

FEEDING THE SUMATRAN RHINO (*Dicerorhinus sumatrensis*): DIET EVALUATION, ADAPTATION, AND SUITABILITY

Ellen S. Dierenfeld, PhD*

Department of Nutrition, Wildlife Conservation Society, Bronx, New York 10460, USA

James G. Doherty, BS, and Penny Kalk, MS

Department of Mammalogy, Wildlife Conservation Society, Bronx, New York 10460, USA

Steve Romo

Cincinnati Zoo and Botanical Garden, Cincinnati, Ohio 45220, USA

In Nature, the Sumatran rhino consumes up to 50 kg (fresh weight) of leaves and stems from broad-leaved herbs, shrubs, and tress daily; hover, monocot grazing has also been observed. Ten species of native browses analyzed at the Nutrition Laboratory, Wildlife Health Center, Wildlife Conservation Society contained an average of 12.0% crude protein and 8.8% available protein. Total cell wall content (NDF) averaged 49.8%, ADF was 27.2%, and lignin, 13.3%. The hemicellulose content of these browses (22.7%) was more representative of monocot species than dicots. Of minerals quantified (Ca, Cu, Fe, K, Mg, Na, P, Zn), Na, P, and Zn levels may be limiting in native vegetation consumed by Sumatran rhinos compared to minimum requirements for the horse (NRC, 1984). Dietary dry matter consumed daily by Sumatran rhinos ($n = 17$) in four North American, two European, and one Malaysian zoo ranged from 15-20 kg (1-2% of body mass). Most of the dietary dry matter was provided by legume hays, formulated pellets provided 2-5 kg, and the remainder was provided by variable quantities of fresh browse and/or produce. Nutrient composition of these diets averaged 15% crude protein, <20% ADF, and were considered highly digestible. After prolonged diet refinement to improve diet palatability and fecal consistency, Bronx and Cincinnati Zoos feed an orchard grass/legume hay ad libitum (intake of approximately 10 kg), 3.2 kg of pellets developed for feeding moose, honeysuckle, willow (*Salix* sp.), and mulberry (*Morus* sp.) browse. Mixed hay, rather than alfalfa, was chosen to more closely duplicate natural forage composition, while pellets based on aspen sawdust appeared to have a suitable carbohydrate content for this species.