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Plant Species Selection by Free-Ranging Cattle in Subandean Mountain Forests of Southern Bolivia

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Abstract

In southern Bolivia, Department of Tarija, the Subandean mountain forests are used as winter grazing areas for cattle. Practicing a transhumance system, the cattle is moved to the forests at the beginning of the dry season (April-May), when the forage in the grasslands of the valleys, used for summer grazing, becomes scarce. The cattle stays in the mountain areas during the complete dry season and returns to the grasslands around the villages when the rainy season starts (October-November). In the community of Salinas, inside the Reserva Nacional de Flora y Fauna Tariquía, traditionally silvopastoral areas (Meringal (M) and Rio Tarija (T)) were chosen for evaluating the plant selection of cattle in free-ranging conditions, using direct observation. During 4 to 5-day periods per month from May to November, an adult cow was observed during daylight hours. The bites per plant species were counted every 5 minutes during a 1-minute period. From May to July, grasses and grass-like species made the highest contribution to the cattle's diet, contributing to more than 55 % of bites during May and June at both study sites. The main species consumed was the grass *Ichnanthus cf. pallens* (more than 50 % in both sites in May). In the following months, consumption of grasses and grass-like species decreased, and the contribution of herbs, shrubs and subshrubs, and trees increased in the diet. In area T, bites on shrubs and subshrubs were more frequent, especially in August (42.5 %), while in M more trees than shrubs and subshrubs were browsed, with highest values being found in September (45.2 %). Not only fresh plant parts served as food but also dry tree foliage was consumed, mainly during August to October, at both study sites, but with higher proportion of browsing at site M (September=35 %). The dry tree foliage was mainly derived from *Chrysophyllum gonocarpum* and *Celtis brasiliensis*. The results show a high diversity of plants consumed by cattle (aprox. 376 species). In general, the ten most important plant species (including dry tree foliage of non-determined tree species) made up more than 50 % of bite counts.

Keywords: Biodiversity, forest grazing, Latin America, plant species selection, silvopastoral systems