WRINKLE
A NEW UNDERSTANDING IN NUTRITION
DakotaGold
Issue 20210002

Poultry Predictive Energy Equation for Dakota Gold - A New Approach

Most poultry nutritionists would agree that in order to accurately formulate a diet, they need accurate energy estimates of all the ingredients. Unfortunately, this becomes difficult for certain ingredients like DDGS that can have different nutrient profiles based on production method.

To address this challenge, POET Nutrition developed a predictive energy equation specifically for Dakota Gold.

MATERIALS AND METHODS

We collected seven samples of Dakota Gold from different POET biorefineries and sent those samples to Dr. Carl Parsons at the University of Illinois. Dr. Parsons determined the energy value of each DDGS sample using his rooster model. A third-party commercial laboratory analyzed each of the samples for moisture, fat, fiber (ADF and NDF), protein, and amino acids.

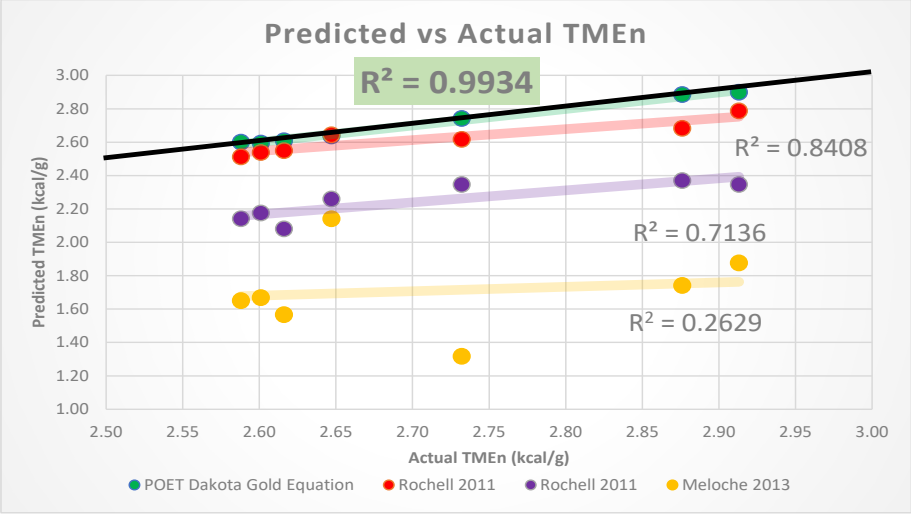
With these data, we then used a regression approach to determine which variable best predicted the actual energy value of Dakota Gold.

RESULTS

The regression approach gave us the following predictive energy equation:

$$TMEn = 1.424 + (ADF \times 0.0668) + (Fat \times 0.0789)$$

Depicted graphically (below figure), we see how the POET equation compares with other published predictive energy equations:



CONCLUSIONS

- For this data set, the other published predictive energy equations underestimate the actual energy value of Dakota Gold.
- The non-POET predictive energy equations had very poor r-squared values.
- Fiber (ADF) contributed to the differences observed in energy between the different Dakota Gold samples.
- This equation applies only to Dakota Gold. This supports our argument that because of nutritional differences in DDGS, the industry needs to develop equations specifically based on production method. A single predictive energy equation will not correctly account for differences in digestibility.

*These results are not a guarantee of nutritional value, as laboratory results are influenced by factors beyond the control of POET Nutrition.