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Palatability of two artificial feeds for reindeer

Abstract: Two groups of 15 reindeer were used to test the palatability of two artificial diets. None of the animals had experienced the diets before. Trials were carried out from April to mid May. Each group of animals was kept in a separate corral (600 sq. meters). Both groups were fed lichens for three days before trials began. Then they were offered a concentrate feed (RF-80) or «Mill Waste Product» (MWP) *ad libitum*.

Both groups ate little or nothing for the first three days of the trial and so lichens were mixed with the two experimental feeds. The mean voluntary food intake of the RF-80-group increased from 0.8 Kg/day/animal to 1.8 Kg/day/animal after three weeks. A mixed feed, RF-80/lichen, was only used the first day for animals in the RF-80 group. Reindeer refused to eat MWP for twelve days despite mixing it with lichens. They were then offered RF-80 *ad lib.* without a mixture of lichens. The mean voluntary intake of these animals increased from 1.3 Kg RF-80/day/animal on day 13 to 2.3 Kg/day/animal by day 26.

Two calves in the MWP-group got diarrhoea after refeeding with RF-80.

Key words: Emergency feeding, types of feed, chemical composition, problems

Rangifer, Special Issue No. 4: 61–62

Introduction.

From time to time it is necessary to offer reindeer supplemental feed. Harvested natural forage, lichens, hay and silage have been used successfully (Helle, T. et al. 1982, Syrjäälä, L. 1982). However, concentrates are easier both to handle and to store, and may be necessary to ensure an appropriately balanced diet. Artificial feeds for reindeer (Jacobsen, E. et. al. 1979) and other domesticated species have been used with some success. It is important that the animals tolerate such diets well because in practical husbandry it is impossible to control how much food each animal eats.

This study investigated whether reindeer which had no experience of commercial diets would eat concentrates without transitional feeding and whether *ad lib.* feeding of commercial diets causes diarrhoea.

Material and methods.

Thirty reindeer were penned in two groups each consisting of 8 calves and 7 yearlings/adults. None of these reindeer had ever been offered artificial feed before. The reindeer were fed with lichen three days before trials started.

The two diets tested were Reindeer feed 80 (RF-80); (Sletten, H. 1987) and «Mill Waste Product», suitable for young cattle (Matre, T. 1981). The chemical composition of the diets is listed in Table 1.

Both groups of animals were offered the experimental diets *ad libitum* for three days. During this period all the animals in both groups refused to eat. On day 4 lichens were mixed with the foods. Reindeer in the RF-80 group then started to eat concentrate and they were not offered lichens after this day. Animals in the MWP-group did not eat MWP despite mixing it

Table 1. The chemical composition of «Mill Waste Product» (MWP) and Reindeer feed -80 (RF-80), presented as percent of dry matter.

	MWP	RF-80
Dry matter	88.2	90.4
Organic matter	92.2	87.9
Crude protein	10.6	17.2
Ether extract	3.3	7.2
Crude fiber	17.3	14.5
NFE	61.0	49.0
Ash	7.8	12.1

with lichens for twelve days. After this period this group was successfully fed with RF-80 *ad libitum*. The animals had free access to snow or tap water throughout the trials.

Results.

All reindeer at first refused to eat either RF-80 or MWP. Reindeer accepted RF-80 when it was mixed with lichens, their mean voluntary intake started at 0.8 Kg/day/animal on the first day, increasing to more than 1.8 Kg/day/animal after three weeks (Fig. 1). Reindeer refused to eat MWP for twelve days even when it was mixed with lichens. These animals began to eat RF-80 as soon as it was offered to them (Fig. 1). Their mean voluntary intake of RF-80 increased from 1.3 Kg/day/animal on day 13, which was the first day they were offered it, to 2.3 Kg/day/animal on day 26.

No digestive malfunction was observed for reindeer in the RF-80 group. Two calves in the MWP-group got diarrhoea after refeeding with RF-80.

Discussion.

Reindeer are evidently suspicious of unfamiliar food. The animals at first refused to eat RF-80.

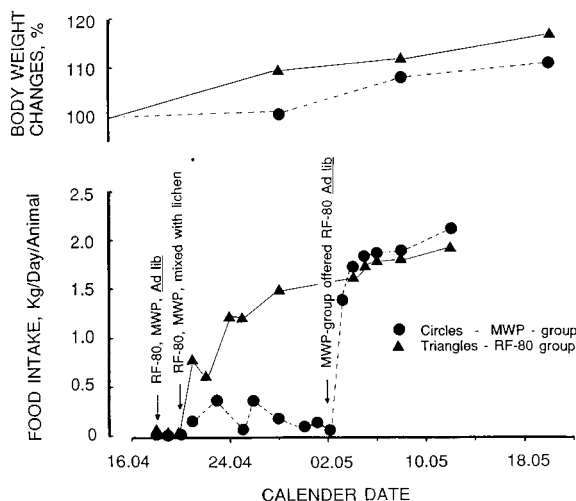


Fig. 1. In figure 1 is shown body weight changes, %, in the upper panel, of reindeer in the MWP-group, circles, and reindeer in RF-80 group, triangles, during the experimental period. In the lower panel is shown food intake, Kg/day/ animal, for reindeer in MWP-group, circles, and reindeer in the RF-80 group, triangles.

Subsequently, however, they put on weight on this diet. One reason for their refusing to eat MWP may be the hardness of the pellets which are much harder than RF-80 pellets. Another reason may be the size of the pellets (diameter 10 mm), which are almost twice as large as the RF-80 pellets. Reindeer are reported to eat a Swedish Reindeer feed which is made of the same raw materials as MWP. Perhaps this is because of its high content of molasses (10 %) and small pellet size.

Conclusions.

- Reindeer which have never experienced RF-80 and MWP refused to eat these foods then they were offered them *ad libitum*.
- Reindeer can be induced to eat RF-80 by mixing it with lichens. Reindeer tolerate *ad lib.* feeding of RF-80 after short voluntary starvation, while longer period of starvation may cause diarrhoea.
- Reindeer refused MWP pellets despite mixing the diet with lichen. It is not clear whether this was due to the taste or the size of the pellets or both.

Acknowledgements.

We thank Dr. N. J. Tyler for improving the language of this context. Also the cooperation with the reindeer herders Johan A. Utsi and his wife A. K. Utsi is much appreciated.

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