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SUMMARY

The Indian gazelle inhabiting the arid regions is studied with respect to their food habits and foraging behaviour. In arid areas the selection of a habitat by an animal is mostly governed by spatial and temporal distribution and abundance of food items and the food requirements of that species. This becomes critical especially in a semi-agricultural landscape where the ecosystem is altered without any consideration for the animal. The study was conducted in a habitat close to human habitation around Jodhpur after the harvest. This area is dominated by desert vegetation such as *Crotalaria burhia*. The study is conducted for a period of six months encompassing two seasons-winter (December 15, 1996 - February 20, 1997) and summer (March 20, 1997 - May 10, 1997).

The intensive study area was differentiated into six habitat types based on the structural and floristic composition of the vegetation-viz, crop fields, fallow lands, scrub area dominated by *Zizyphus*, and hedges of *Maytenus-Capparis-Zizyphus* among the agricultural fields. Differential habitat selection by gazelle was observed during summer and winter mainly due to selection of diet based on seasonal nutritional requirements.

Diet selection is looked in terms of use-availability and plant chemistry. Based on a relative preference ratio, the habitat and food types were ranked, and the observed trends are explained in terms of the existing theories on diet selection. Diet composition varies with the age and sex classes of the animal viz. breeding males, sub-adult males and adult females. In winter and summer differences in habitat use was exhibited by gazelle, also there was a difference in proportion of the food species in the diet between two seasons. The scrub area

was dominated by vegetation having higher crude protein and tannin, was used more than available in order to supplement their diet (especially in the case of females) and in summer the crop fields dominated by *Crotalaria burhia* were used more by all categories of animals. Females fed on a high protein and less tannin diets which is pronounced in winter, sub-adults also fed on a diet having higher protein and tannin, while males were not biased towards a high quality food both in winter and summer. These differences were influenced by the spatial distribution, of food species, plant chemistry, and the differential use of food species among different age and sex classes during the two seasons. Protein and tannins along with moisture seem to govern diet selection rather than just being a function of availability during winter and summer. Spatial distribution of food plants along the habitat types (in the current land-use pattern) does influence habitat use by gazelle. Selection and proportion of the time spent on food species during summer and winter suggest that Indian gazelle is a browser.