

# REDUCING FEED COSTS IN GROWER-FINISHER BARNs

**Greg Simpson**  
**Ontario Ministry of Agriculture, Food and Rural Affairs**  
**6484 Wellington Road 7, Elora, Ontario N0B 1S0**  
**E-mail: greg.simpson@ontario.ca**

## INTRODUCTION

By now it should be no surprise that feed is by far the biggest cost in raising a hog to market. The remarkable roller-coaster that commodity markets have been on over the last year and a half is a sobering reminder of the impact feed has on the economics of raising hogs. Fortunately there are a number of things that producers can do to reduce or control feed costs. However, on most farms we are probably ignoring \$2 to \$5/pig in potential feed savings.

## THE BASICS

This is by no means a comprehensive list but represents opportunities producers have to reduce or control feed costs. You have heard about each and every one of these but how many have you implemented?

- High health status
  - Fighting infection and disease takes away nutrients from growth and feed conversion. Your health status is worth protecting! Implement a workable biosecurity protocol and strictly follow it.
- Phase feeding
  - Matching the diet nutrient density to stage of production and intake saves money. As you increase the number of phases the amount of savings is diminished but 3 to 4 phases is usually optimal.
- Split sex feeding
  - Barrows eat more than gilts. Due to this difference, implementing separate feed budgets for barrows and gilts reduces feed costs.
- Reducing feed wastage
  - Are you achieving 5% feed wastage?
  - Feeder settings
    - Are you setting the feeders regularly?
    - Are you checking feeder pan coverage daily?
  - Feed system repairs
    - Any leakage in your feed system is a lost opportunity.
    - Remember duct tape is supposed to be temporary!
- Using “alternative” ingredients

- This requires the help of a nutritionist and typically more focus on ingredient quality control.
- Using ingredients like distillers dried grains with solubles, wheat shorts, bakery meal, field peas, canola meal, etc. can be well worth the extra effort.
- Feed budget
  - How well do you know your pigs' feed intake and growth?
  - Are you setting targets for kilograms of feed delivered and growth for each phase?
  - Are you achieving those targets?

This final point is critical to return over feed cost as it is a reflection of the unique combination of the genetics, nutrition, health and management in your operation. This combination determines your feed cost. It is also a complicated question to answer as changes in one area can dramatically alter another.

## **A CASE STUDY**

Let's examine a case study from a 2000 sow farrow to finish loop. This loop is comprised of 3 sow units all stocked with the same maternal line. The early weans from the sow units are commingled in nurseries and then flow into the finishers. The majority of feed used in the system is complete feed. The group finishes 40,000+ market hogs per year, collects close-out data on every batch through their nurseries and finishers and participates in a benchmarking group.

In February 2008, they came to me with a problem. They had recently changed terminal sire genetics and were not achieving the average daily gain (ADG) or feed conversion they had seen in their test groups. Average daily gain was in the low 800 g/day and feed:gain was hovering in the 3.1 to 3.3 range. To help find a solution we attempted to answer the following questions:

### **What should the performance be?**

We needed to gather enough information to estimate the performance potential for these pigs. From the closeouts we could roughly estimate feed intake, Ontario Pork's OINK system provided valuable carcass information and their nutrition provider shared the nutrient specifications of the diets they were using. We then used the PorkMaster® growth model (Massey University & University of Guelph) to see if we could predict current performance. Based on the information we had, the model predicted significantly better growth and feed conversion than was being observed. It also told us that we were likely over-feeding these pigs, especially in the late finisher.

### Is the feed budget correct?

While there was a feed budget in place (Table 1), it needed to be validated to see if it was appropriately matched to the growth rate of the pig.

**Table 1. Original feed budget.**

Feed/Phase	Start Weight (kg)	End Weight (kg)	Feed Budgeted (kg)	Feed Budgeted (%)
Grower 1	25	34	20.25	7.8%
Grower 2	34	55	52.5	20.3%
Grower 3	55	80	69.25	26.9%
Grower 4	80	115	115.5	44.9%

The production manager conducted a series of spot weight checks at various finisher barns at the end of each phase. In some cases the feed budget was correct but in most cases the pigs appeared to start falling behind the budget around Grower 2 or 3.

### What is the feed intake and growth curve for these pigs?

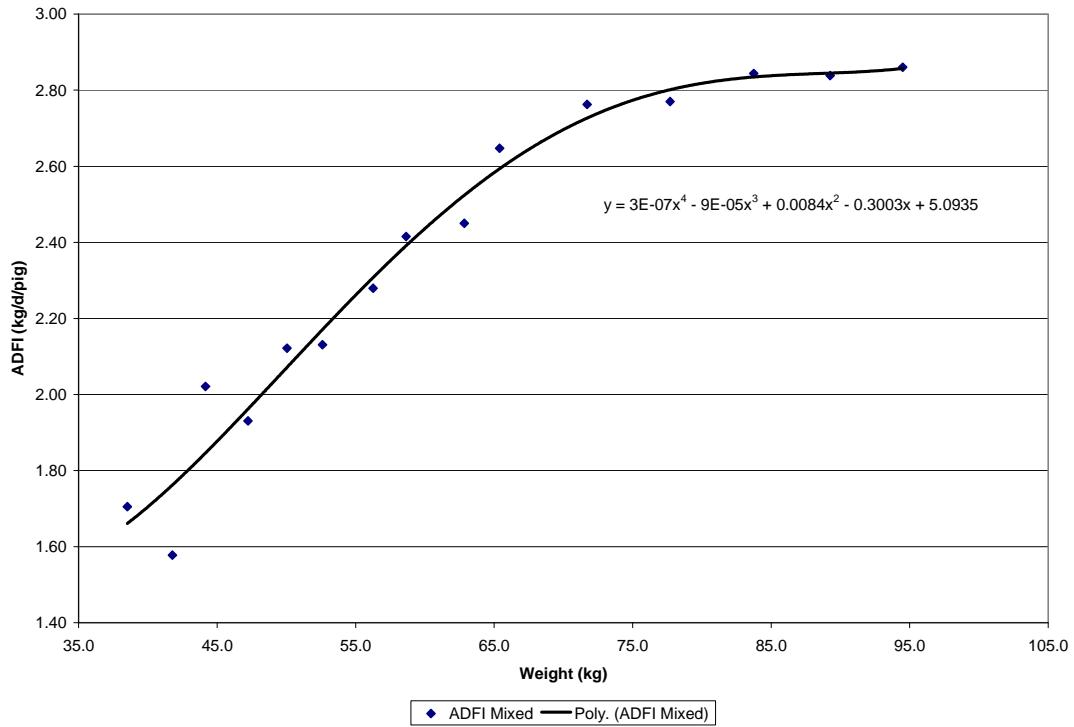
In June 2008, we decided to do a feeding trial to monitor feed intake and growth over the entire finishing period. Prior to beginning the trial we re-designed the feed budget and added a fifth phase. Based on model predictions we anticipated these changes would reduce expected feed costs by approximately \$3.25/pig.

The trial was set up to monitor feed intake and growth in four adjacent pens. Each set of two pens shared a fence line wet-dry feeder. Sixty-five barrows were placed in the first set of pens and sixty-five gilts were placed in the second set of pens. All pigs were weighed on entry and re-weighed every 7 days using a digital scale. Weights were totalled and average daily gain calculated weekly. Any pigs that were removed from the trial (due to injury or mortality) were weighed and the weight data adjusted to reflect their removal in the following week. Once the first group of pigs reached shipping weight the trial was ended.

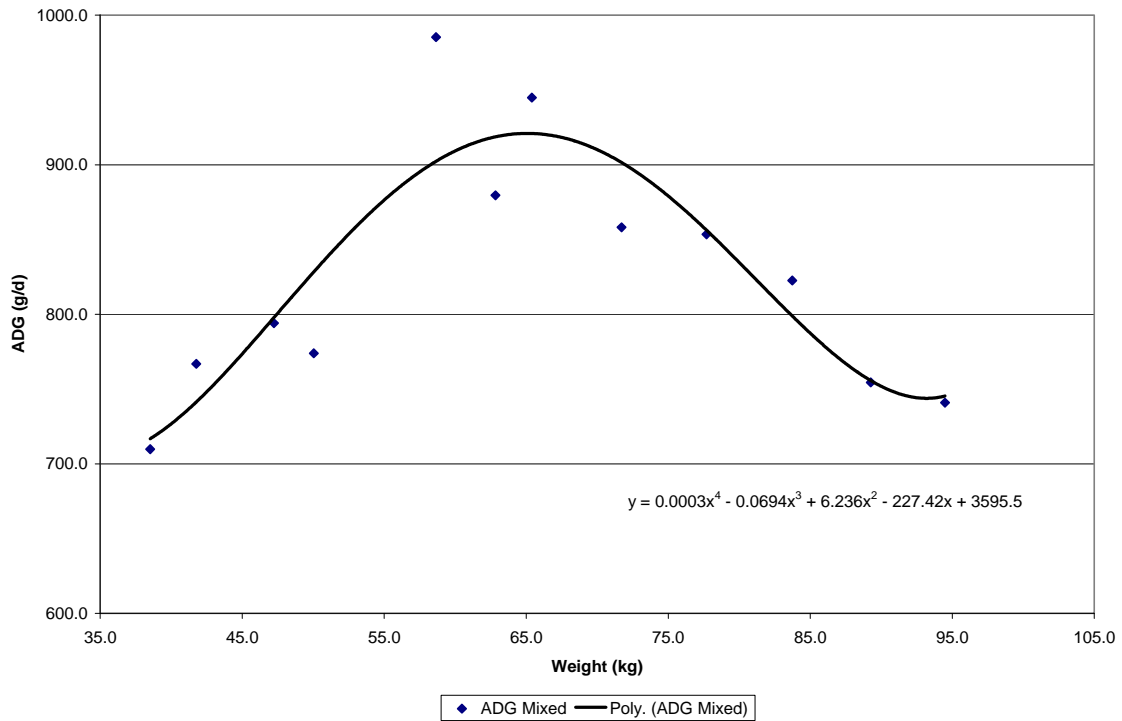
The feeding system delivered feed into large plastic hoppers suspended above each feeder. Both hoppers were suspended by spring scales so the feed could be weighed prior to being emptied into the feeder. Daily, the producer would record the weight of feed deposited into the feeder on a calendar posted beside the hoppers. Each week the feed would be totalled and feed intake and feed:gain calculated.

From the trial we were able to develop feed intake and growth curves (Figures 1 and 2).

**Figure 1. Feed intake curve for mixed sex grower-finisher pigs.**



**Figure 2. Average daily gain curve for mixed sex grower-finisher pigs.**



Using PorkMaster® we compared the model predictions for the trial against the closeout (Table 2).

**Table 2. PorkMaster® predictions versus trial results.**

	Average Daily Gain (g/day)	Feed:Gain	Carcass Yield (%)
PorkMaster® Prediction	843	2.93	61.4
Trial Result	806	2.95	60.8

While we appeared to be closing in on characterising the feed intake and growth potential of these pigs we were not all the way there yet. This process also identified a few areas for improvement and further refining of the diets and feed budget (Table 3). Based on model predictions this new budget reduced expected feed cost by approximately \$2.00/pig.

**Table 3. New feed budget.**

Feed/Phase	Start Weight (kg)	End Weight (kg)	Feed Budgeted (kg)	Feed Budgeted (%)
Grower 1	28	36	16.2	6.3%
Grower 2	34	47	24.8	9.7%
Grower 3	56	68	38.5	15.1%
Grower 4	68	88	77.2	30.2%
Grower 5	86	118	98.6	38.6%

### **Continuous Improvement**

Since then we have repeated the trial to gather more information and continue to refine the diets to improve carcass characteristics. Performance has improved throughout the system and closeouts are now showing ADG around 850 g/day and feed:gain near 2.9 without affecting carcass characteristics.

### **SUMMARY**

Every swine producer should have a deep understanding of how their unique combination of genetics, nutrition, health and management impacts return. That knowledge is the key to reducing feed cost and is well worth the effort and time commitment to obtain.

## **ACKNOWLEDGEMENTS**

I want to thank all of the companies and individuals involved in this process for their time and commitment to continuous improvement and allowing me to participate. Your enthusiasm is infectious!