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EFFECTS OF BROWSE AVAILABILITY AND
QUALITY ON BLACK RHINO (*Diceros bicornis michaeli* Groves 1967)
DIET IN NAIROBI NATIONAL PARK, KENYA."

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ABSTRACT

This study was conducted between September, 1994 and February, 1995. The main objective was to investigate the effects of browse availability and quality on black rhinoceros (*Diceros bicornis michaeli* Groves 1967) diet in Nairobi National park. Line intercept method was used to determine browse availability. The ratio of browsed crown to the total crown was used to estimate browse utilization. Proximate system analysis and extraction methods were used to determine browse nutritional quality and phytochemical status, respectively.

Up to 34 plant species were identified as potential black rhino browse, and were available at significantly different levels ($p < 0.001$). *Lippia javanica* (20.581 ± 3.101 n=544) and *Lannea cornuta* (0.963 ± 0.529 n=544) were the most and least available species, respectively. Only 32 species were, however, utilized as *L. cornuta* and *Rhynchosia hirta* did not show any black rhino browsing activity. Browse utilization was found to vary significantly ($p < 0.001$) during the study period. *Grewia similis* was the most utilized (20.564 ± 2.764 n=544), while *Commelina africana* (0.974 ± 0.974 n=544) was the least utilized browse. Twelve browse species were selected for nutritional quality and phytochemical analyses. There were significant differences in their total alkaloid, total phenolic, crude fibre, crude protein, and total ash ($p < 0.001$) contents, respectively. However, there was no statistical difference in their fat values ($p = 0.0933$).

This study showed that the black rhino is a selective browser. Plants with low phenolic and alkaloid contents and high fibre were preferred. Of the nutritionally similar species, browsing was driven by availability. It is suggested that areas with diverse plant species containing low levels of total phenolic and alkaloids are suitable habitats for black rhinoceros.