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Study of the effect of UV-B radiation on tadpoles of *P. Cruciger* and B. *melanostictus* under laboratory conditions

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sConsequent increase of ultraviolet-B radiation has been identified as a possible cause of amphibian population declines and malformations together with other stressors such as pesticides and trematode infection (Ouellet *et al*., 1997, Johnson *et al*., 1999 and Blaustein *et al*., 1994). Two common anuran species; the common hourglass tree frog (*Polypedates cruciger*: Ranidae) and common toad (*Bufo melanostictus:* Bufonidae) were exposed to UV-B radiation (312 nm) to receive Erythemal dose (0.08 relative response) of the action spectra under laboratory conditions. Biological weighted doses were estimated to match 50%, 25% and 10% of the average daily irradiance of UV-B. Since the average daily irradiance of UV-B is not reported for Sri Lanka the calculations were done to match the irradiance in the Asian region (17.92×10^{-3} Wm^{-2}). The study was carried out with five days post-hatch tadpoles (Gosner stage 26, N=320 from four clutches) and was continued until their metamorphosis. Survival was recorded daily and malformations were reported weekly. Growth; snout-vent length, body weight and the time required for forelimb emergence of half the number of tadpoles in a given treatment (TE_{50}) were reported at metamorphosis. Significant effects were observed on the survival of both species and approximately 50% reduction was reported in the high dose ($7.6\ X10^{-2}$ Wm^{-2}). Growth retardation was a common feature observed in both test species. They exhibited a dose-dependent increase in malformations, mainly composed of skin malformations, lumps and swollen abdominal regions. Malformations were more common and severely exhibited by the tree frog than common toad. This might be related to species specific differences in photolyase levels, skin pigmentation and activity levels. Uncertainty of calculated UV-B irradiance in the study area might affect the accuracy of the results. Hence, recording solar irradiance is an essential part in future studies. Laboratory as well as field studies should be carried out to investigate the role of ultraviolet radiation on local amphibian populations.

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