Can flavours be used to increase feed intake of weaner piglets?

By DAVID CRESWELL*

A good feed intake after weaning is a key requirement for young pigs. It hastens the development of the digestive enzyme system, which helps to overcome the negative impact of weaning on gut structure and growth rate.

Flavours (and sweeteners) are commonly used in diets for young pigs as a means of attracting the pigs to dry feed before weaning, and increasing their feed intake after weaning. However, there is sometimes scepticism among nutritionists that flavours, without sweeteners, can positively influence food intake.

One such commercial flavour product was recently tested at the Feed Research Institute, Southern Yangtze University, Wuxi, China. Twelve, 21 day old, Eighteen Sutai weaner piglets (derived from Duroc and Taihu breeds) were allocated to two treatment groups and housed in individual pens (6 piglets/treatment).

The piglets received one of two diets, with or without the flavour (Flavodan FR-404 Apple Delight Powder, Danisco Animal Nutrition). The diets were pelleted and the piglets were fed ad libitum. Piglets were reared in sanitized barns with a 2-day acclimatisation period. Piglet weights and feed intake were recorded weekly during the 4-week trial period. Water was available ad libitum. The house temperature was controlled at 25^{O}C at 3-5 weeks and 22^{O}C at 6-7 weeks.

Composition of the feeds used is shown in Table 1, while the performance results are shown in Table 2 and Figure 1.

Table 1: Composition of diet, kg/t as fed.

Ingredients	3 – 5 weeks	5 - 7 weeks
Corn	570	600
Soybean meal	180	240
Fishmeal	60	60
Whey	100	50
Blood plasma meal	40	0
Soybean oil	20	20
CaHP04/Limestone/Sodium chloride	20	20
Chlorine chloride	2	2
Vitamins/trace minerals	4	4
L Lysine HCl	3	2.9
DL Methionine	0.8	0.8
Medication	+	+
Flavour	0/0.3	0/0.3
ME, Kcal/kg	3205	3205
DE, Kcal/kg	3339	3339
Protein, %	20.8	20.0
Lysine, %	1.50	1.30
M+C, %	0.80	0.75

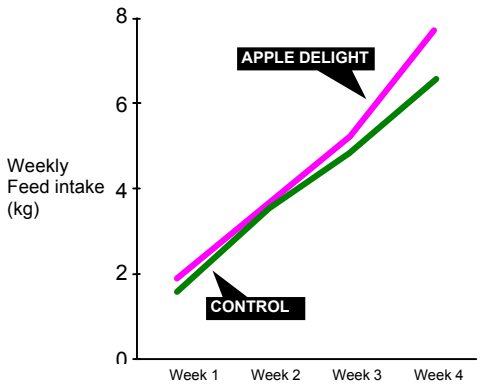
+ contained chlortetracycline 100g/t, sulphamethazine 100g/t, and penicillin 50 g/t

Table 2: Effects of the flavour on piglet performance.

	Control	+ Flavour*	% Improvement
Start weight, kg	4.5	4.5	
Finish weight, kg	14.0 [a]	15.6 [b]	11
Liveweight gain, kg	9.5 [a]	11.1 [b]	17
Feed intake, kg	16.4 [a]	18.4 [b]	12
Feed: gain	1.73	1.67	4

* Flavodan FR-404 Apple Delight Powder 300 g/t feed
a.b.P<0.05

Figure 1: The effect of flavour on the weekly feed intake response of piglets.



	Week 1	Week 2	Week 3	Week 4
Control	1.59	3.39	4.86	6.52
Apple Delight	1.95	3.57	5.23	7.67
P value	0.12	0.57	0.10	0.0005
Improvements (%)	23	5	8	18

Addition of the flavour increased the feed intake of piglets (3-7 weeks) by 12% ($p<0.05$), and increased the weight gain by 17% ($p<0.05$), leading to a 1.6 kg heavier liveweight at the end of the trial.

In this trial the flavour significantly improved feed intake. The increased feed intake is clearly evident throughout the trial (see Figure 1), indicating that the response to the product was independent of piglet age. Increased daily gain with addition of the flavour was the direct result of this higher feed intake. Feed:gain ratio was also numerically improved by 4%.

The flavour dose rate of 300g/t feed took account of the particular fishmeal used, and the medication program. Both were expected to contribute to a reduced feed intake in the young pig, which could be overcome by flavour addition.

In the same trial a creamy type of flavour (Flavodan CV-516 Cool Cream Powder 300 g/t feed) was also tested, and similarly gave significant improvements in feed intake and weight gain.

Suitably formulated and tested flavour products can clearly be useful as a means of maximising early feed intake post-weaning.

** Dr David Creswell is Technical Editor of Asian Pork Magazine (email creswell@zip.com.au)*

Key words: Flavodan, piglet, feed intake, fruity,