TECHNOTES

Volume 1, Issue 8

SWINE

SPRAY-DRIED PLASMA (SDP) – A POWERFUL OPTION FOR REDUCING RELIANCE ON ANTIBIOTICS

There is a rapidly increasing global movement to ensure the judicious use of antibiotics at farms producing milk, meat, eggs, fish and seafood to reduce the prevalence of antibiotic-resistant pathogens that affect human health. The result of these regulatory changes will reduce the length of time antibiotics can be used, eliminate the use of antimicrobial and chemotherapeutics agents at farms that are also used in human medicine, and eliminate the use of these products at sub-therapeutic levels in feed.

Swine producers need alternatives for sub-therapeutic and therapeutic antibiotics as health management tools that can effectively maintain the welfare and productivity of pigs while eliminating or reducing use of antibiotics.

WEANED PIG GROWTH IMPROVED WHEN FED SDP DIETS ± ANTIBIOTICS

A meta-analysis of 143 experiments shows that weaned pigs fed diets with spray-dried plasma have better average daily gain (ADG), average daily feed intake (ADFI) and Feed to Gain ratio (FG) regardless of the presence or absence of antibiotics in the diet. Pigs fed diets with SDP + antibiotics were 0.5 kg (1.1 lb) heavier by 14 days after weaning. Pigs fed antibiotic-free diets with SDP were 0.7 kg (1.3 lb) heavier with better feed efficiency.

	0-14 Days Post-Weaning			
ANTIBIOTICS IN DIET	n	ΔADG (g/d)	ΔADFI (g/d)	ΔFGR (g/g)
Yes	110	+36*	+43*	-0.02
No	33	+41*	+32*	-0.34*

n: Number of trials; * p<0.05. Improvement in g/d of ADG or ADFI and in g/g FG of SDP diet over control diets.

Torrallardona D. 2010. Spray dried animal plasma as an alternative to antibiotics in weanling pigs-A review. Asian-Aust. J. Anim. Sci. 23:131-148.

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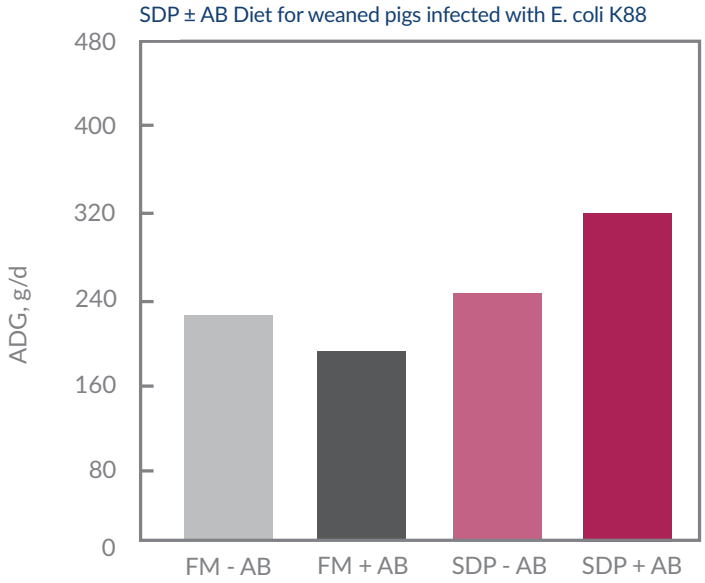
DIETS WITH SDP ± ANTIBIOTICS BENEFIT GROWTH OF WEANED PIGS INFECTED WITH E. COLI.

Growth-promoting antibiotics (AB) are commonly used to reduce the severity of E. coli infection in pigs during the stressful post-weaning period. A study compared diets containing either 6% SDP or 6% Herring fish meal ± colistine (250 mg/kg) and amoxicillin (500 mg/kg) fed to weaned pigs infected with E. coli K88. E. coli infected pigs fed the SDP diets had better growth than pigs fed fish meal diets and medicated diets supported better pig growth than non-medicated diets. The authors concluded that diets with spray-dried plasma could be an effective alternative to antibiotics for pigs infected with E. coli.



FM: fish meal diets; SDP: spray-dried plasma diets; AB: ±Antibiotic; SDP vs FM, $p<0.05$; -AB vs +AB, $p<0.05$.

BOTTOM LINE

- Diets containing SDP support pig growth during the stressful post-weaning period regardless of the presence or absence of antibiotics in the feed.
- Diets containing SDP can support growth of weaned pigs infected with E. coli and reduce reliance on use of sub-therapeutic antibiotics.
- SDP is a natural feed ingredient that does not promote the development of antibiotic resistant pathogens.

Bosi et al., 2004. Spray-dried plasma improves growth performance and reduces inflammatory status of weaned pigs challenged with enterotoxigenic Escherichia coli K88. J Anim Sci. 82:1764-72.