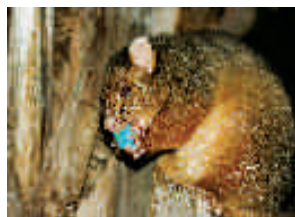




Toxicity of Cholecalciferol to rats in a multi-species bait



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Introduction

- Feracol[®], a paste containing 0.8% cholecalciferol, has been used for possum control.
- It has a low risk of causing secondary poisoning or bioaccumulating.
- Pen and field trials have been undertaken to assess the effectiveness of this paste for controlling rodents.

Methods

Cage Trials

- 15 laboratory Norway rats (230-405g) and 20 wild caught Ship rats (108-184g) were tested.
- The Norway rats and 4 Ship rats were offered both Feracol[®] and a non-toxic equivalent paste over 48 hours.
- 16 Ship rats were presented with Feracol[®] alone.
- The amount of bait eaten, mortality, and time until death were recorded.

Field Trials

- Monitoring of rat numbers before and after application of Feracol[®] bait was undertaken at three trial sites in the Urewera National Park.
- The sites were 34, 180 and 220 ha respectively. Rat population density was assessed using tracking tunnels.
- Philproof[®] bait stations containing 200g Feracol[®] were placed 50m apart on grids at the Lions Hut site and monitoring was undertaken at one location p/ha using tracking tunnels.
- At Mangaone and Pakoakoa, two Striker[®] bait stations containing 18g Feracol[®] were sited at 25m intervals on lines 150m apart, and monitoring was undertaken with 5 lines of 10 tunnels at 50m intervals.

Results

Cage Trials

- Thirty four rats died in an average 4.0 days. Deaths first occurred after one day to 4 days.
- Only one rat of 35 survived. This rat did not eat any toxic bait.
- Feracol[®] was effective when given alone or in the choice test when presented alongside non-toxic paste.

Rat	Study Type	Bait Eaten (g)	Mortality
Norway	Choice	0 – 20.4	14/15
Ship	Choice	1.6 – 6.3	4/4
Ship	No choice	0.7 – 16.1	16/16

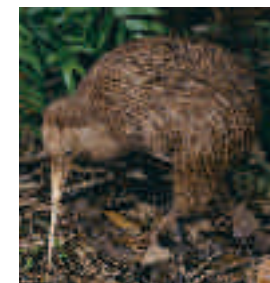
Field Trials

- Feracol[®] was extremely effective in reducing the % rat tracking rate at all three sites.

Name of site/size of treatment area (ha)	Treatment regimen/ No. of bait station /Amount of bait	Monitoring systems	% rat tracking results before treatment (non-treatment area in brackets)	% rat tracking results after treatment (non-treatment area in brackets)	% reduction in tracking (non-treatment area in brackets)
Lions Hut 34	Philproof bait stations 50x50 m grid, 200g	Randomly placed at approx one tunnel p/ha	78 (93)	3 (59)	96 (34)
Mangaone 180	2 Strikers containing 18g every 25m on lines 150m apart	Five lines of 10 tunnels at 50m intervals	51	0	100
Pakoakoa 220	2 Strikers containing 18g each every 25m on lines 150m apart	Five lines of 10 tunnels at 50m intervals	36	0	100

Conclusions

- These cage and field trials demonstrate that Feracol[®] is effective at killing rats.
- Both moderate and high concentrations of Ship rats were effectively controlled by Feracol[®] in the Philproof[®] and Striker[®] bait station delivery systems.
- At these sites, sustained possum and rodent control is enabling recovery of native bird populations.
- Feracol[®] is now registered for possum and rat control.
- We are currently working on a low dose formulation which we believe will be safer whilst having similar efficacy to paste containing 0.8% cholecalciferol.



Bibliography: Eason CT. (1991). Cholecalciferol as an alternative to sodium monofluoroacetate (1080) for poisoning possums. *Proceedings of the New Zealand Weed and Pest Control Conference 44:* 35-37
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