

POSSUM CONTROL – HANDLAYING CYANIDE PASTE ([CONTROLLED SUBSTANCES LICENCE](#) REQUIRED)

BAIT APPLICATION

Preparation

- Only apply where 3 fine nights are expected. Cyanide paste is fairly unstable and the toxicity of cyanide baits deteriorates rapidly in wet weather.
- Lay out on grids by GPS or, in rough terrain, place on ridges and spurs with additional lines located on 100 m contours using an altimeter. Inaccurate location of lines will cause gaps in coverage where pockets of high possum numbers can persist. Mark lines well, or use GPS waypoints, for ease of relocation to reduce the risk of missing baits and dead possums when revisiting the lines.
- In areas where ground birds are present, baits must be laid a minimum of 70 cm above the ground, preferably in bait stations that minimise the risk of spillage. Kiwi and weka [1] have been found dead after the use of ground laid cyanide paste.

Bait

- Three type of cyanide paste bait are available: [Pestoff Cyanide Paste](#), [Trappers Cyanide Paste](#), and [Cyanara50 paste](#).
- Cyanara50 paste has micro encapsulated cyanide, which reduces gas emissions. This may improve kills, reduce cyanide shyness and improve operator safety.
- Cyanide paste is supplied containing the various lures: cinnamon, orange, aniseed, plum, cherry, and lemon are among those most preferred by possums [2,3]
- Cyanide paste should be stored for no longer than 6 months. Old cyanide paste frequently administers sub-lethal doses.
- Tubes of cyanide should be massaged well before opening to ensure the oil and cyanide are mixed throughout the paste.

Antidote

- Cyanide is a rapidly acting poison so an antidote, in the form of [Amyl nitrite capsules](#), must be carried at all times when handling cyanide. Amyl nitrite capsules are available from suppliers of cyanide-based possum baits.
- In the event of suspected poisoning, a capsule of amyl nitrite is crushed between the fingers and held under the patient's nose. Inhalations should be administered for up to 30 seconds every 2 minutes, using a fresh capsule each time until signs of recovery occur. Up to 8 capsules may be given while waiting for medical attention, if necessary, for administration of intravenous antidotes.
- Memorise the safety instructions for the safe use of these capsules, and check that capsules have not expired before planning the control operation.

Effective use of cyanide paste

- Pre-feeding should be undertaken for at least 2 nights [4]. It should consist of either a handful of flour and icing sugar (ratio 4:1) containing a few drops of a lure, or a prefeed paste product (e.g. [Ferafeed](#), [PestOff Wonder lure](#), or [Possum Dough](#)). Prefeeding increases possum kills as it reduces wariness (neophobia) of possums to toxic bait [5,6] and reduces the risk of bait aversion developing [7,8].

- For effective control (rather than fur-harvesting), place pre-feed baits every 3-5m along transects no more than 150m apart in forest habitats [9]. Additional baits should be placed in possum preferred habitat. Average home range of male possums is 1.9ha and females is 1.3 ha [10].
- At the end of pre-feeding, put “pea sized” cyanide paste baits where the pre-feed has been interfered with by possums.
- The cyanide paste should be placed on stones, sticks, pieces of cardboard, or in small bait stations. This will prevent the cyanide paste coming in contact with ground moisture, resulting in loss of hydrogen cyanide (HCN) gas.
- The paste should be surrounded with a small amount of the same material used as prefeed - see above.
- While pre-feeding and applying toxic baits, flour should spread on the tree trunk beside the bait up to about 1 metre above ground. This acts as a visual lure to attract possums.
- After 2 nights the toxic baits should be destroyed by burying. Baits not destroyed will degrade slowly and may sub-lethally poison possums resulting in bait-shyness.

SUSTAINING POSSUM CONTROL OVER THE LONG TERM

- Monitoring conservation outcomes is essential to judge effectiveness of the control programme. Control operations are useless unless outcomes are achieved.
- Pre- and post-operational monitoring is essential to determine the effectiveness of the operation. A comparison of pre- and post- data gives the most robust estimate of the kill result. Post- data cannot reliably be compared between operations.
- Reinvasion of possums into controlled areas can be reduced by using natural boundaries e.g. waterways and pasture, and buffer zones of at least 3km wide.
- Alternating bait types, toxins, lures and techniques are important in ongoing control programmes [11]. Continuous use of a single type of toxic bait is not recommended.
- Ensure all cyanide paste baits are removed or buried after 2 days baiting. This will help prevent sub-lethal poisoning of possums and bait shyness developing.
- Change the type of lure periodically. This will help to avoid some possums developing aversion to lures.
- Cyanide is often used very effectively in combination with traps.

LIMITATIONS

- Labour costs increase in difficult terrain.
- Incorrect use of cyanide paste can cause bait shyness that can last for at least 2 years [12] .
- Cyanide paste can produce inconsistent kills (c.70% kills). Between 12 and 54% of possums in wild populations have been found to be shy towards cyanide paste [13].
- The length of time cyanide paste remain toxic will depend on rainfall. Cyanide paste is fairly unstable and the toxicity of cyanide baits deteriorates rapidly in wet weather.
- Non-encapsulated cyanide paste (i.e Pestoff Cyanide paste, Trappers cyanide paste) needs to be handled with extreme care because it emits hydrogen cyanide (HCN) gas which is highly toxic to humans. Even small amounts of cyanide gas can be lethal to humans.

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