

Evaluation and Cost-effectiveness of Strychnine for Control of Populations of Wild House Mice (*Mus domesticus*) in Victoria

Peter R. Brown, Grant R. Singleton, Brian Kearns and John Griffiths

Abstract

The efficacy and cost-effectiveness of strychnine baiting was tested at sowing in May–June 1994 in two cereal-grain-growing regions of Victoria, when numbers of house mice (*Mus domesticus*) were high (up to 1000 mice ha⁻¹ in the Mallee) and moderate (100–250 mice ha⁻¹ in the Wimmera). In each region, there were four replicates of baited and unbaited sites. Strychnine was applied once by ground spreaders to 40% of each stubble paddock and to all fencelines at each treated site. Treatments did not significantly affect the demographics (size cohorts, breeding status or sex ratio) or abundance indices of mouse populations. The most pronounced reduction occurred in stubble paddocks (harvested five months earlier) in the Mallee region, where there was a 57% reduction in mean mouse density two days after baiting. This difference was not significant because of high variation between sites within treatments. Moreover, three weeks later the mean density of mice in treated stubble paddocks was approximately double that in the untreated sites. The Wimmera study indicated that strychnine had a minimal effect on mouse populations when ample other food was available. The application of strychnine was inexpensive: \$A0.45 ha⁻¹ in the Wimmera and \$A0.61 ha⁻¹ in the Mallee; however, mouse damage to crops after sowing was minor. Unfortunately, we could not accurately assess damage to crops because of compensation at an early stage of growth and problems with assessing damage caused by mice. Overall, our results suggest that although strychnine may be an effective palliative method of control when a mouse plague has occurred, its effectiveness as a strategic rodenticide for preventing plagues is questionable.