LEOPARD TORTOISE (*STIGMOCHELYS PARDALIS*) FEED INTAKE NOT INFLUENCED BY EXCLUSION OF ARTIFICIAL FEED FLAVORS

Allison G. Mullin[1]*, Jennifer L. Parsons, PhD[2], and Mark S. Edwards, PhD[1]

[1]Animal Science Department, California Polytechnic State University, 1 Grand Avenue, San Luis Obispo, CA 93407, USA.
[2]Mazuri® Exotic Animal Nutrition, PMI Nutrition International LLC, 4001 Lexington North, Arden Hills, MN 55126, USA.

Abstract
Approved non-nutritive feed additives, including flavors, aromas and colors, are commonly used in animal feeds (AAFCO, 2018). These ingredients impart specific characteristics believed to influence feed selection and intake. Flavors are used in feeds offered to a wide range of species. Published data suggests flavors effect preference of one diet item over another when a choice of rations is fed simultaneously rather than on feed palatability which ultimately influences total feed consumption (Pond *et al*., 2005). Recent market trends suggest consumers would prefer certain products, based in part, on the absence of artificial feed additives, including flavors. Our objective was to quantify feed intake by captive leopard tortoises (*Stigmochelys pardalis*) of a nutritionally complete tortoise diet with and without an added artificial flavor agent. We hypothesized daily intake of a complete tortoise diet without an added artificial flavor would not differ from the flavored control. Seventeen, adult female, individually housed leopard tortoises were fed two, low starch extruded tortoise diets in a randomized crossover design. Both diets included the same component ingredients, in the same proportions, were isoenergetic and differed only with the inclusion (Tortoise LS Diet, Mazuri® 5E5L – CTL) or absence of artificial flavors (TRT). All animals had been consuming the CTL prior to the study. Food quantities offered were based on initial body mass and held constant throughout the trial. Total feed consumption was measured daily. Animal housing and routine husbandry have been previously described. Ambient and enclosure surface temperatures measured twice daily. All data were analyzed using the MIXED procedure of SAS. The model included the fixed effects of diet type, day and the interaction of diet type x day. Least square means were compared using Fisher's LSD at a significance level of $P<0.05$ was accepted as statistically significant. No significant difference in intake was detected between diets ($P=0.54$), day ($P=0.48$), and there was no diet type x day interaction ($P=0.77$). Exclusion of artificial feed flavors from a nutritionally complete, extruded tortoise diet did not influence feed consumption compared with the flavored CTL. These results are consistent with previous evaluations of feed additives that impart aroma or color to rations (Douglass *et al*., 2009; Malysiak *et al*., 2013; Edwards, unpublished). This suggests the addition of flavors, aromas and colors may have greater importance on human perception of tortoise food preference rather than animals' actual reception and consumption of a feed.

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