

IMPROVED SOW LONGEVITY AND WELFARE WITH A CHELATED TRACE MINERAL BLEND

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Background

The replacement rate of sows in the major EU, and US breeding herds is between 40 and 50%. This is unacceptable from both a welfare and economic viewpoint.

Trace minerals play key roles in immune function, structural integrity of tissues, defence against oxidative stress and enzymatic activity.

Supplying sows with a source of highly bio-available trace minerals may be an effective method of improving lifetime performance of the sow by reducing the involuntary removal of young sows from the breeding herd for locomotory and health reasons.

Objective

To examine the benefits of feeding sows a diet supplemented with a chelated trace mineral blend (OTM) MINTREX®, Novus International, Inc. which utilizes the hydroxy analogue of methionine as the organic ligand.

Table 1: Trial Design

Two Sister Farms; Common Grandparent Farm		
Sows (PIC C22 and C29)	Control, ITM	Treatment, OTM
	6400	6400
Target Mineral Levels	Cu 16.5 mg/kg; Mn, 38.5mg/kg; Zn, 165mg/kg	
Trace Mineral Supplementation	100% ITM	50% ITM: 50% OTM

- Feeding was initiated at weaning and continued throughout the breeding lifetime of the animals.
- Diets were based on Maize, Soya and DDGS
- The trial was conducted between April 2007 and April 2010.

Results

Table 2: Trace Mineral Source and Removal Rate of Gilts

	ITM	OTM	P
Removal Rate – First Service to Farrowing (%)	8.4	7.5	P<0.03

Table 3: Trace Mineral Source and Herd Retention Rate

	ITM	OTM	P
Retention rate to Parity 4 (%)	61.2	68.4	P<0.001

Figure 1: Removal Rate of Gilts and Sows due to Locomotory Problems

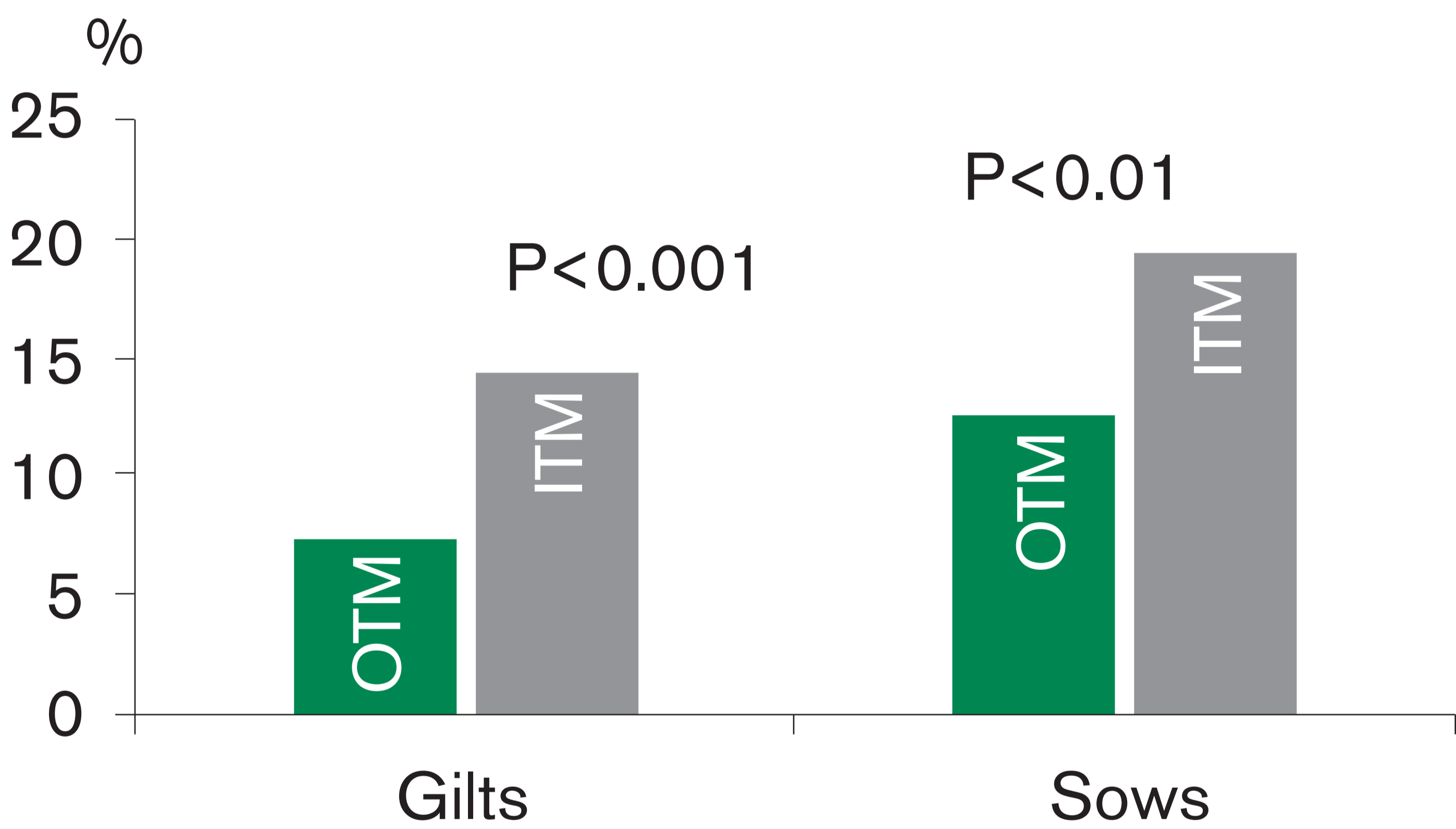


Table 4: Trace Mineral Source and Involuntary removal rate of Gilts

	ITM	OTM	P
Involuntary Removal rate(%)	26.5	17.5	P<0.001

Conclusions

MINTREX® OTM are beneficial for:

- Maintaining sow skeletal health
- Improving welfare assessed by higher herd survival rates to Parity 4
- Lowering removal rates due to locomotory problems