Technical Bulletin

Information from Phibro Technical Services

Efficacy of AB20® on pellet durability versus competitive clay-based pellet binders

- ***AB20*** **showed a 16% statistically significant improvement in pellet binding over no pellet binders or other clay-based products**
- ***AB20*** **added value to feed pelleting through manufacturing improvements, feed utilization and performance**

Objective:

The objective of this study was to compare the pellet binding ability of ***AB20*** against competitive products at Kansas State University's O.H. Kruse Feed Technology Innovation Center.

Materials and Methods:

Using a swine diet for purposes of pellet analysis, feed was formulated at the Kansas State University O.H. Kruse Feed Technology Innovation Center as shown in Table 1. Pellet durability problems were expected due to the fat percentage and lack of fibrous ingredients in the formulation. ***AB20*** and three competitive clay-based products were added to the basal diet at a 1% inclusion rate. Pellet samples were taken from each of the diets after pelleting and subjected to standard Pellet Durability Index (PDI) protocols.

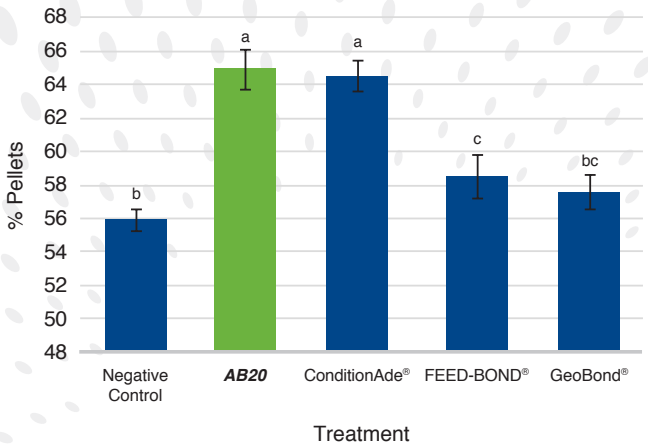
Results:

Results of the PDI studies are shown in Figure 1. When ***AB20*** was compared to a negative control diet with no pellet binder, there was a statistically significant ($P < 0.05$) improvement in PDI, with ***AB20*** showing a 16% improvement in PDI. ***AB20*** performance was equal to one competitive product and showed a statistically significant improvement over the other two competitive products.

Table 1. Basal Diet Formulation

Ingredient	%
Corn	67.67
Soybean meal, 46.5%	5.80
Distillers dried grains w/solubles	20.00
Choice white grease	4.00
Monocalcium phosphate	0.85
Limestone	0.75
Salt	0.35
Lysine 78.8%	0.35
L-Threonine	0.04
L-Tryptophan	0.03
Trace Mineral KSU	0.08
Vitamin KSU	0.08
Total	100.00

Figure 1. Results of the PDI studies of pellets with different pellet binders.



Means with different superscripts are significantly different ($P < 0.05$).
Phibro analyses, 2018

Discussion:

This study showed clear differences among pellet binders. The results of this study demonstrated the need to evaluate clay-based pellet binders and verify product effectiveness.

The advantages of adding pellet binders include:

1. ***A higher percentage of feed pellets***, resulting in fewer fines and less reworked feed
2. ***Increased throughput***, resulting in higher capacities at the pellet mill
3. ***Decreased energy consumption***, resulting in savings on feed manufacturing costs
4. ***Improved PDI's***, resulting in improved customer satisfaction with less feed wasted on the farm

Conclusions:

AB20 has multiple functions when added to feed formulations. One of those value-added functions is as an economical, effective pellet binder. For the formulation used in this study, adding ***AB20*** increased PDI by approximately 16% over the negative control (no pellet binder added). ***AB20*** brings value to the feed manufacturer through manufacturing improvements as well as the producer through better feed utilization and livestock performance.

This information has been prepared for industry technical professionals.