

Diet Selection and Foraging Behavior of Cattle
in Species-rich Vegetation (Advanced Studies
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著者	OGURA Shin-ichiro
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2-1. Diet Selection and Foraging Behavior of Cattle in Species-rich Vegetation

Shin-ichiro OGURA

Tohoku University, Japan

The mechanism of diet selection and foraging behavior of large herbivores has given much concern to researchers because it often gives profound effects on the productivity and healthiness of the animals, and vegetational change. Particularly in extensive grazing systems, understandings of this plant-animal interaction are vital for adequate control of vegetation and animal conditions, and sustainable use of the plant resource. In this paper, factors affecting diet selection and foraging behavior of large herbivores were discussed in terms of accessibility, forage quality and other chemical factors. Previous studies showed that Japanese native pastures composed of 61-155 plant species, of which cattle graze upon 26-76. Among these species, Japanese plume-grass (*Miscanthus sinensis*) was most frequently grazed by cattle. Both horizontal and vertical distribution of available forage was a major factor affecting selectivity and ingestive behavior of cattle. Controlled experiments also proved that forage selectivity was affected by its height and animals selected forage more strongly from the height with higher intake rate. Estimated bite size of major native plants collected by hand-clipping well explained relative preference among plant species. In contrast, concentration of nutrients (digestible energy, crude protein and minerals) of the hand-clipping sample did not explain the relative preference of the plants. This is partly because toxic plants, *Hydrangea macrophylla* and *Pteridium aquilinum*, had high nutrient concentration. In addition, these toxic plants released specific volatiles. These findings warrant a further study for the effects of plant chemicals stimulating to scent and taste on diet selection of large herbivores.