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Impact of Dietary Sodium Diformate (FORMI NDF) in Sows on Suckling Piglets Under Poor Sanitary Conditions

Christian Lückstädt | ADDCON, Bitterfeld-Wolfen, Germany

Takeaways:

- In addition to greater litter weight uniformity, FORMI® NDF (sodium diformate), fed to sows during the last week of gestation and through weaning time resulted in significant increase in:
  - Weight and number of piglets born alive: +1.5 piglets per sow
  - Litter weight at birth: +2.3 Kg
  - Weight of weaned pigs: +0.5 Kg

Data on effect of feeding sows diformates on suckling piglets under commercial conditions are scarce

The application of organic acids and their salts to diets for pigs has been studied extensively under varying conditions (Lückstädt and Mellor, 2011). Despite well-documented effects of diformates on growing pigs, data on their impact when fed to sows during late gestation and lactation, and the subsequent effects on their suckling piglets under commercial conditions are not available. In this trial, a lower dosage (5 kg/t) was used than that normally recommended, to investigate whether further economic improvement could be achieved.

FORMI® NDF can significantly improve sow and piglet performance

This study tested the effects of sodium diformate (FORMI® NDF, ADDCON) fed to sows on their suckling piglets and was conducted under veterinary supervision. Fourteen sows (DanBred) on a commercial farm in Eastern Europe were equally divided into two groups, each containing 7 sows and fed a typical lactation diet (corn-wheat-soy based), containing either 0.5% of NDF, or a negative control without the additive, from one week before farrowing till the end of weaning (day 28). The lactation diet was fed *ad libitum* and daily feed intake measured. The following parameters were monitored at farrowing: number of piglets born alive, individual weight of new-born piglets and litter weight of new-born piglets. At weaning the number of weaned piglets, the individual body weight of weaned piglets and litter weight during weaning was recorded. Data were analysed using the t-test and a significance level of 0.05 was used in all tests.

Feed was well accepted by both groups. Feed intake is only available as pooled data - sows fed the NDF-diet had a numerically higher feed intake compared to the negative control group (+560 g/day, Table 1). At farrowing, the weight and number of piglets born alive increased significantly ($P<0.05$) due to the addition of the additive: live births increased by 1.5 piglets per sow. Litter weight of piglets differed significantly by more than 2.3 kg, for the NDF-fed sows. No difference was observed for the number of weaned piglets per sow although the weaning weight of the piglets at day 28 was highly significantly ($P<0.001$) improved (520 g heavier piglets in the NDF-group), leading to a numerically ($P=0.15$) increased litter weight at weaning of more than 8.5 kg in NDF-fed sows. The uniformity of overall litter weight was also improved. It should be noted that some uncertainty might have resulted from the small sample size.

Table 1. Performance parameters of piglets from sows fed with or without sodium diformate (NDF)

Parameter	Control (n=7)	0.5% NDF (n=7)	P-Value
Daily feed intake sow [kg]	5.18	5.74	-
Piglets born alive, per sow [n]	13.6 ± 1.7	15.1 ± 1.4	0.049
Weight of new-born piglet [kg]	1.41 ± 0.07	1.42 ± 0.07	0.46
Litter weight at birth [kg]	19.11 ± 1.90	21.45 ± 1.99	0.03
Piglets weaned, per sow [n]	10.6 ± 2.4	11.0 ± 1.6	0.36
Weight of weaned piglets [kg]	6.74 ± 0.16	7.26 ± 0.23	0.0003
Litter weight at weaning [kg]	71.17 ± 15.95	79.68 ± 10.59	0.15

As previously reported (Øverland et al., 2009, Lückstädt, 2011, Lückstädt and Petrovic, 2019), lower dosages of sodium diformate in sow diets during the suckling period may indirectly support piglet production.

References

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1707 N. Randall Rd, Suite 300, Elgin, IL 60123

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