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Effect of urinary acidification with specially processed ammonium chloride on the urinary pH of sows

Dr. Ralph Schemmer[1], Dr. Saskia Kehraus[2]

[1]BEWITAL agri GmbH & Co. KG, Germany; [2] Universität Bonn, Institute of animal sciences, Germany

Background:

The health of sows is a decisive factor for successful pig production. Only a healthy and robust sow is able to guarantee a smooth farrowing. Prolonged labour and an increased number of piglets born dead are among the challenges faced by sow farmers around the time of birth. Many sows also suffer from urinary tract infections, particularly in the period close to birth, with all the numerous negative consequences for both sow and piglets. Mastitis-metritis-agalactia syndrome (MMA syndrome) in particular poses a considerable challenge in breeding.

Targeted urinary acidification in sows serves both to reduce urinary tract infections and to improve calcium metabolism. Feeding measures can reliably reduce the Dietary Cation-Anion Difference (DCAD). In addition, the DCAD of the ration is closely correlated with the urinary pH. A lower DCAD increases the release of calcium from the bone and increases the availability of calcium in the blood, which can prevent birth defects caused by hypocalcaemia. At the same time, an acidic urinary environment creates unfavourable conditions for pathogenic germs such as E. coli or A. suis and thus reduces the risk of infections and MMA.

Overall, urine acidification therefore contributes to animal health, better birth processes and increased piglet vitality.

Material and methods:

- The trial took place on a practical farm with 110 DanBred sows in north-west Germany
- Standard lactation feed, four sows per group randomly selected (average litter size of 4.8)
- Urine samples were collected on three days between 6:00-17:30; pH was measured immediately after spontaneous urination
- Feeding daily at 6.30 am, **BEWI-FATRIX®** Anionic added as top dressing
- Starting values: pH 7.0-7.5; target range: pH ~6.0
- Supplement of 25 g **BEWI-FATRIX®** Anionic from three days before to three days after birth
- The allowance was calculated on the basis of feed analyses and the urine pH values recorded on day 0

Conclusion:

The available results clearly show that feeding **BEWI-FATRIX®** Anionic in the last days of gestation and early days of lactation reduces the urinary pH of sows quickly and effectively. By lowering the urinary pH, the risk of infection can be minimised, the occurrence of MMA symptoms reduced and the health of the sow and the rearing performance of the piglets improved.

The results of the present study allow the overall conclusion that targeted acidification of the urine around parturition can be integrated as a modular element in modern health and feeding strategies that focus on both animal welfare and performance. By using **BEWI-FATRIX®** Anionic, farms can make a valuable contribution to keeping sows healthy around the time of birth.

Results:

- Initial values of pH 7.3 in the test group and 7.0 in the control group
- Reduction by **BEWI-FATRIX®** Anionic to pH 6.5 after two days and to pH 5.5 after seven days
- Control group remained unchanged with values between 7.0 and 7.1
- No influence on feeding behaviour or general condition of the sows, good acceptance even peripartum
- Low dosage of **BEWI-FATRIX®** Anionic due to strongly negative DCAD sufficient for lowering into the target range
- The significant pH reduction creates an unfavourable environment for bacteria and can thus reduce the risk of urinary tract infections

Table 1: Influence of **BEWI-FATRIX®** Anionic on the urine pH value of sows.

	Sow No.	Day 0	Day 2	Day 7
Test group				
BEWI-FATRIX® Anionic	1	7.2	5.2	4.9
BEWI-FATRIX® Anionic	2	7.3	7.1	5.5
BEWI-FATRIX® Anionic	3	7.1	6.8	6.3
BEWI-FATRIX® Anionic	4	7.4	6.3	5.1
Mittelwert		**7.3**	**6.5**	**5.5**
Control group				
without supplement	5	6.5	7.1	7.2
without supplement	6	7.0	7.1	6.6
without supplement	7	7.2	7.5	7.3
without supplement	8	7.2	7.2	7.3
Average value		**7.0**	**7.2**	**7.1**

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Author:
Dr. Ralph Schemmer
BEWITAL agri GmbH & Co. KG
Industriestraße 10
DE-46354 Südlohn-Oeding
E-Mail: r.schemmer@bewital.de