

Effects of rodenticide on growth of nestling barn owl, *Tyto alba javanica* in oil palm plantations

ABSTRACT

This study investigated the effects of the first generation anti-coagulant rodenticide, chlorophacinone and the second generation rodenticide, bromadiolone on nestling growth of barn owl, *Tyto alba javanica* in oil palm plantations. Forty-two nestlings were selected from rodenticide-free, chlorophacinone and bromadiolone treated plots. Growth rates of nestlings were measured by taking body weight, culmen length, tarsus length and wing length on a periodic basis. Dead nestlings were collected during daily observations. Autopsies were carried out to determine cause of mortality and internal organ (livers) were harvested for analysis of residue by using high performance liquid chromatography (HPLC). Rodenticide-free plot scored the highest fledging success, i.e. 71.4% (n = 14) at 52 days after hatching. In chlorophacinone treated plot, six out of 14 nestlings or 42.85% successfully grew to fledging age of 52 days. In bromadiolone treated plot, only five or 35.75% (n = 14) of nestlings survived to fledging age. Three out of nine nestling carcasses found in bromadiolone treated area were collected for the analysis. Of these, two were detected with bromadiolone residue measuring 0.33 g g⁻¹ and 0.41 g g⁻¹ wet weight, respectively. In chlorophacinone treated plot, three out of eight carcasses were collected for analysis. The residue of chlorophacinone detected ranged from 0.18 g g⁻¹ to 0.21 g g⁻¹. Nestlings that survived in the rodenticide-free area showed higher measurements for body weight, tarsus, culmen and wing length compared to bromadiolone and chlorophacinone treated plots.

Keyword: Barn owl; Bromadiolone; Chlorophacinone; Secondary poisoning