

The effects of rodenticide residues deposited in eggs of *Tyto alba* to eggshell thickness

ABSTRACT

The deposition of anticoagulant residues in the eggs of barn owls, *Tyto alba* by assessing eggshell thickness were investigated in oil palm plantations. Three study plots were set aside; one plot each baited with chlorophacinone and bromadiolone, respectively and the third was left unbaited. Four baiting campaigns were conducted on the rodenticide designated plots, coinciding with the breeding seasons of *T. alba*. High performance liquid chromatography (HPLC) showed that 29.73% (n=37) and 5.35% (n=56) of addled eggs collected from rodenticide treated plots contained bromadiolone and chlorophacinone, respectively, with mean concentration of residues from 0.009 to 0.031 µg/g wet weight. None of the addled eggs (n=28) collected from the unbaited plot contained bromadiolone or chlorophacinone residues. The detection of rodenticide residues in both albumen and yolk indicated high risk of secondary poisoning to both compounds. However, low levels of residues detected have no effects on shape of egg, eggshell mass or thickness.

Keyword: Anticoagulant rodenticide; Barn owl; Eggshell thickness; Secondary poisoning