

## EVALUATING OPPORTUNITY COST WHEN ASSESSING THE VALUE OF ALTERNATIVE FEED INGREDIENTS *by Steve Weiss*



When a nutritionist is evaluating alternative feed ingredients for a Company that has secured a position on corn at less than the current market price, what price should the nutritionist use for corn in the evaluation, current market or the secured position? This article will answer this important, yet often misunderstood, question.

### OPPORTUNITY COST DEFINED

Opportunity Cost is defined as the cost of any activity measured in terms of the value of the “next best alternative.” The notion of Opportunity Cost plays a crucial part in ensuring that scarce resources are used efficiently.

Opportunity Cost is the underlying concept behind least cost formulation. In least cost rationing, livestock nutritionists use sophisticated tools to compare alternative nutritional components to determine the most cost-effective diet. The value of any alternative feed ingredient is equal to its Opportunity Cost (e.g., the value of its “next best alternative”).

In determining relative values using the NUTRIQUEST® ILLUMINATE® tool, we compare the nutritional components of each DDGS source with the ingredients in a typical

corn-soy diet to determine the price at which such DDGS source is equal to the “next best alternative”. Though we label this a “relative value”, it also represents the Opportunity Cost. The difference between the price of the DDGS and its Opportunity Cost represents the potential savings of using DDGS in the diet (or potential additional cost, if the DDGS price is greater than the Opportunity Cost).

### EXPLICIT VS. IMPLICIT COSTS

There are two types of Opportunity Costs – Explicit and Implicit.

Explicit costs are factors of production not owned by a producer that involve direct monetary payment (e.g., what is spent for labor, utilities, feed component costs). For explicit costs, the Opportunity Cost is the price you have to pay for such items. For example, the Opportunity Cost for Paylean is Elanco’s price for Paylean.

Implicit costs are factors of production that could be used by a producer in alternative ways (e.g., assets that could be deployed differently or production factors that could be readily sold or exchanged at a known value). For implicit costs, the Opportunity Cost is the alternative

## UPCOMING EVENTS IN 2012

**STOP AND SEE THE NUTRIQUEST TEAM AT ONE OF THESE UPCOMING EVENTS IN 2012!**

**16TH DISTILLERS GRAINS SYMPOSIUM**  
(May 16-17, 2012, St. Louis, MO)

**MULTI-STATE POULTRY FEEDING AND NUTRITION CONFERENCE AND DSM NUTRITION PRODUCTS, INC.’S TECHNICAL SYMPOSIUM**  
(May 22-24, 2012 - Indianapolis Marriott East, Indianapolis, IN)

**2012 POULTRY SCIENCE ASSOCIATION ANNUAL MEETING**  
(July 9-12, 2012, Athens, GA)

**JOINT ANIMAL SCIENCE MEETINGS**  
(July 15-19, Phoenix, AZ)

**USPOULTRY WOMEN’S LEADERSHIP CONFERENCE 2012**  
(August 16, Destin, FL)

**ARKANSAS NUTRITION CONFERENCE**  
(September 4-6, Rogers, AR)

**NATIONAL MEETING ON POULTRY HEALTH AND PROCESSING 2012**  
(September 17, Ocean City, MD)

**USPOULTRY POULTRY PRODUCTION AND HEALTH SEMINAR**  
(September 25, Birmingham, AL)

**OPPORTUNITY COST CONTINUED FROM PAGE 1**

value for such items. For example, the Opportunity Cost for #2 yellow corn, even if a firm has negotiated and secured a lower price, is the local market price for corn.

**WHAT IS THE IMPLICATION FOR LIVESTOCK DIETS?**

I have had discussions among NUTRIQUEST nutritionists and some customers regarding the value which should be used for each ingredient in an Opportunity Cost analysis. Specifically, if a Company has secured a price for an ingredient, should the Company's price or market price be used in determination of Opportunity Cost?

The answer is, unequivocally, market price if (a) the underlying ingredient can be readily and freely traded, or (b) the underlying ingredient can be stored or its usage otherwise deferred to future periods and market price can be ascertained for such future periods...essentially, if such item meets the definition of an Implicit Cost. Again, we invoke the concept of Opportunity Cost for this ingredient...determining the value of the "next best alternative" (the alternative being the ability to sell this ingredient at market price).

To illustrate, this, let's suppose that you have locked in a futures price of \$5.75 per bushel for June corn, which is trading at \$6.00. Because there is a ready market for corn, you would use \$6.00 in your least cost formulation analysis in evaluating ingredients alternative to corn. That is because if you discover an alternative ingredient that pushes corn out of your ration, you should take full advantage of the opportunity and pocket the \$.25 per bushel profit on your corn or, alternatively, defer the usage of corn into a future period.

Alternatively, let's suppose you have locked in a futures price of \$6.25 per bushel for June corn, which is trading at \$6.00. Here again, you would use \$6.00 in least cost formulation and either recognize your corn loss or defer corn usage to a future period. You are already "under water" \$.25 per bushel for corn...the last thing you want to do is create additional economic loss by purchasing an alternative ingredient that replaces corn at \$6.25 when the market is lower than that.

This is an important concept in optimizing the profitability of a livestock production operation. Since it involves the major commodities (e.g., corn and soybean meal and their alternatives) that can comprise up to half of our cost of production, it can have significant economic consequences. However, we find that this concept of Implicit Cost is often not being followed. When it is not followed, significant economic opportunity can be lost:

- When a firm has an attractive price relative to market, it may miss additional economic opportunities that the market provides.
- When a firm has secured a disadvantageous price to market, it may make alternative ingredients appear to be more beneficial than current market, creating additional economic loss.

The Opportunity Cost of not correctly using the concept of Opportunity Cost for a livestock operation can be significant.

**NUTRIQUEST® SPONSORED OIL EXTRACTION CONFERENCE WELL ATTENDED** *by Paige Grabe*

Over 180 individuals attended the NUTRIQUEST sponsored conference, 'How is Oil Extraction Impacting DDGS Value in Swine?' held March 21, in Des Moines, IA. The afternoon was shared by attendees from across the swine production, livestock feed, and ethanol communities. Representatives from poultry production, egg production, ingredient brokers, university, and many allied industries were also in attendance.

The event was well received and acted as a platform for stakeholders to come together and discuss an issue that has raised many questions. Attendees also heard presentations relating to antibiotic residues in DDGS and the results of two mycotoxin surveys. The NUTRIQUEST team greatly appreciates the many questions and opinions that were shared.

You will find a summary of the conference along with copies of all the presentations on the NUTRIQUEST website at

<http://www.nutriquest.biz/MediaCenter.aspx>.