

VIVERRID DIGESTIVE PHYSIOLOGY: COMPARISON OF BINTURONGS (*ARTICTIS BINTURONG*) AND DWARF MONGOOSE (*HELGALE PARVULA*)

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Abstract

A preliminary investigation was conducted to compare intake and digestion in the largest and smallest members of the Viverridae family, highly frugivorous binturongs (*Arctictis binturong*; n=2) and the more carnivorous dwarf mongoose (*Helogale parvula*; n=6) housed in groups. Normal zoo diets were monitored over two 4-day periods, with total feed intake and fecal output measured. Binturong diets comprised commercial (canned and dry) primate diet (60%, as-fed basis), fruit and vegetables (33%), and green produce (7%) whereas mongoose were fed canned feline diet (79%, as-fed basis), mixed vegetable produce (8%), and supplemented insects (11%), with pinkie mice (2%) considered a treat. Binturongs consumed about 1.1% of body mass in dry matter (DM) daily, whereas mongoose ate approximately 3.3%. DM digestibility was 46% for binturongs (B), and 61% for mongoose (M). Wider difference was found between species in apparent fat (47% (B), 85% (M)) digestion but less difference was seen between species in apparent protein digestibility (73 (B), 82% (M)). Carbohydrate-digesting ability was quantified, but must be interpreted with caution given the low soluble sugar content of M diets (<4% of DM). Simple sugars (water soluble carbohydrates) displayed apparent digestibility of 66% (B) and 87% (M), whereas dietary fiber (measured as neutral detergent fiber) ranged from only 9% apparent digestibility (B) to almost 50% (M). Fiber fractions quantified likely reflect very different chemical entities – plant-based in binturong vs. insect-based or laboratory artifact in mongoose. Unique digestive anatomy has not been reported for either species, however, fecal characteristics – particularly water content (65% (B), 20% (M)) – suggest effective hindgut resorptive mechanisms for the mongoose, which inhabits far drier regions compared to binturongs. Differences in digestion coefficients measured in this study are likely due to diet substrate rather than any innate difference in physiological scope, although the possibility of active chitinase enzyme activity in mongoose should be investigated in more detail.