Research Notes

Arm & Hammer Animal and Food Production

CERTILLUS Eco Helps Improve Feed Efficiency in Grow-Finish Pigs

CERTILLUS™ Eco contains scientifically selected strains of *Bacillus subtilis* and *Bacillus licheniformis* for use in swine production to reduce ammonia emissions and increase nitrogen retention in manure.

STUDY OVERVIEW

- This study[1] was conducted at the University of Arkansas Swine Research Unit, Fayetteville, Ark., to determine the benefits of feeding CERTILLUS Eco to grow-finish pigs.
- Pigs were randomly assigned to one of two dietary treatments fed throughout the starter (23 to 36 kg BW), grower (36 to 64 kg BW) and finisher (64 to 105 kg) phases, with 28 pens/treatment housing six pigs/pen.
- Control pigs were fed a corn/soybean meal basal diet.
- Treated pigs were fed the basal diet supplemented with 0.05% of a three-strain *Bacillus* product, CERTILLUS Eco, that provided 1.5 x 10^8 CFU of *Bacillus*/g of supplement.
- CERTILLUS Eco consisted of *B. licheniformis* and *B. subtilis* strains specifically selected and formulated for their ability to degrade compounds present in swine manure.
- Pig weight and feed disappearance were measured by pen to determine average daily gain (ADG), average daily feed intake (ADFI) and gain:feed (G:F) ratio.
- Tylosin was included at 0.11 g/kg feed in the starter and grower phases, and at 0.04 g/kg feed in the finisher phase.

RESULTS

- CERTILLUS Eco increased G:F in the finisher phase and in the overall trial (Table 1), resulting in a 5% and 3% improvement in feed efficiency, respectively.

TABLE 1. SOLIDS, NITROGEN AND FIBER COMPOSITION IN SWINE MANURE PIT SAMPLES

	CONTROL	CERTILLUS ECO	SE	*P* =
Starter				
ADG, kg	0.569	0.575	0.012	0.69
ADFI, kg	1.373	1.356	0.030	0.66
G:F	0.415	0.425	0.007	0.29
Grower				
ADG, kg	0.840	0.839	0.016	0.94
ADFI, kg	2.154	2.121	0.035	0.31
G:F	0.391	0.395	0.004	0.43
Finisher				
ADG, kg	0.957	0.976	0.015	0.28
ADFI, kg	2.895	2.820	0.051	0.16
G:F	0.331	0.350	0.006	0.04
Overall				
ADG, kg	0.840	0.845	0.011	0.54
ADFI, kg	2.279	2.228	0.038	0.12
G:F	0.369	0.380	0.003	0.03

CONCLUSIONS

- Pigs fed CERTILLUS™ Eco during the grow-finish production phase converted more body weight per unit weight of feed consumed than Control pigs.
- Most of the improvement in feed efficiency was realized during the finisher phase when pigs are consuming the highest volume of feed.
- Overall, CERTILLUS Eco is expected to improve feed efficiency by 3% when fed to grow-finish pigs.

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1 Davis ME, et al. Effect of a *Bacillus*-based direct-fed microbial feed supplement on growth performance and pen cleaning characteristics of growing-finishing pigs. *J Anim Sci* 2008;86:1459-1467.