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*Environmental enrichment for captive Eastern blue-tongue lizards (*Tiliqua scincoides*)*

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Abstract

*Eastern blue-tongue lizards (*Tiliqua scincoides*) are kept in zoos and increasingly commonly as exotic pets, but little is known about improving their welfare by enrichment of their environment. Using nine animals kept individually in cages provided with a brick for basking and a pipe for hiding, we initially investigated enriching their environment with mealworms, either scattered on the floor or inserted into a foodball. The mealworms increased the time that the lizards spent feeding on both their ration and the mealworms and increased liveweight gain. Scattering the mealworms on the floor of their cages increased the time taken to eat them, compared with taking them from the foodball. Mealworms also reduced the time that the lizards spent hiding. Second, using eight individually housed lizards and replacing the pipe with a log which could be used both for basking and hiding, we investigated whether increasing the size of their enclosure and its temperature affected their behaviour, in a two-factor changeover design with two-week periods. When lizards were moved from small to large enclosures, they greatly increased the time that they spent walking on the first day, and they walked longer and further for the rest of the period. Lizards in big enclosures also spent more time hiding in the log and less time inactive on the log or the brick. Lizards in hot enclosures spent more time basking on the log and less time hiding in it, which would be valuable for display animals. The benefit of enriching the captive environment of Eastern blue-tongue lizards by scattering mealworms in their cage may depend on the effect on the lizards' weight and the cage's conditions, as captive lizards often become obese, and inactivity and weight loss are normal in their natural habitat during the dry season. Increasing the size of enclosures increases walking activity and reduces weight gain, which similarly will have variable effects on welfare depending on the impact on their bodyweight. Lizards in large enclosures have an increased propensity to hide so it is important that opportunities for this are provided.*

Keywords: *animal welfare, Eastern blue-tongue lizard, environmental enrichment, skink, space availability, temperature*