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The Perceived Palatability of Forage Plants of Wild Asian Elephants in Sri Lanka

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Abstract

The dilemmatic human-elephant conflict and the loss of forage lands due to the ever-increasing population density of Sri Lanka indicate the need to increase sustainable forage availability. Asian elephants feed on different plant species depends on the plant palatability. The feeding behavior of wild elephants provide the basis for enhancement of forage availability through elephant-specific conceptual conservation strategies in habitat enrichment to keep elephants inside the fragmented landscapes. The literature on the elephant forage plants in Sri Lankan forests and lands is limited and there are gaps in the knowledge on the plant palatability in relation to the elephant forage preferences. Thus, the present study explores the perceived palatability of elephants' forage in different provinces in the country. A list of palatable plant species was compiled based on the literature, field surveys, and the results of interviews conducted with wildlife experts. A questionnaire was developed from the list of palatable plant species and validated through wildlife experts and a pilot sample. The survey method of the research was used to collect information from a sample of respondents with field experience and expertise in the subject. The responders were chosen at random, and a piloted and validated questionnaire was administered through the Google form. Perceived palatability score was calculated from the responses considering their human perception towards forage plants. The data were analyzed for frequency distribution and mean comparison was performed using one-way analysis of variance procedures. Twenty-two common elephant forage plants were recognized from eight provinces on the island, included 03 herbaceous, 14 grasses, and 05 sedges. These plants speculatively thrive well in most of the elephant ranging areas. As far as provinces in the dry zones are concerned, it can be assumed that the probability occurrence of the selected plants is similar. The perceived palatability scores vary across the provinces, and plant types. The distribution of elephant forage plants in the island indicates an ecological provenance, inferring the influence of the general climatic conditions of the island. Of the listed 22 forage plants, *Pennisetum purpureum*, *Saccioypelsis interrupta*, *Panicum maximum*, and *Echinochloa glabrescens* were dominant over the rest, having relatively higher perceived palatability scores. Further, studies are required to have a complete image of the spatiotemporal variation of the four forage plants identified. The study showed the significance of the availability of forage plants and their palatability levels to secure and sustain the grazing forages for wild elephants in Sri Lanka.

Keywords: Perceived forage palatability, Human-elephant Conflict (HEC), Asian elephants (*Elephas maximus*), Grazing forages, Wildlife conservation, Sri Lanka