

### **Effects of dietary potassium diformate on feed intake, weight loss and backfat reduction in sows: pre-farrowing till weaning .**

Introduction Potassium diformate, a double-salt of formic acid, has been shown in numerous trials to improve health and performance in piglets, growing-finishing pigs and sows. Thus, potassium diformate (KDF) has been approved in the European Union as the only non-antibiotic growth promoter for use in swine. The effect of KDF is often described as strong antimicrobial and digestibility enhancing. Recent regulatory changes have set the minimum dosage guidelines for KDF-usage in sows to 10 kg KDF per ton of feed. The objective of the present study was to assess the effects of KDF on feed intake and condition of crossbred sows at 8 kg per ton feed.

Material and methods The study was carried out on second to fifth-parity crossbred sows (Yorkshire x Landrace) during late pregnancy. The experiment was conducted in Southern Vietnam on two farms. In total, 52 sows (initial weight  $203.2 \pm 18.0$  kg) were used. The sows were randomly allotted to 2 treatment groups. Group 1 served as a control in which sows were fed a complete diet, based on rice, corn and soy, without supplemented antimicrobial agents. Sows of group 2 were fed the complete diet containing 8 kg/t potassium diformate. The experimental feeding of sows started on day 12 prior to farrowing and finished at weaning, which was at 4 weeks post-partum. Body weight and backfat thickness of sows were calculated/measured at the beginning of the experiment, 3 days after farrowing and at weaning. The live weight was calculated with the following formula: body length x (chest circumference)/14400 (kg) - (Chinh, 2010). The body length was measured as the length from the base of the neck to the base of the tail, while the chest circumference was measured immediately behind the front legs. The thickness of backfat of sows was determined using a Renco Lean Meter Backfat Scanner. Data on feed intake, weight loss as well as backfat thickness reduction from farrowing till weaning were recorded and analysed using the t-test. The results are given as mean  $\pm$  SD and a confidence level of 95% was defined for these analyses.

Results Sows fed with potassium diformate at a dosage of 8 kg/t under hot and humid conditions showed no difference in feed intake from 12 days prior to farrowing till 3 days after farrowing. However, the feed intake in treated sows tended to be higher ( $P < 0.1$ ) from 3 days after farrowing onwards. Furthermore, a reduced weight loss ( $P = 0.05$ ) during the weaning period could be monitored. At the same time also the backfat loss tended ( $P = 0.06$ ) to be reduced.

**Table 1** Diet effects on feed intake, body weight loss and backfat reduction in sows

	Control	8 kg/t KDF	P-level
Initial sow weight [kg]	200.2 $\pm$ 17.5	204.2 $\pm$ 18.0	0.25
Feed intake till farrowing [kg/pig/d]	2.33 $\pm$ 0.14	2.36 $\pm$ 0.11	0.41
Feed intake from farrowing [kg/pig/d]	4.64 $\pm$ 0.47	5.08 $\pm$ 0.30	0.096
Weight loss [kg]	18.7 $\pm$ 9.9	13.6 $\pm$ 9.1	0.050
Backfat loss [mm]	2.4 $\pm$ 1.9	1.5 $\pm$ 1.7	0.061

Conclusions These results show that the inclusion of potassium diformate into the diet of sows can improve feed intake and condition. Similar observations have been made by Overland et al. (2009) and in unpublished results from the EU-registration of KDF. It is suggested that also the 8 kg/t inclusion of KDF will still show beneficial effects onto the sow.

The article is quoted from the research results and data reports of well-known international

researchers-hereby express our gratitude for the experimental research support of this product.

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Potassium Diformate, Sodium Diacetate, Calcium Formate