Effectiveness of an Acoustic Repelling Device on Toque Monkeys (*Macaca Sinica*) Under Sri Lankan Field Conditions

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Abstract

Human monkey conflict is a critical problem in Sri Lanka. Damage caused by non-human primates to the properties, cultivations of humans and loss of their habitats, space, feed and lives of monkeys are major concerns. This study was conducted to evaluate the applicability and suitability of an acoustic monkey repelling device on repelling Sri Lankan toque monkeys under field conditions as a way to mitigate human monkey conflict. Study was carried out in 5 selected sites within the premises of University of Peradeniya for a period of 2 months. First 3 weeks were spent on preliminary observations to gain fundamental knowledge and behavior time budget of the monkeys. Collection of data was done during 4 phases at each site. During phase 1 data were collected before setting up the repellent and study number of animals present in the site were recorded. Data collection in other 3 phases was carried out after setting up the device and 3 frequency ranges (10, 18 and 25 kHz) with 115dB power were tested at each location in a Randomized complete block (RCBD) study design. During these 3 phases number of toque monkeys present on the location with repellent was recorded. One-hour observations per day were carried out for 3 days at each phase (total of 12 days). Monkeys were observed directly or using binoculars and data were recorded in written format in data sheets. The caustic repellant devise (JWP-315M, Conway Exports Private Limited, Delhi, India) was tested at for its manufacturer specified monkey repelling frequency range and covered 6000 ft^2 area. Oscilloscope and 'Lab View' software were used to test the emitting frequency ranges. Device sound pressure of 115 dB was tested using a digital sound level meter with RS232. Data were analyzed by using Minitab statistical package using Kruskal-Wallis Test. Although there was significant trend, the tested acoustic monkey repelling device is not efficient ($P = 0.058$) in reducing the number or repelling toque monkeys from a target site. Habituation to the sound waves and reduction of disable power of the sound waves over a distance could be reasons for this outcome.

Keywords: Acoustic, Behaviour, Repellent, Toque monkey

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