

Non-target mortalities during aerial strychnine baiting of house mice

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Abstract

The effect of strychnine baiting on non-target bird species was investigated in Queensland, Australia, during August and September 1995. Strychnine was aerially applied to 250 000 ha of crop to control high densities of mice. Searching for bird carcasses was conducted in two regions. A sample of the birds collected was chemically tested for the presence of strychnine and other poisons. We attributed strychnine poisoning to 117 of 157 birds found. The proportions of birds of each major feeding group that tested positive to strychnine were 82.2% for granivores, 55.5% for raptors, and 69.3% for omnivores. Most bird carcasses (80%) were found on the edge of the baited crop or within 10 m of the edge of the crop. Of the 11 birds analysed quantitatively, the average level of strychnine in the liver, gizzard and crop was $10.80 \mu\text{g g}^{-1}$ (± 5.77 s.e., $n = 7$), $77.30 \mu\text{g g}^{-1}$ (± 42.41 s.e., $n = 10$) and $372.17 \mu\text{g g}^{-1}$ (± 334.59 s.e., $n = 3$) respectively. Significantly more poisoned birds were found per hour of search time around the wooded Goondiwindi area (15 birds: 0.71 birds per hour) than around the open Dalby area (12 birds: 0.08 birds per hour) ($\chi^2_1 = 28.42$, $P < 0.001$). Our results show that non-target deaths occurred with strychnine baiting. To reduce these deaths we recommend that: (i) the baited buffer zone around the edge of baited crops be set at 50 m; (ii) no areas of bare ground should be baited; and (iii) baiting should not occur if there is a chance that bait will remain on the ground for more than seven days.