









- leakproof containers for storing poison bait
- personal protective equipment
- towel, soap, dish or bucket
- first aid kit
- warning signs
- marking tape

## PROCEDURES

Always read relevant permit for conditions and directions for use.

### Assessment of site and estimation of rabbit numbers

- A careful on-site risk assessment should be undertaken before a baiting program is commenced. To reduce the risks of pindone exposure to humans and non-target animals and to maximise effect on rabbit populations, bait should NOT be laid in the following instances:
- in the vicinity of macropod, bandicoot and native rodent refuge areas;
- when rain is expected in the next 24 hours;
- in urban areas on residential blocks less than 1000m<sup>2</sup> in size;
- in areas that are accessible to livestock or domestic animals;
- where streams, waterways or rivers may become contaminated;
- where foodstuff or feed intended for human or animal consumption may become contaminated; or
- where children may have access.
- Warrens, rabbit harbour and scratching and feeding areas should be located to ensure accurate placement of bait.
- The density of rabbits on the site should be estimated using spotlight counts and/or warren monitoring. The location and numbers of rabbits on neighbouring properties should also be approximated.
- Contact your local authority for more information and advice on site assessment and monitoring of rabbit numbers.

### Notification and warning signs

- In most States formal notification of neighbours is not required (exception is NSW), but it is recommended that all adjoining neighbours be notified by telephone, personal contact or in writing of the commencement of a baiting program. In NSW, formal notification MUST be given at least 72 hours prior to laying baits.
- All stock should be removed from the baited area during a baiting program. Dogs should be muzzled or restrained and cats confined to prevent them from eating poisoned rabbit carcasses.
- Warning signs must be erected at all entry points to the property, entrances to the actual poisoning site and at property boundaries fronting a public thoroughfare. Each sign should include the date laid, which toxin has been used, and for which pest animal. They must remain up for a minimum of 4 weeks after baiting.

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- More detailed information on notification and warning signs can be found in the relevant product labels, permits and State guidelines e.g. Vertebrate Pest Control manuals, Landcare notes, Farmnotes etc.

### Laying of bait

- Most States use a '*pulse baiting technique*' where 2 to 3 free feeds of non-poisoned baits are laid at intervals of 2 days. Free feeding is followed by 2 to 3 feeds of pindone poisoned baits laid 3 to 5 days apart. Although not essential, free feeding of non-poisoned baits allows estimation of amount of poisoned bait required and assessment of any non-target uptake. It also allows rabbits to become accustomed to eating the bait and for toxic bait to be eaten rapidly when applied.
- Western Australia uses a '*one-shot baiting technique*' where a trail of pindone impregnated oats, proportionally mixed with untreated oats, is laid at a specified rate. Bait is topped up as required using the minimum amount of bait possible. Separate free feeding is not offered.
- The placement of bait is critical. Trails of bait must be laid through feeding areas where rabbit activity is highest and preferably where the pasture is short or absent. It is recommended that two trails are laid. One at a minimum of 30 metres from where rabbits are living, and another 40 metres out from the first trail. Bait is distributed using either of the following methods:
- *Furrow baiting* – bait is placed in a furrow 10cm wide and 2cm deep that has been cut into the soil using a hoe, mattock, disc or specially designed baitlayer.
- *Broadcast or scatter baiting* – bait is scattered in a swathe around 5 metres wide, often using a vehicle-mounted or towed spreader. This method is used in areas where it is impossible to run a trail e.g. rocky terrain, near fallen timber, in crops, where erosion may be a problem. A strip of spring steel can be attached to the bait laying vehicle so that a scratch mark is left in the soil enabling the scatter bait trail to be found later.
- Baits should be laid in the evening.
- Monitoring of numbers and amount of free-feed taken will help to estimate the quantity of poisoned bait required. Sufficient bait is required to allow all rabbits in an area to consume approximately 15-30g of bait from each application. Adjust quantities so that no more than 20% of the bait remains on the following morning. As a general guide the following amounts are recommended for '*pulse baiting*':

### Conventional baiting

- NSW and Victoria use a '*conventional*' baiting technique' where free-feeds of non-poisoned baits are laid prior to a single application of 1080 poisoned bait. The procedures used for each State are as follows:
- NSW – 3 free-feeds must be laid at least 3 days apart. The 1080 bait must be laid 3 to 5 days after the last free-feed.
- Victoria – 2 free-feeds are laid. The interval between the first and second feed should be not less than 6 days and that between the second and poison feed not less than 4 days.
- Free-feeding of non-poisoned bait is an essential step to allow rabbits to become accustomed to eating bait material. It also enables an estimation of amount of poisoned bait required. Suggested quantities of bait for the first free-feeding are:

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Density of rabbits	Low	Medium	High
Kg oat bait per km trail	3	6	9
Kg carrot bait per km trail	10	20	30

- The recommend rate of lay for one-shot baiting is: 17 kg/km for furrow trails and 20 kg/km for broadcast or scatter trails.
- Rabbit numbers will start to progressively decline about 10 days after the first application of poison bait.

### Collection of uneaten bait and rabbit carcasses

- All bait that is uneaten 4 days after bait consumption ceases should be collected and destroyed either by incineration or burying at a depth of 500mm. Alternatively, trails of poisoned oat or pellet bait can be covered with sufficient soil to prevent non-targets from gaining access.
- Carcasses of poisoned rabbits should be collected for a minimum of 12 days after the last poison feed. They should be destroyed by incineration or buried at a minimum depth of 500mm in a disposal pit.

### PROCEDURAL NOTES

- Bait containing pindone is likely to lose potency after laying in wet conditions, with bait prepared from the water soluble form (sodium salt) expected to do so more rapidly. It is therefore recommended to avoid laying bait if rain is predicted overnight.
- More detailed information on pindone use can be found on approved labels, from various state guidelines (e.g. vertebrate pest control manuals, Landcare Notes, Farmnotes etc.) and relevant federal, state and territory legislation.

### REFERENCES

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2. Anon. (2002). The NRA review of pindone. National Registration Authority for Agricultural and Veterinary Chemicals. Canberra.
3. Anon. (2004). Vertebrate Pest Control Manual. Agricultural Protection Program. NSW Agriculture.
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7. Eason, C. T. and Jolly, S.E. (1993). Anticoagulant effects of pindone in the rabbit and Australian brushtail possum. *Wildlife Research*, **20**, 371-374.
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9. Twigg, L. E., Lowe, T. J., Martin, G. R. and Gray, G. S. (1999). A review of the anticoagulant pesticide pindone. Vertebrate Pest Research Services. Agriculture, Western Australia.
10. Williams, K., Parer, I., Coman, B., Burley, J and Braysher, M. (1995). *Managing vertebrate pests: rabbits*. Australian Government Publishing Service, Canberra.

### **APPENDICES**

Relevant federal, state and territory legislation for the use of 1080

#### **Federal**

*Environment Protection and Biodiversity Conservation Act 1999*

Information available from the Department of Sustainability, Environment, Water, Population and Communities website: <http://www.environment.gov.au/epbc/>

#### **Australian Capital Territory**

*Environment Protection Act 1997*

#### **New South Wales**

*Pesticides Act 1999*

#### **Northern Territory**

*Poison and Dangerous Drugs Act 1999*

*Territory Parks and Wildlife Conservation Act 1998*

#### **Queensland**

*Health (Drugs and Poisons) Regulations 1996*

#### **South Australia**

*Controlled Substances Act 1984*

*Controlled Substances (Poison) Regulations 1996*

#### **Tasmania**

*Poisons Act 1971*

*Agricultural and Veterinary Chemicals (Control of Use) Act 1995*



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### **Victoria**

*Agricultural and Veterinary Chemical (Control of Use) Act 1992*

### **Western Australia**

*Poisons Act 1964*

*Poisons Regulations 1965*

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Reference me as: Sharp T (2012) NATSOP-RAB003 National Standard Operating Procedure: Ground baiting of rabbits with pindone. PestSmart website. <https://pestsmart.org.au/toolkit-resource/ground-baiting-of-rabbits-with-pindone/>