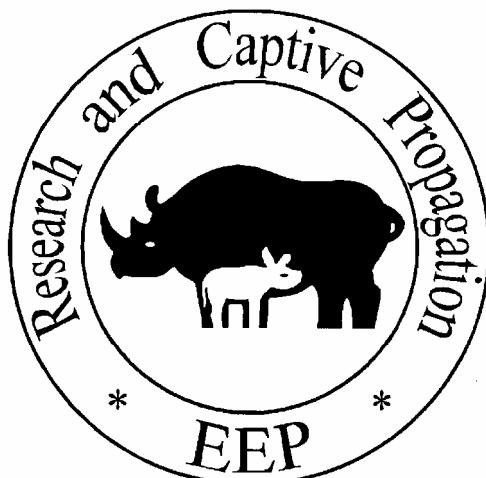


Research Committee Newsletter

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edited by Udo Gansloßer*



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*PD Dr. Udo Gansloßer
University of Erlangen
Dep. of Zoology
Staudtstr. 5
D-91058 Erlangen
udo@ganslosser.de



Further information: Gareth Davey, Dept of Psychology & Life Sciences, University of Bolton, Dean Road, BL3 5AB. Email: garethdavey@excite.com

Research Snippets

The Role of dietary Essential Fatty Acids (EFA) in the Muco-Cutaneous Ulcer Syndrome (MCUS) of Captive Black Rhino (*Diceros bicornis*)

Jacqui Caine 1, Matthew Cobb 1, Andrea Fidgett 2 & Amy Plowman 3 1Faculty of Life Sciences, University of Manchester; 2North of England Zoological Society, Chester Zoo; 3Paignton Zoo Environmental Park

Captive black rhino (*Diceros bicornis*) often suffer from a variety of diseases not seen in their wild conspecifics, including a highly prevalent and sometimes fatal skin condition known by several synonyms, including Mucocutaneous ulcerative syndrome (MCUS). Large skin lesions occurring bilaterally across the body and orally are symptomatic of MCUS. These lesions may spontaneously regress, or persist to become chronic ulcers that are difficult to treat. Despite the syndrome prevailing in over 50% of black rhino held in US institutions, and certain cases in UK zoos, little is known about the aetiology of this disease. Dietary differences between captive and wild black rhino may offer a case for the role of nutrition in MCUS and other diseases of this species. Black rhinos are strict browsers, feeding on leaves and twigs of a variety of plant species within their wild habitat. This diet cannot be re-created in captive situations due to cost and availability of browse, such that most institutions offer a diet of commercial dry feed pellet and alfalfa hay; a diet more suited to the white rhino (*Ceratotherium simum*), which in contrast is a grazer species, choosing to feed on grasses and which rarely show clinical signs of MCUS. Comparison of wild and captive diets showed the former to contain appreciable quantities of essential fatty acids (EFA), whereby captive diets show disproportionate measures of EFA. EFA have long been associated with a range of skin conditions, and with health responses to dietary fatty acid supplementation (i.e. linseed oil) shown in certain cases of zoo-housed rhino, the role of EFA in MCUS makes for a convincing argument.

In order to investigate the possible role EFA may play in the aetiology of MCUS in captive UK black rhino, a pilot study of EFA supplementation via linseed lozenges was carried out at Paignton Zoo (n=2) during Summer 2005. Digital photographs and condition scores were used to help quantify whether the supplement was affecting skin condition in any way, while dietary intake studies at Paignton, Port Lympne and Chester Zoo have since been organised. Browse samples will be sent to the University of Manchester for EFA determination, with the aim to show the seasonal and institutional variation of fatty acids in the diet. Condition scores will again reveal any correlation between dietary EFA and skin problems, and recommendations regarding nutrient composition of browse may be gained. Data collection and analysis are presently underway, however this project aims to shed some light on what is a relatively unfamiliar, yet important factor in successful captive black rhino conservation.

Further information: Jacqui Caine, University of Manchester. Email: jacquicaine@yahoo.co.uk

The Effects of Overnight Enrichment on the Daytime, Night-time and Training Behaviour of Three Captive African Elephants (*Loxodonta africana*) at Blair Drummond Safari Park

Rosemary Newsome and Hannah M Buchanan-Smith Department of Psychology, University of Stirling, Scotland

It is important to minimise chronic stress and stereotypical behaviours in captive animals for welfare reasons. Studies have shown that the introduction of certain enrichment devices can reduce locomotor stereotypical behaviours, which may have a positive impact on welfare. The aims of the project were twofold. First it aimed to determine whether overnight enrichment designed to encourage foraging behaviour reduced locomotor stereotypic behaviour in three African elephants. Second, the impact of this overnight enrichment on the performance of the elephants in their morning positive reinforcement