Calcium and Phosphorus levels in milk from hybrid (LY) sows during different stages of lactation

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OBJECTIVE

To measure the Calcium (Ca) and Phosphorus (P) levels in sow milk during different stages of lactation, and to see if there was a difference in Ca and P levels in milk collected from teats at the anterior part of the udder compared to teats from the posterior part of the udder. This was a preliminary data collection for a study where the objective will be to investigate the effect of mineral content in lactation feed on sow productivity and bone mineralization.

MATERIALS AND METHODS

- 40 milk samples, collected in 4 ml containers
- 12 milk samples from 1st parity sows, 9 from 2nd parity sows, and 19 from 3-6th parity sows
- At weaning,10 IU of Oxytocin was administered intramuscularly to ensure milk let down
- The milk samples were analysed for Ca and P levels with an ADVIA 1650 system (Siemens Medical Solutions Diagnostics Inc., Tarrytown, NY, USA).
- Five weeks lactation period
- Loose housed sows

Statistical analyses:
The data were analysed in SAS 9.1 2003 edition, by performing a paired-samples t-test and a two-way factorial ANOVA analysis.

RESULTS

Table 1: Mean Ca and inorganic P levels at different stages of lactation.

Time of measurement	Ca (mg/dl) ± SEM	Inorganic P (mg/dl) ± SEM
Day of parturition	77.0 ± 3.6	49.2 ± 2.0
19-21 days postpartum	168.2 ± 5.2	85.5 ± 2.5
Weaning*	230.9 ± 7.6	94.0 ± 2.3

* Average lactation length was 33.2 days.

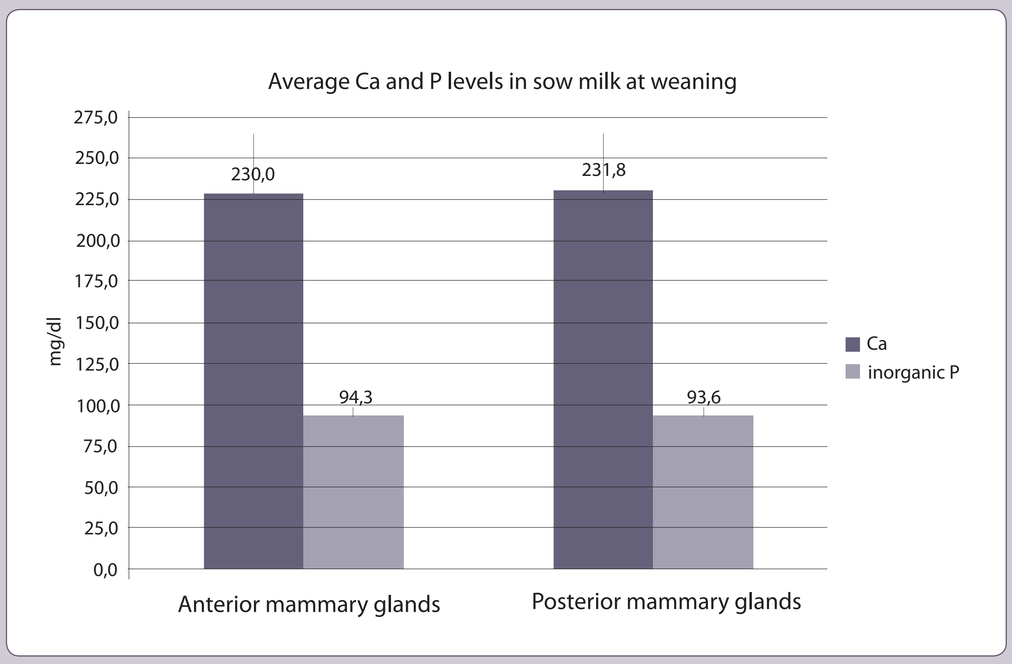

Figure 1: A comparison of mean Ca and P levels in sow milk at weaning in samples from teats at the anterior part of the udder and from teats at the posterior part of the udder.

CONCLUSION

The data shows that Ca and P levels in sow milk increase throughout lactation ($p<0.0001$), and that Ca and P levels were not affected by the sows' parity. No difference was found in the mean Ca or P levels in sow milk from teats at the anterior part of the udder compared to teats at the posterior part.

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