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Browse Preference of Colobus Monkeys (*Colobus guereza*) at Cotswold Wildlife Park

Callum Kirk¹, Mary Farrell¹, Hayley Mullaney² and V. Tamara Montrose¹

¹ Animal Behaviour and Welfare Research Group, Department of Animal and Land Sciences, Hartpury University Centre, Hartpury, Gloucestershire, GL19 3BE

² Cotswold Wildlife Park, Bradwell Grove, Burford, Oxfordshire OX18 4JP

Introduction

- In the wild Black and White Colobus monkeys (*Colobus guereza*) have a wide and varied diet (Harris and Chapman, 2007).
- They display specific food preferences and select young leaves and foodstuffs with a high protein to fibre content. They will also travel long distances to access browse with specific nutrients (Chapman et al, 2004; Felton et al, 2009).
- Captive diet usually consists of vegetables along with leaf eater pellets which does not match the structure of their diet in the wild. Browse is also used to enrich the diet and stimulate natural foraging behaviours (Plowman and Turner, 2001).
- The aim of this study was to identify the browse preference of the Colobus troop held at Cotswold Wildlife Park.

Methods

- Study Site: Cotswold Wildlife Park, Burford, Oxfordshire.
- Sample: 8 Colobus monkeys (4 females; 4 males; aged from 9 months - 8 years).
- Four commonly available browse species were used: Hawthorn (*Crataegus monogyna*), Birch (*Betula pubescens*), Lime (*Tilia platyphyllos*) and Bramble (*Rubus fruticosus*).
- Browse was collected from nearby woodlands and presented with the morning feed.
- 250g of each browse was presented at two spatially distinct sites in the enclosure in the form of leaves (Figure 1).



Figure 1: Browse presentation

- The browse was presented in paired comparisons, and the Bradley-Terry method was used to analyse and rank this selection.
- Samples of browse were sent for nutritional analysis to identify the protein, fibre and carbohydrate content of each browse (Staffordshire Scientific Services, Stafford).

Results

- The preference order of the browse for the majority of the study cohort (n=7) was Hawthorn>Birch>Lime>Bramble.
- Colobus monkeys' frequency of visits and duration of feeding was greater for the browse they preferred than the non-preferred browse in the paired comparison tests.
- The nutritional content for all browse species was identified (Figure 2).



Figure 2: Nutrient Content of Browse Species

Discussion

- Results were not consistent with wild studies which showed preference for a high protein to fibre ratio (Chapman et al, 2004; Felton et al, 2009).
- Predominant preference was for Hawthorn, a browse species with low fibre content, which agreed with other studies in captivity (e.g. Tovar et al, 2005) but second preference was for Birch, which had the highest fibre content.
- However, the top two preferences have a high carbohydrate and thus, a high energy content.
- Colobus monkeys encounter lower temperatures in the UK than they would experience in the wild, which can alter their calorific and nutritional needs due to increased thermoregulatory costs (Stroebele and De Castro, 2004).
- Preference may alternatively be based on factors such as selection of younger leaves which tend to be preferred by Colobus monkeys (Chapman and Chapman, 2002; Wasserman and Chapman, 2003), or preference for a browse species that is provided less regularly.
- It is also important to consider that the diet of the troop supplies all required dietary requirements so preference may be related to palatability (Kirschner et al, 1999).
- Knowledge of preference for browse species can inform dietary management so that a more palatable and preferred nutritive supplement that will enhance normal behaviour can be provided.