2014

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Effects of UV-radiation on feeding behavior in *Dendrobates tinctorius*

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Abstract
UV-B levels have recently been increasing with the depletion of the ozone layer. Recent data have shown that amphibians are especially susceptible to UV-B, with poison dart frogs being one focus in these studies. The purpose of this study was to determine if UV-B radiation affects the foraging behavior of poison dart frogs. This study was conducted with a captive population of juvenile *Dendrobates tinctorius* at Pepperdine University in Malibu, California. Frogs underwent one of three treatments: UV only, Food only, and UV and Food. UV only trials were conducted using two UV lights emitting approximately 1.2 UV/cm² of UV total on one side of the box and identical off lights on the other side. Food only trials used fruitless (fruit flies in small petri dishes and empty petri dishes as control. The UV and Food trials combined these methods with the UV light over the fruit flies. The data showed that for the UV-only trials, the frogs were on the UV side 39.5% of the time, indicating UV avoidance, and for the Food only trials, they were on the food only side 63.5% of the time, indicating food interest. The UV and Food frogs spent 26.9% of their time on the treatment side. We can conclude that frogs avoided feeding when the area near the food source was also exposed to low levels of UV radiation and therefore UV radiation has an effect on foraging behavior in frogs. Diurnal tropical dart frogs must balance many demands in the wild including the avoidance of even low levels of UV radiation from the sun.

Hypothesis
Poison dart frogs will avoid flies under UV-B light and will show interest in those not under UV-B light to preserve themselves from the harmful radiation effects.

Methods
Two trials were run at a time with a camera mounted above. Each box had the ability to do Food only, UV only and Food and UV trials.

Results

![Graph showing time spent under treatment](image)

**Conclusions**
1. As has been shown with other dart frogs, juvenile *D. tinctorius* avoid low levels of UV radiation.
2. Juvenile frogs, are attracted to petri dishes with food, but the attraction is lost when the food is also in an area of low UV.
3. If UV levels are increasing in tropical regions because of ozone depletion or deforestation, dart frog feeding behavior could be impacted.

**Literature cited**
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**Acknowledgements**
This research was funded by the Natural Science Division of Pepperdine University and the Keck Foundation.