

# Spray-Dried Porcine Plasma Improves the Performance of Weaner Pigs Regardless of Weaning Weight

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Two major problems facing the Australian pig industry with respect to weaning of pigs are first, the low feed intake in the first 7-14 days following weaning, and second, the more variable and poorer performance of light-for-age pigs (eg. <5.0 kg at 21 days). Spray-dried porcine plasma (SDPP) is used extensively in diets for weaner pigs in some parts of the world because of its capacity to enhance feed intake after weaning, which is thought to be linked to its IgG concentration (eg. van Dijk *et al.*, 2001), however we are unaware of any research examining SDPP under Australian conditions. The main objective of this study was to see whether weaner diets containing SDPP could assist light-for-age pigs to perform better in the post-weaning period.

A total of 96 pigs weaned at 21 d were used in a 2x2 factorial experiment with the respective factors being (1) light- (4.9±0.67 kg liveweight (LW)) or heavy- (6.9±0.73 kg LW) for-age pigs and (2) a diet containing SDPP (50 g/kg and 25 g/kg, for Stage I and II, respectively) or a control diet not containing SDPP. Stage I diets were fed for the first week and Stage II for the following 2 weeks until the experiment ceased at 21 d after weaning. The SDPP was included in diets at the expense of soybean meal and fishmeal. Concentrations of IgG, IgM and IgA in the SDPP were 10.8, 3.3 and 0.7%, respectively. Each treatment had 8 replicates (pens) with 3 pigs per pen. Pigs were weighed weekly and feed refusals daily to calculate performance indices. One pig per pen, randomly selected, was bled on d 7 and 14 to measure circulating levels of Ig and plasma urea nitrogen (PUN). Data were subjected to a two-way analysis of variance (Table 1).

**Table 1.** Performance of light- and heavy-for-age pigs fed diets with or without spray-dried porcine plasma (SDPP) in the first week post-weaning (n=8).

	Light pigs		Heavy pigs		SEM	P value	
	Control	SDPP	Control	SDPP		DIET	LW
<b>Week 1</b>							
ADFI (g/d)	129	183	161	215	11.4	<0.001	0.023
ADG (g/d)	63	134	92	164	1.04	<0.001	0.023
FCR (kg/kg)	2.38	1.51	2.06	1.19	0.21	0.002	0.214
IgG (mg/ml)	5.68	6.32	8.49	6.18	0.713	0.254	0.076
PUN (mmol/l)	5.25	3.83	5.27	3.85	0.219	<0.001	0.941
<b>Overall</b>							
ADFI (g/d)	324	351	394	421	0.12	0.121	<0.001
ADG (g/d)	205	225	253	274	0.09	0.090	<0.001
FCR (kg/kg)	1.59	1.56	1.57	1.54	0.32	0.315	0.652

n, number of replicates; SEM, standard error of mean; ADFI, average daily feed intake; ADG, average daily gain; FCR, feed conversion ratio; IgG, immunoglobulin G; PUN, plasma urea nitrogen.

The inclusion of SDPP in the diet improved performance of both light- and heavy-for-age pigs in the first week after weaning (Table 1). Such effects disappeared in the following 2 weeks and over the 3-week study, pigs supplemented with SDPP gained 20 g more per d than the control pigs (P = 0.090). On d 7, PUN was lower (P<0.001) in pigs fed SDPP than in control pigs, suggesting an increased efficiency of dietary protein utilisation as a result of SDPP supplementation. There was no difference in IgG levels between treatments. The inclusion of 50 g/kg SDPP in pig diets in the first week following weaning improves pig performance.

VAN DIJK, A. J., EVERTS, H., NABUURS, M.J.A., MARGRY, R.J.C.F. and BEYNEN, A.C. (2001). *Livestock Production Science*. **68**:263-274.

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