weight (BW). They were then fed an assigned finisher diet until they were marketed ( $\geq 110$  kg BW) by pen. The following dietary treatments were formulated and fed:

1. Grain corn, SBM (control diets) and premix. A grower diet [17% CP (0.8% lysine)] was fed until the pigs were 70 kg followed by a finisher diet [14% CP (0.6% lysine)] until they were marketed.
2. Similar diets and feeding strategy to control (above) group. However a 10 percent inclusion rate of DDGS + additional crystalline lysine was added to produce diets with similar lysine content.
3. Similar diets and feeding strategy to control group. However a 20 percent inclusion rate of DDGS + lysine was added to produce diets with similar lysine content.
4. Similar crude protein levels to control diets. However a 10% inclusion rate of DDGS was added with no additional lysine supplementation. Dietary lysine levels were therefore significantly reduced [0.7% (grower diet) & 0.5% (finisher diet)].

The pigs (pens) were fed *ad libitum* with a required feed refusal or weighback taken once weekly. Ultrasound measurements (backfat and loin eye depth) were taken at the start of the trial, five weeks later and before the pigs were marketed by pen. The pigs were weighed weekly and were marketed after achieving an average 110 kg BW per pen. All pigs were slaughtered at one

location (Quality Meats) where carcasses were weighed and graded. The data was then entered and analyzed in an appropriate manner using SAS (2001) statistical procedures.

**Results:**

**Table1. Effects of dietary treatment on pig growth rate, feed intake and carcass quality.**

	Control Diet	10% DDGS + Lysine	20% DDGS + Lysine	10% DDGS no Lysine
<b>Growth Performance</b>				
Number of pigs	24	21	23	16
Days to Market (by pen)	56.6	56.7	55.2	56.6
Average Daily Gain (kg)	1.13	1.12	1.14	1.09
<b>Feed Intake Measurements</b>				
Total Feed Intake (kg)	174.7	170.6	171.3	170.9
Average feed intake (kg/d)	3.1	3.0	3.1	3.0
Feed efficiency (F/G)	2.8	2.7	2.7	2.6
Cost of gain (\$/kg) - 2005	0.50	0.47	0.46	0.45
<b>Carcass Measurements</b>				
Dressing Percentage	79.6	79.8	79.4	79.5
Yield Index (%)	61.3	61.1	60.5	60.8
Grade Fat (mm)	17.1 <sup>a</sup>	17.8 <sup>ab</sup>	19.3 <sup>b</sup>	18.5 <sup>ab</sup>
Meat depth (mm)	62.0	62.6	61.3	64.0

<sup>a</sup> and <sup>b</sup> LS means within row that do not share a common superscript differ significantly ( $p < 0.05$ ).

**Conclusions:**

- Similar growth rate, feed intake and efficiency and gain costs were observed for each dietary treatment (0, 10 and 20 percent DDGS).
- Since feed efficiencies were similar, costs of gain were strongly related to ingredient costs. Therefore producers are advised to incorporate DDGS when this co-product is favorably priced relative to corn and soybean meal.

**Acknowledgments:**

The authors would like to thank the Innovation and Risk Management Branch (OMAFRA), GreenField Ethanol, and OMAFRA for their financial and technical assistance. Support and technical input from each research team member was also greatly appreciated.