

(continued from page 9 Ractopamine ...)

Table 3 The effect of RAC and lysine concentration on nitrogen balance in finishing barrows¹

Item	N Intake, g/d	N Digestibility, %	Urinary N Excretion, g/d	Faecal N Excretion, g/d	Total N Excretion, g/d	N Retention, g/d
RAC (ppm)						
0	80.5	84.4	28.5	12.6	41.1	39.4
5	84.1	83.2	25.5	14.1	39.6	44.5
10	77.0	83.8	23.3	12.6	35.9	41.1
SEM	1.43	0.26	0.95	0.37	1.12	1.03
Lysine (g/Mcal)						
1.75	76.0	83.0	24.6	13.0	37.6	38.4
2.25	80.4	83.7	24.1	13.2	37.3	43.0
2.75	85.2	84.8	28.6	13.1	41.7	43.6
SEM	1.44	0.26	0.96	0.37	1.13	1.07
Sample Period (days)						
d 6-8	77.1	83.7	24.1	12.7	36.8	40.3
d 13-15	89.0	83.9	27.4	13.5	41.0	43.0
SEM	1.10	0.20	0.74	0.27	0.84	0.79
Statistics P values						
RAC	0.057	0.017	0.018	0.031	0.033	0.102
Lysine	0.053	0.186	<0.001	0.221	0.276	0.337
RAC x Lysine	0.846	0.994	0.060	0.840	0.769	0.125
Sample Period	<0.001	0.051	0.025	0.022	0.014	0.828

¹ Data expressed as least square means. Data analyzed as repeated measures.

Table 4. Calculated water and nutrient balance for the finishing period (95-120-kg BW)¹

Item	RAC (mg/kg)		
	02	52	102
Feed Intake (as-fed), kg	60.8	54.4	51.0
N Intake, kg	1.5	1.4	1.3
Water Intake, liters	157.5	134.8	124.4
Water Excretion, liters ³	73.2	60.4	54.6
Urine Output, liters	66.9	54.1	48.8
Fecal Output (dry basis), kg	8.4	8.3	7.5
N excreted, kg	0.8	0.7	0.6
N retained, kg	0.8	0.8	0.7

¹ Except days to market, which were obtained from the growth experiment, calculations were based on results obtained in the metabolism experiment.

² Pigs fed ractopamine were considered to reach market weight (120-kg) in 17 days from 95-kg and pigs fed no ractopamine were considered to reach market weight in 19 days from 95-kg

³ Water excretion is the sum of urine output and fecal moisture

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The plant extract Micro-Aid, has unexpected effects on litter size.

Micro-Aid® (DPI Global) is an all-natural product, produced from a plant extract which has been marketed primarily as an aid to reduce the emission of ammonia and odours from livestock production facilities. However, due to reports that colostrum from sows fed Micro-Aid® had increased levels of immunoglobulins a study was conducted at PSCI to determine the impact of Micro-Aid, on weight gain in piglets.

A total of 196 parity 2 to 7 sows were randomly assigned to one of 3 treatments; 1) Control, no Micro-Aid; or Micro-Aid, included in the gestation diet at 125 ppm for either 2) 5 or 3) 30 days pre-farrowing. In this study the inclusion of Micro-Aid had no effect on colostrum IgG levels or on serum IgG measured at birth in the piglets. Micro-Aid in the sow's diet for 30 days pre-farrowing resulted in one additional piglet born alive per litter (P < 0.01 Chi-square analysis). The increase in litter size appears to be primarily due to a decrease in stillborns rather than through increased IgG delivered to the pigs prenatally.

There was no effect of Micro-Aid, on colostrum IgG levels or on serum IgG measured at birth in the piglets. Moreover, there was no beneficial effect of Micro-Aid inclusion on piglet growth from birth until weaning (day 19).

One additional piglet per litter or more than two

additional piglets per sow per year is a significant improvement in the reproductive efficiency of sows and the mechanism responsible for this warrants further research.

Funding for this study from DPI Global is appreciated.

Table 1. The effect of Micro-Aid in the diet on either 5 or 30 days pre-farrowing on litter size and body weights of piglets. 

Parameter		Treatment			SEM	P value P values, comparisons			
		Control	MicroAid5	MicroAid30		Trt	Trt 1 vs 3	Trt 1 vs 2	Trt 2 vs 3
Number of litters	n	65	66	65					
Total pigs born live	n	745	751	811					
Stillborns	n	65	40	44					
Mummies	n	7	13	8					
Live pigs/litter, n	Day 0	11.4	11.7	12.4	0.4	0.14	0.05	0.58	0.17
Avg BW, kg	Day 0	1.58	1.55	1.55	0.03	0.59	0.40	0.35	0.93
	Day 5	2.40	2.37	2.30	0.05	0.25	0.11	0.64	0.25
	Day 12	4.38	4.21	4.13	0.08	0.07	0.03	0.11	0.49
	Weaning	7.01	6.81	6.73	0.12	0.22	0.09	0.22	0.64
Total litter wt, kg	Day 0	17.66	17.73	18.88	0.53	0.19	0.11	0.93	0.13