

D-14: Feeding preference (grazing:browsing) and grazing pressure of sambar deer (*Cervus unicolor unicolor*) at the Horton Plains National Park and grassland productivity of the Horton Plains National Park

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To find the feeding preference of sambar, faecal analysis method (i.e. identification of dietary material in the faeces) was used.

Faecal samples were collected from March to July 1991. Five pellets were taken from each of 12 randomly selected fresh faecal deposits which included the 3 age

categories adult, juvenile and yearling. The samples were subject to chemical treatment in the laboratory as described by Stewart (1967). Counts of epidermal cuticles of monocotyledons and dicotyledons were differentiated with the help of a microscope and recorded simply on a relative abundance scale. The proportion of monocotyledon to dicotyledon was found to be 93:7 indicating that sambar deer at Horton Plains National Park are grazers and not browsers.

To study the productivity of the grassland and the consumption levels of grass by sambar, 4 apparently uniform areas were selected. Enclosures were erected measuring 12 m x 1.5 m using wooden poles and planks. Study was done during the months from February to July 1991.

A rabbit proof enclosure too was erected in one of the above 4 enclosures. Within the large mammal enclosure a 1.5 x 1.5 m area was left without erecting the rabbit enclosure to find the productivity loss due to rabbit grazing. 1 m x 1 m plots were harvested (above ground and below ground) from within the enclosures at monthly intervals. 1 m x 1 m plots were harvested from within and outside the 2 rabbit proof enclosures to find the productivity loss due to rabbit grazing. 1 m x 1 m plots were harvested from within and outside the large mammal enclosure at monthly intervals by moving the cages to find the productivity in the grazed grassland. Samples were taken at monthly intervals. Within the 4 enclosures 1 m x 1 m cutting treatment were allocated to see whether mechanical cutting would prove a better alternative to grazing in the management of the grassland. All harvested material were oven dried at 80°C and dry weights were recorded.

Productivity value of the ungrazed area was found to be 1,012.8 g/m²/y while that for the grazed area was found to be 3,475.8 g/m²/y. The value for the grazed area was significantly higher than the ungrazed area.

Grazing pressure determined as Spedding (1979), of the grassland, was found to be 0.94. When the efficiency of utilization by grazing was compared with that of the cutting treatment, the former (94%) was found to be better than the latter (19.8%) method.

The results indicate that the existing habitat can be improved for sambar by blocking out heavily grazed areas for recovery.