

# Research Now

## Availa® Sow Improved Somatic Cell Count and Litter Weaning Weight

### Introduction:

This study was designed to assess the effects of supplementation with Availa®Sow (Availa®Zn, Availa®Mn and Availa®Cu) on sow and piglet performance and composition of colostrum and milk.

### Experimental Design:

Forty sows were randomly assigned to 1 of 2 dietary treatments at weaning based on parity number, backfat thickness and BW. Sows remained on their respective diets for an entire gestation and lactation period.

### Treatments:

ITM: 110 ppm Zn from ZnO, 40 ppm Mn from MnO, and 15 ppm Cu from CuSO<sub>4</sub>

AvTM: 60 ppm Zn from ZnO + 50 ppm Zn from Availa-Zn, 20 ppm Mn from MnO + 20 ppm Zn from Availa-Mn, and 5 ppm Cu from CuSO<sub>4</sub> + 10 ppm Cu from Availa-Cu



### Results:

Similarities between dietary treatments (AvTM vs. ITM):

- Lactation feed intake, backfat thickness, sow body weight, total number of pigs born alive, and total number of pigs weaned,  $P > 0.44$
- Concentration of protein, fat, and lactose in colostrum and milk,  $P > 0.25$

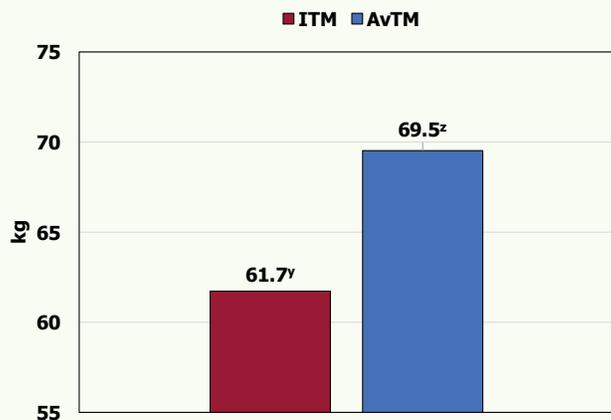
Improvements observed in sows consuming AvTM:

- Decreased number of mummified fetuses,  $P = 0.04$
- Tendency for decreased stillbirths,  $P = 0.10$
- Increased litter weaning weight,  $P = 0.05$
- Tendency for greater homogeneity of piglet weaning weights,  $P = 0.11$
- Lower somatic cell count in colostrum and milk,  $P = 0.05$
- Numerically greater IgG in colostrum ( $P = 0.35$ ) and piglet serum ( $P = 0.22$ )

Supplementing sows with Availa-Sow decreased somatic cell count and increased litter weaning weight.

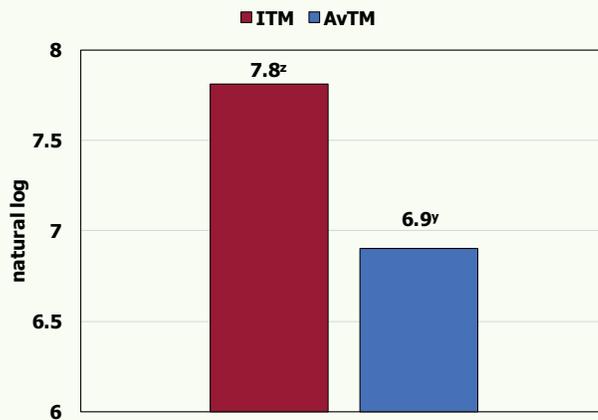
*Note: Reproductive response to Availa-Sow should be interpreted with care due to low numbers of sows in the study.*

### Litter Weaning Weight



<sup>y,z</sup> Means lacking a common superscript letter differ,  $P = 0.05$

### Somatic Cell Count



<sup>y,z</sup> Means lacking a common superscript letter differ,  $P < 0.05$

# Abstract

**Effect of sow diet trace mineral source on colostrum and milk composition and growth of piglets.** C. Rapp<sup>1</sup> and J. Morales<sup>2</sup> <sup>1</sup>Zinpro Corporation, Akkerdistel 2E, 5831 PJ Boxmeer, The Netherlands, <sup>2</sup>PigChamp Pro Europa S.L., Santa Catalina, 10, 40003, Segovia, Spain.

Trace minerals are essential nutrients that might limit performance of the lactating sow and thus decrease growth rate of suckling pigs. This study evaluated the effect of sow diet trace mineral source on composition of colostrum and milk as well as piglet weaning weight. At weaning, a total of 40 sows were allocated to one of two dietary treatments: 1) 110 ppm Zn as ZnO, 40 ppm Mn as MnO and 15 ppm Cu as CuSO<sub>4</sub> (ITM) or 2) 50 ppm Zn, 20 ppm Mn and 10 ppm Cu from complexed sources (Availa<sup>®</sup>Zn, Availa<sup>®</sup>Mn, Availa<sup>®</sup>Cu, Zinpro Corporation, Eden Prairie, USA; CTM) replacing equal amounts of trace minerals in inorganic form. Animals remained on dietary treatments for an entire gestation and lactation period. Lactation feed intake, back fat thickness, sow body weight, and numbers of total pigs born, pigs born alive and pigs weaned were not affected by dietary treatment ( $P > 0.44$ ). The number of mummies was lower ( $P = 0.04$ ) and stillbirths tended to be decreased ( $P = 0.10$ ) in the CTM treatment (0.0 vs. 0.3 and 0.4 vs. 0.9 pigs/litter for CTM and ITM, respectively). Litter weaning weight was increased (69.5 vs. 61.7 kg,  $P = 0.05$ ) and homogeneity of pig weaning weights tended to be higher (85.5 vs. 83.3%;  $P = 0.11$ ) in the CTM treatment. Protein, fat, and lactose concentrations in colostrum and milk were not affected by dietary treatment ( $P > 0.25$ ). Overall somatic cell count in colostrum and milk was lower ( $P = 0.05$ ) for the CTM treatment (6.90 vs. 7.81 ln/mL). IgG concentration in colostrum and piglet serum were numerically higher in the CTM treatment (52.0 vs. 41.7,  $P = 0.35$ ; 43.6 vs. 40.6 mg/mL,  $P = 0.22$ , for CTM and ITM, respectively). In conclusion, supplementing sow diets with CTM is a means to improve sow reproductive performance, decrease somatic cell count and increase litter weaning weight.

**Key words:** Availa-Sow, immunoglobulin, piglet, sow

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