

INTAKE, APPARENT DIGESTIBILITY, AND DIGESTA PASSAGE IN LEOPARD TORTOISES (*GEOCHELONE PARDALIS*) FED A COMPLETE, EXTRUDED FEED

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ABSTRACT

The influence of feeding juvenile female leopard tortoises (*Geochelone pardalis*, n=18) a commercially available, complete, extruded feed on two commonly used feeding schedules was evaluated. When fed seven (compared to three) days per week, dry matter and digestible energy intakes were greater ($P<0.05$). Tortoises gained more body weight, kilogram (BW_{kg}), but not when adjusted per initial BW_{kg} , grew more in plastron width (PW) and carapace height (CH), but not midline straight carapace length (MSCL), and grew more in shell volume ($SV=\pi/6\cdot MSCL\cdot PW\cdot CH$), with a higher body condition index (BCI). Apparent digestibility of cellulose in tortoises fed seven (n=18) compared to three (n=16) days per week was lower ($P<0.05$), with no differences detected in dry matter, organic matter, gross energy, or other fiber fractions analyzed ($P>0.05$). Transit time (TT_1) was shorter and indigestible fill (V_N) was higher in tortoises (n=18) fed seven days per week. With four animals removed due to $<50\%$ marker recovery, tortoises fed seven days per week exhibited shorter mean retention time (R_{GIT}). Longer R_{GIT} when food availability included short periods of fasting (i.e., when food was offered three days per week) may have allowed more energy utilization from microbial cellulose fermentation. Providing short fasts may be useful in slowing tortoise growth in animals fed *ad libitum*. *Ad libitum* feeding, especially of a highly digestible feed, is not recommended for captive juvenile *G. pardalis*, especially when offered food daily, as tortoises in this study freely consumed amounts exceeding 200% predicted herbivorous reptile field metabolic rate (FMR).