

Technical Bulletin

Information from Phibro Technical Services

AB20[®] — Better Pig Performance and More

- In this 21-day, individually fed study, pigs fed pelleted diets containing no mycotoxins had significantly greater ($P < 0.05$) body weights (BW) when AB20 was included at 0.25% and 1.0% of the diet compared to the 0.00% AB20 control.
- For the same 21-day study period, pigs fed 0.25% and 1.0% AB20 had significantly greater ($P < 0.05$) average daily gain (ADG) than the control.
- Pigs fed diets including 0.25% and 1.0% AB20 had significantly greater ($P < 0.05$) average daily feed intake (ADFI) over the 21-day trial period compared to the control. Pigs fed the diet containing the 0.50% AB20 tended to have higher ADFI ($P < 0.10$) compared to pigs fed the control diet.
- Based on ADG and feed conversion (F:G), 0.25%, 0.50% and 1.0% AB20 was shown to improve potential pig profitability.

Objective

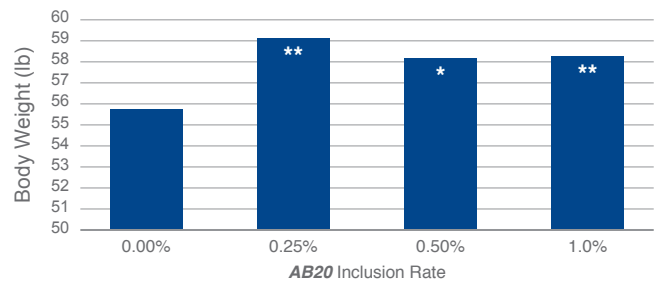
Clay products have long been used as pelleting aids. However, if a clay product would be able to improve pellet quality and potentially increase pig profitability as well, there would be even more added value to using such a product. The objective of this trial was to evaluate pig performance as a function of three different inclusion rates of AB20 nutritional specialty product, from Phibro Animal Health Corporation, in swine diets containing no mycotoxins.

Materials and Methods

This research study was conducted at the University of Kentucky. Forty-eight, university-raised, 24-pound pigs were fed corn/soybean meal based diets over a 21-day feeding period. Treatment diets consisted of pelleted phase three swine diets with 0.00%, 0.25%, 0.50% or 1.0% of AB20. Performance measurements included BW, ADG, ADFI and F:G. Data were statistically analyzed and four pigs, one from each treatment, were qualified statistically as outliers and were removed from the data set. Pre-planned contrasts were used to detect treatment differences. The control diet (0.00% AB20) was compared against each of the other AB20 diets.

Results and Discussion

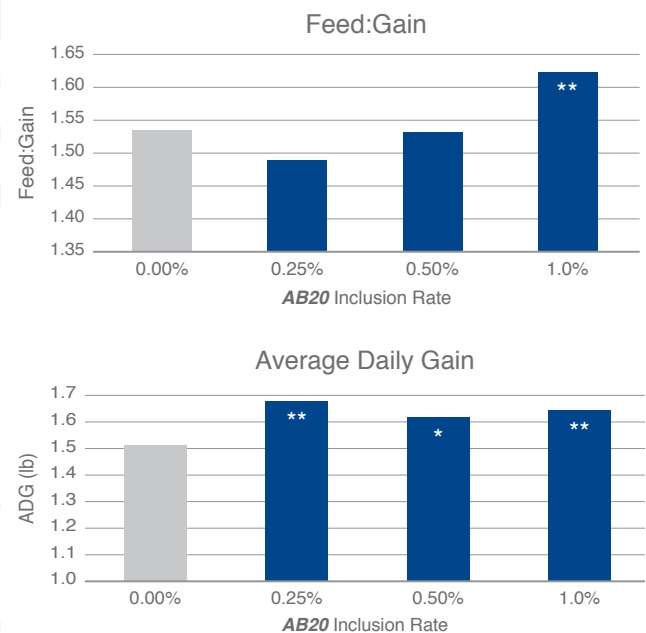
Figure 1. Effects of AB20 on Body Weights for the 21-day Study Period



Means with different superscripts are statistically different from 0% AB20 (* $P \leq 0.10$; ** $P < 0.05$). University of Kentucky, 2019.

As shown in Figure 1, the addition of AB20 to pelleted phase 3 swine diets containing no mycotoxins increased day 21 BW when compared to the 0% AB20 control.

Figure 2. Effects of AB20 on F:G and ADG for the 21-day Study Period.



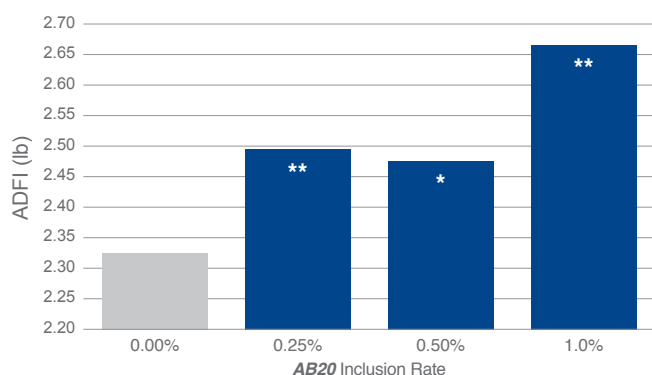
Means with different superscripts are statistically different from 0% AB20 (* $P \leq 0.10$; ** $P < 0.05$). University of Kentucky, 2019.

As expected, similar results were reported for ADG as shown in Figure 2.

In Figure 2, 21-day ADG and feed conversions are shown. As expected, based on pig BW results, there were significant differences in ADG ($P < 0.05$). There was a significant increase ($P < 0.05$) in F:G for the pigs fed the diet containing 1.0% **AB20**.

The addition of 0.25% and 1.0% **AB20** to these diets significantly increased ($P < 0.05$) ADFI. It makes sense that an increase in ADFI and similar F:G support increases in average BW and ADG.

Figure 3. Effects of **AB20 on ADFI for the 21-day Study Period**



Means with different superscripts are statistically different from 0% **AB20** (* $P \leq 0.10$; ** $P < 0.05$). University of Kentucky, 2019.

Using the results of these production variables, pig profitability was calculated and results are shown in Table 1. The addition of **AB20** to phase 3 diets added more profitability.

Based on the improvements in performance for this study, all inclusion rates of **AB20** to pelleted phase 3 swine diets increased the potential for improved pig

Table 1. Estimated Economic Summary for the 21-day Study

| | Treatment 1 0.00% AB20 | Treatment 2 0.25% AB20 | Treatment 3 0.50% AB20 | Treatment 4 1.0% AB20 |
|---|----------------------------------|----------------------------------|----------------------------------|---------------------------------|
| AB20 Pounds Per U.S. Ton of Feed | 0.00 | 5 | 10 | 20 |
| AB20 Cost Per U.S. Ton of Feed @ \$0.32/lb | \$0.00 | \$1.60 | \$3.20 | \$6.40 |
| % Improvement in ADG | 0.00 | 11.25 | 11.25 | 8.40 |
| % Improvement in F:G | 0.00 | 3.25 | 0.65 | -5.20 |
| Estimated Economic Advantage Per Pig | 0.00 | \$2.96 | \$2.73 | \$1.52 |

Economics are based on \$280 per U.S. ton of phase 3 diet, **AB20** at \$0.32/lb, 60-pound pigs at \$1.00/lb.

profitability. The diets containing 0.25% and 0.50% **AB20** provided the greater returns of \$2.96 and \$2.73 per pig, respectively. Increasing the percentage of **AB20** in the feed may be of value in times when poor quality feed ingredients are fed (Schell et al., 1993). In this study, when **AB20** was added at 1.0% to improve pellet durability index (PDI), not only was there improved PDI, but **AB20** also added \$1.52 per pig in potential profitability even though pigs consumed significantly more feed ($P < 0.05$).

Conclusions

- For the 21-day feeding period, adding **AB20** at 0.25% and 1.0% inclusion rates to pelleted swine feeds that contain no mycotoxins significantly improved ($P < 0.05$) and 0.50% tended to improve ($P < 0.10$) BW, ADG and ADFI, all of which may positively impact potential pig profitability.
- Inclusion of **AB20** to swine diets has been shown to significantly improve PDI (Phibro Contract Research Studies, 2018 and 2019) and returned pig performance when poor quality feeds were fed (Schell et al., 1993).
- Adding **AB20** nutritional specialty product to pelleted swine diets is an economically viable option to help improve potential pig profitability.

Reference

Schell, T.C., M.D. Lindemann, E.T. Kornegay, D.J. Blodgett and J.A. Doerr. 1993. Effectiveness of different types of clay for reducing the detrimental effects of aflatoxin-contaminated diets on performance and serum profiles of weanling pigs. *J. Anim. Sci.* 71:1226-1231.

This information has been prepared for industry technical professionals.