

Potential killing effectiveness of the Sturgeon rat/stoat trap

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ABSTRACT

The Animal Welfare Act 1999 enables traps that are considered unacceptably inhumane to be prohibited. This provision has resulted in an increased awareness of how well kill traps actually work against the intended target species. Landcare Research was commissioned by the Department of Conservation to investigate the potential of the Sturgeon rat/stoat trap to kill rats and stoats within the National Animal Welfare Advisory Committee (NAWAC) guidelines. The trap rendered two rats irreversibly unconscious rapidly (< 30 seconds), leading to death. However, a third rat and a single stoat received strikes on non-vital regions, and both animals had to be euthanased. In its current form the trap does not have the potential to meet the NAWAC guidelines for kill trap performance. To be an effective rat trap and a potentially effective stoat trap, the Sturgeon trap will need to be modified to achieve consistent neck/rear-skull strikes on both rats and stoats.

Keywords: rats, stoats, Sturgeon rat/stoat trap, Animal Welfare Act 1999, New Zealand

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1. Introduction

Landcare Research was commissioned by the Department of Conservation to test the Sturgeon rat/stoat trap for its potential to kill rats and stoats quickly. This was an investigation to determine if the killing mechanism of the trap (a rubber ring) and the targeting of this on the animal could produce unconsciousness leading to death within the 3-minute time frame required by the National Animal Welfare Advisory Committee (NAWAC) guidelines. To minimise the cost, the trial was restricted to a preliminary test with three rats and one stoat to gauge if the trap had the potential to pass a complete trial for each species following the NAWAC guidelines.

2. Objectives

To determine if the Sturgeon trap had the potential to pass the NAWAC guidelines by:

- Determining the time to loss of consciousness of three Norway rats that triggered the trap
- Determining the time to loss of consciousness of one stoat that triggered the trap.

3. Methods

The rats and stoat used were wild-caught and acclimatised at the Landcare Research animal facility for at least 2 weeks.

Each individual rat was placed in an enclosure with an opening against which the trap was placed. For the stoat, the trap was placed against the opening of the stoat nest box. Each animal was observed until it entered and triggered the trap.

Upon triggering the trap the time to loss of palpebral reflex was measured by blowing on and/or touching the corner of the eye. Cessation of the heartbeat was determined using a stethoscope. The strike location of the trap on the animal was recorded. Captures were monitored and recorded on video. Animals were euthanased if the trap did not strike them in a vital region (head, neck or thorax), or if they were still conscious at 3 minutes after capture. Animals were euthanased using an intracardiac injection of 2 ml of pentobarbitone.

The work was carried out with approval from the Landcare Research Animal Ethics Committee (03/01/02).

TABLE 1. STRIKE DETAILS AND TIMES TO LOSS OF PALPEBRAL REFLEX AND CESSATION OF HEARTBEAT FOR RATS CAUGHT IN THE STURGEON TRAP.

WEIGHT (g)	SEX	RING POSITION	PALPEBRAL REFLEX (min:s)	HEART STOP (min:s)	NOTES
178	Male	Neck	< 0:30	1:50	
250	Male	Skull, just forward of ears	< 0:30	2:50	
460	Male	Nose	-	-	Euthanased

4. Results

The first two rats tested were rendered unconscious rapidly (< 30 seconds), but the trap failed to strike the third rat in a vital region (Table 1). The rubber ring caught the rat around the nose and it had to be euthanased. The single male stoat tested was struck in an ineffective region (forward of the eyes), and had to be euthanased.

5. Conclusions

The killing mechanism of the Sturgeon trap, a rubber castration ring, has the capacity to kill rats rapidly with head or neck strikes. However, in its current form the trap could not ensure consistent strikes on the critical neck to rear-skull region. The capacity of the rubber ring to kill stoats effectively (unconsciousness within 3 minutes leading to death) with neck strikes is unknown as the single stoat tested was struck on a non-vital region.

To be an effective rat trap and a potentially effective stoat trap, the Sturgeon trap will need to be modified to achieve consistent neck/rear-skull strikes on both rats and stoats. Because the animals are not restrained by the trap, it is essential that such a mechanism targets the animal in a vital area every time the trap is triggered. Otherwise animals that are poorly struck in the field will 'escape' and their death will potentially be prolonged.

6. Acknowledgements

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