MILK COMPOSITION OF SOWS FROM 0 TO 14 DAYS POSTPARTUM

Session 06/10 nitrayova@cvzv.sk

Nitrayová S., Kirchnerová K., Brestenský M., Patráš, P.

Animal Production Research Centre Nitra, Institute of Nutrition, 951 41 Lužianky, Slovakia

The porcine mammary gland starts to produce colostrum before parturition and it is gradually replaced by mature milk from around 24 to 36 hours after partum. As sow milk provides the chief nutrient source during the natural suckling period of the piglet, it is reasonable to assume that the composition and quantity of milk produced by sows is an important factor in successful piglet production.
The selected qualitative milk parameters (dry matter, fat, protein, lactose, urea and pH) were determined in 48 samples of sow's milk with the aim to measure their changes during lactation.

Methods

Through the experiment 12 lactating sows (second to fourth lactation) were fed by feedstuff for lactating sows in daily amount 3 kg/day prior to partum and 4.8 - 7.2 kg/ day postpartum depending on the number of piglets in the litter. Water was offered *ad libitum*. The samples of milk were collected by hand-milking on the day of partum, and on the 2nd, 7th and 14th day postpartum.

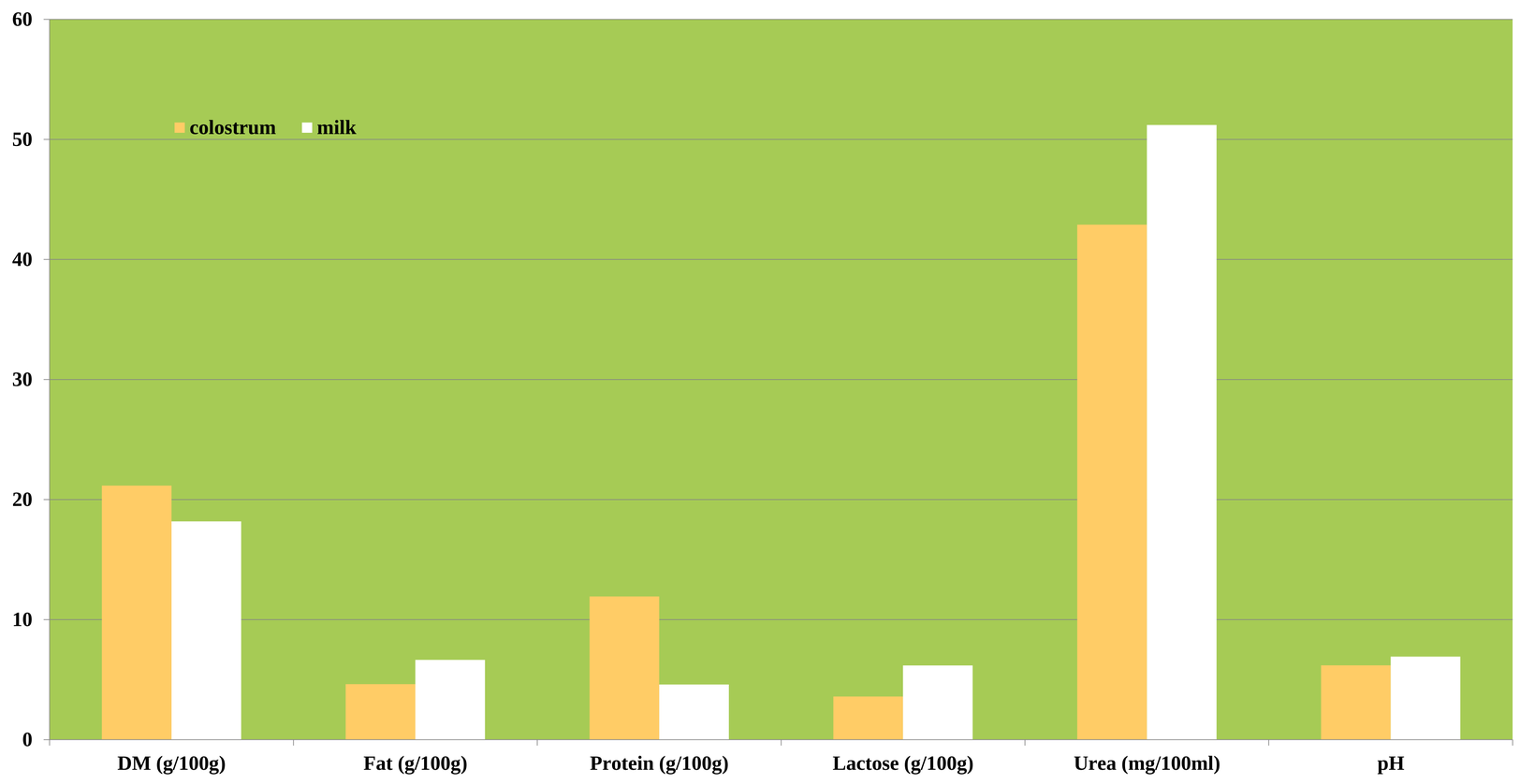
Results and Discussion

Within the experiment there were no health problems. Average crude protein feed intake during the lactation was 1029.8 g/day. The mean litter size was 12.3 piglets.
The data on the mammary secretions of sows presented in this report are in general agreement with results established earlier by other researchers.

Table 1: Composition of sow's milk throughout 14 days of lactation

Day postpartum	0	2	7	14
Dry matter (g/100g)	21.16 ± 4.37	17.98 ± 1.94	18.04 ± 1.74	18.18 ± 1.70
Fat (g/100g)	4.62 ± 1.63	6.11 ± 1.70	6.32 ± 1.73	6.64 ± 1.61
Protein (g/100g)	11.93 ± 4.31	5.70 ± 0.55	4.79 ± 0.25	4.59 ± 0.53
Lactose (g/100g)	3.59 ± 0.91	5.28 ± 0.43	6.16 ± 0.20	6.18 ± 0.22
Urea (mg/100ml)	42.9 ± 0.22	52.15 ± 12.89	48.25 ± 6.64	51.2 ± 5.29
pH	6.17 ± 0.22	6.62 ± 0.14	6.77 ± 0.20	6.92 ± 0.18

Graf 1: Comparison of sow's colostrum and milk



The change from colostrum to mature milk is accompanied by large changes in the composition of porcine mammary secretions. In colostrum, levels of dry matter and protein were high while those of fat, lactose, urea and active acidity were comparatively low.

Conclusion

Increased knowledge regarding the quality of the sow's milk has contributed to the overall understanding of piglet survival and growth. The measured values should provide a reliable groundwork for future experiments in animal husbandry.

Acknowledgments: This article was written during realization of the project "BELNUZ No. 26220120052" supported by the Operational Programme Research and Development funded from the European Regional Development Fund.