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ABSTRACT BOOK

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A diet for body weight reduction in rhinos

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Indian Rhinoceros were reported due to low activity levels, ascites, missing signs of oestrus, lameness and fistulae at their feet. Different factors were held responsible for these health issues and a survey of the feeding ration was initiated to check for nutritional reasons. The actual body weight was 2.5 t for the male and 2.1 t for the female rhino (standard normal body weight in captivity about 1.8-2.5 t and 1.5-2.1 t, respectively). The actual feeding plan was checked by computer-aided ration calculation using the nutrient composition of single feedstuffs taken from the literature as well as from the declaration of commercial feedstuffs. The intake of nutrients supplied per day was compared to requirements (partly adapted from other species). Noticeable in the rhinos was on one hand an excessive energy supply through large amount of concentrates and fruits and the other hand a deficient supply with zinc. The feeding plan was therefore changed to feedstuffs with lower energy density, a reduced energy intake and the supplementation with zinc. To ensure sufficient nutrient intake despite energy restriction, the nutrient density in the ration was increased. Regular weighing was scheduled to ensure a useful energy supply leading to the targeted weight loss. After 9 months of feeding the new diet, the male rhino had lost 340kg (≈13.6%) and the female 180kg (≈8.7%) of its initial body weight. The activity level increased considerably, which might be taken also as an indicator for less painful motion. A certain improvement of the symptoms concerning their feet was noticeable and interestingly, the female had an oestrus for the first time in years. The zookeeper reported that during the weight loss program, the animals were more aggressive and less cooperative. On the other hand manipulation is facilitated when vegetables are used as treats. Over time, zookeepers might alter feeding plans by modifying the amounts of components often driven by individual preferences or by wishing to add palatable feedstuffs such as bananas as treats. Now and then the feeding plans should be re-evaluated and corrected to fit the nutrient requirements more closely. Also in rhinos, the reduction of energy supply can lead to monitored weight loss with positive effects on overall activity and mobility as well as to an improvement of other health issues secondarily affected by body weight or body fat content, respectively.

KEYWORDS: Asian rhinoceros, weight loss, ration calculation