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The effect of environmental provisioning on stress levels in captive green anole (Anolis carolinensis)

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Abstract

In response to an increased awareness concerning the welfare of captive animals, several studies have investigated the effect of provisions on stress levels in model species, such as small mammals, birds and fish. In contrast, reptiles have received less attention. Although many reptilian species are becoming increasingly popular in the pet trade and are frequently used as model species in various branches of biology and a number of studies have explored how they react to stress in different contexts (eg social, predatory), little is known about how they react to stress induced by housing conditions or experimental treatments. In this study, we quantified the effect of provision of perches and leaves as refuges (provisioned) on the behaviour, morphology and physiology of the green anole (Anolis carolinensis). Our results showed that increased or decreased structural complexity of the cage had no effect on body mass, tail-base width, heterophil to lymphocyte ratios (H/L ratios), brightness, body colour, behaviour and faecal corticosterone metabolite (FCM) levels for both males and females in the experimental treatments (provisioned or deprived situation). Our study animals did score very highly for several stress-indicating variables in the three weeks preceding the experiments — suggesting that they had experienced considerable stress during capture, transport and temporary housing in the pet store.

Keywords: animal welfare, captivity, environmental provisioning, green anole, reptiles, stress