Effect of dietary organic trace minerals for sows on piglet vitality and milk composition

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Anja Varmløse Strathe
Associate Professor
Department of Veterinary and Animal Sciences
Section for Production, Nutrition and Health
avst@sund.ku.dk

UNIVERSITY OF COPENHAGEN

I ♥ CPH Pig

Are there differences between different types of organic trace minerals?

- Higher availability in organic vs. inorganic trace minerals (TM)

- Many types of organic TM -> many price levels
  - Glycinated (cheaper type): Mineral bound in complex with glycine
  - Amino acid chelate (more expensive): Mineral is bound to amino acid

  In this study we focus on cupper, manganese and zinc

Why are cupper, zinc and manganese important to the sow?

- Important for claw health -> improved longevity of sows?

Higher availability of Zn, Mn and Cu:

- Fewer piglets with low birth weight, higher litter size and weight at farrowing, more vital piglets
  - Many TM are transported from sow to foetuses and colostrum

- Impact on milk production -> higher weaning weight -> better development? and more prepared for weaning?
  - The transfer of TM to milk is more limited than for colostrum

Experimental design

- Sows were fed experimental diets from previous farrowing -> next weaning

- Two groups:
  - Organic glycinated TM
  - Organic amino acid chelated TM

Standard diet	Glycinated TM diet	Amino acid chelated TM diet
Copper sulphate	10 mg/kg copper chelate glycine hydrate	10 mg/kg copper amino acid chelate
Manganese oxide	20 mg/kg Manganese chelate glycine hydrate	20 mg/kg manganese amino acid chelate
Zinc oxide	50 mg/kg zinc glycine chelate	50 mg/kg zinc amino acid chelate

Effect on piglet vitality at farrowing

- 743 piglets from 39 litters were weighed and measured individually within 8 hours of birth

- Measures of piglet vitality:
  - BW at birth -> not the best predictor of performance
  - BMI = birth weight / crown-rump length^2 -> good predictor of performance
  - Abdominal circumference -> good predictor of performance
  - Ponderal Index = birth weight / crown-rump length^3
  - IUGR-score -> not very objective
  - Crown-rump length

More results will come…

- SEGES Innovation:
  - Claw health before and after use of different organic TM
  - Birth weight of piglets
  - ADG of the litter, litter size and litter weight at weaning

Thank you for listening!

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