



Zinc Phosphide in Paste Baits for Control of Possums, Rats and Mice

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Background

- Zinc phosphide was first used in Europe in 1911 as a vertebrate pesticide.
- In contrast to 1080, it is used by our trading partners in the USA, Europe and Australia.
- Over 6 years of research has produced an effective new product.

The Product

- **ZaP Possum Paste** contains 1.5% microencapsulated zinc phosphide as the active ingredient, blended into a palatable bait.
- Single dose bait controls possums.
- Intended use for ground control in bait stations, paper bags, or as paste on earthen spits.

Efficacy (Table 1)

- The LD₉₅ of 27.5 mg/kg for encapsulated paste means ~5.5 g kills 95% of possums.
- Encapsulation has been shown to improve palatability of bait.
- Cage studies on possums has shown that bait remains effective before and after bait storage of 6 months.
- Field trials undertaken in Canterbury with the encapsulated zinc phosphide paste produced % kills of 91 - 97%.
- Clinical signs of poisoning are evident on average 1.5 hours after bait consumption, and death occurs within 5 hours.
- Efficacy of zinc phosphide for rat and mice control overseas has sometimes been limited by detection of the poison and bait shyness.
- We believe we have now overcome this through an encapsulation process producing 100% mortality in cage trials.

Table 1. Summary of cage and field trials in possums.

Type	Mortality
Cage – oral gavage	9/9
Cage – standard ZP	8/16
Cage – encapsulated paste 1	13/13
Cage – encapsulated paste 2	36/37
Cage – encapsulated paste 3 (stored)	15/16
Field 1	96%
Field 2	97%
Field 3	91%
Field 4	91%



Registration dossier filed with NZFSA..

Non-target Risks

- The main advantage of zinc phosphide over 1080 is low risk of secondary poisoning.
- In the carcasses, concentrations decline rapidly, and a half life of 3.4 days in the stomach of possums vs >90 days for 1080.

Recent Developments

- Zinc phosphide is registered internationally as an alternative to 1080, but has never been registered in New Zealand.
- We have completed Chemistry and Manufacturing, Toxicology, Efficacy, Residue and Welfare registration dossiers for zinc phosphide.
- Dossiers were submitted to the regulated authorities early in July for paste bait for possum control.
- We are working now to extend the original registration to enable the zinc phosphide to be used to control 3 species: possums, rats and mice with multi species paste and solid bait.



Bait applying in the forest.

Acknowledgements

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