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Coproducts Project Report: Data Analysis and Trends – January 2015

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You may have noticed a new data point in last month's results: non-protein nitrogen. Read on more to learn about this important measure..

One way to assess the nutritive value of a protein is to measure its capacity to provide nitrogen and amino acids in adequate amounts to meet the requirements for the target consumer. Generally, protein content is reported as crude protein, which represents the total nitrogen content of the compound. But not all nitrogen-containing compounds are natural proteins. Crude protein consists of natural or so-called true proteins and non-protein nitrogen (NPN). There are several sources of NPN such as Urea, ammonia and biuret, which can be converted to microbial protein by rumen digestive track microbes. But the question is whether the proteins derived from NPN sources can provide protein values similar to true/natural proteins. In the animal feed industry, producers may consider feeding a small percentage of some of these NPN proteins (such as urea) due to economic reasons. But overconsumption of NPN can cause NPN toxicity. Moreover, there are several situations where use of NPN in animal diets, which differs based on rations, is not appropriate at all [1i].

As DDGS pricing based on solids, particularly, protein is receiving more emphasis for feed industry, measuring and reporting the percentage of NPN component of DDGS will also become important. In addition, with the growing trends in adopting new technologies and strategies by corn ethanol plants for adding value to their by-products, DDGS protein yield has also become very important.

In order to better reflect DDGS quality parameters, NCERC will be measuring and reporting NPN percentage of DDGS samples in our monthly reports for the co-product project.

[i] Jane Parish, 2008, The "Do's" and "Don'ts" of Non-Protein Nitrogen Use. Cattle Business in Mississippi – August 2008. Available online at: http://msucares.com/livestock/beef/mca_aug2008.pdf