

8 Summary

NUTRITION OF SUCKLING COW HERDS KEPT AT PASTURE THROUGHOUT THE YEAR - SELECTED LOCATIONS IN THE LAND BRANDENBURG -

The main aim of the thesis was to analyse the supply and nutrition situation of suckling cows, which were kept out at pasture throughout the year, and of those kept in stable. During the grazing season, the animals exclusively lived on grass. In winter, roughage was given as the main food source. In addition, mineral food was provided year round. The investigation period covered one year. The food supply for six suckling cow herds with a total number of 311 suckling cows, their calves, heifers, and the bulls was examined. The animals were grazing on a territory of approximately 1200 ha pasture.

The analyses of the food samples showed that the animals were very well supplied with mineral elements (Ca, P, K, Na, Mg) at the beginning of the grazing season (May till August). Towards the end of the grazing season (September till November) the supply was marginal. It was not sufficient for additional milk productivity. As to the trace elements: the elements of Cu, Zn and Mn were already scarce in spring and summer and not sufficient for further milk productivity. The herds were highly undersupplied with Se. Only Fe was available in abundance. It even considerably transgressed the toxic thresholds in spring. The herds were well supplied with raw protein and energy in spring and summer. In fall, both decreased and were insufficient for milk production.

In winter, the situation deteriorated. Only the mineral elements Ca and K were taken in with the basic food in a sufficient quantity. The supply with P, Na and Mg was no longer sufficient. For milk productivity it was much below standard thresholds. The herds suffered from malnutrition with all trace elements except for Fe. Raw protein and energy were just enough to meet the daily requirements, but not sufficient for milk productivity or breeding.

The investigation of the mineral food clearly showed that its composition in spring and summer almost covered the requirements of the animals, except for Se. In fall and winter, the concentration of all the mineral and trace elements had to be enriched. The average intake of mineral food resulted in only one fifth of the recommended amount. This quantity would meet the needs during the grazing season. In winter, however, the animals would still be undersupplied with trace elements. In order to improve the intake, the acceptance of the feed has to be increased and a better management should provide food protected against impurity and weather impacts.

In principle, it is possible to keep the animals out at pasture all year round, even in winter, under the precondition of a guaranteed acceptance of mineral food and a minimum intake of dry matter of 10 kg/ animal a day, preferably silage, which is qualitatively superior to hay.

The investigation showed that pastures yielded a higher amount of dry matter, when additionally cut or having horses graze after the season. Newly cultivated grazing land was not only more productive, but also resulted in an almost doubled percentage of raw protein and increased contents of Ca, P and Cu. The energy and the Zn content only slightly rose, Se remained unchanged.

Due to a considerable lack of Mg, three cows died after calving in winter. The calf birth and survival rates lay between 90% and 98%. The calves daily gained 1140 g of weight (average) and showed good weight when weaned. All suckling cows kept their weights from one year to the other. To conclude, no deficits could be proven – even under economical aspects of the livestock - after eight years of extensive suckling cow farming although seasonal shortcomings in the food supply could be documented. From the veterinarian point of view, however, the question may arise, if a cyclical malnutrition particularly in winter will not cause any long-term consequences.