

Quantification of Bite Size, Bite Rate and Intake Rate in Cattle Foraging Japanese Native Grasses (Advanced Studies on Sustainable Animal Production: Interrelationships among Human, Animal and Environment, 8th International Symposium of Integrated Field Science)

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Bite size (BS) and bite rate (BR) are fundamental elements relating intake rate of grazing animals. In this study, an indoor experiment was conducted to quantify BS and BR, and their change with decrease of availability in *Sasa palmata* and *Miscanthus sinensis*, which are major species in Japanese native grasslands. These grasses were harvested immediately before the experiment in early summer. Twenty-five shoots of *S. palmata* (60 cm) and *M. sinensis* (40 cm) were planted in a planter at a 10 cm interval, and offered in front of four cows separately. The number of bites was counted until all the shoots received at least one bite (Maximum bites; MB), and 1/2 MB, 1/4 MB, and two bites. Amount of intake was measured by dry weight loss during the foraging periods. MB of the cows was 26-40 and 34 bites in *S. palmata* and *M. sinensis*, respectively. BS in *S. palmata* (1.34-3.20 g DM/bite) was greater than in *M. sinensis* (0.83-1.75 g DM/bite). In both species, BS was highest in the first two bites. BR in these grasses ranged similarly; 27.2-38.3 and 25.8-40.0 bites/min in *S. palmata* and *M. sinensis*, respectively. Responding to these biting behavior, intake rate was highest in the first two bites (*S. palmata*, 148.6 g DM/min; *M. sinensis*, 61.0 g DM/min) compared to the longer foraging periods (33.8-37.5 and 23.0-39.7 g DM/min). The results suggest that BS is a major factor affecting intake rate in *Miscanthus* and *Sasa* dominant grasslands.