

Intensive Pest Animal Management

Choosing the right bait

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There are quite a few alternatives when it comes to choosing a bait. Factors that will need to be considered include –

- Target pest
- Presence of pets or livestock
- How regularly bait will be checked
- Cost
- Presence of non target valued fauna
- Residual risk in the environment
- Licensing requirements
- Presence of people (especially children)

Risks to pets, livestock or native species

- Secondary poisoning - occurs when non-target animals eat sick or dead pests and become affected by the poison. Secondary poisoning can result in death, although for some poisons there are antidotes. Some pest control operations rely on the fact that mustelids and feral cats will die due to secondary poisoning.
- Direct poisoning - occurs when bait is consumed by a non-target animal such as a dog. Death is likely unless an antidote is administered in time.
- Sub-lethal dose – an animal eats the bait but not an amount sufficient to kill it, although it may become ill. Such animals usually become bait shy because they associate eating the bait with feeling unwell.
- Residual risks
 - bioaccumulation occurs when an animal eats the poison but isn't killed by it, and the poison then accumulates in the organs or fatty tissue. Bioaccumulation also occurs when animals eat other animals with poison residue. For example, a kiwi may eat a weta that has recently ingested a poison. Little is known about the long

term effects of bioaccumulation but it is generally better to avoid the risk. Bioaccumulation may become a health threat to humans if an animal with poison residue is consumed e.g. feral pigs. Some poisons (e.g. brodifacoum) are biologically persistent, i.e. accumulate in organs or fatty tissue but break down over time.

- uneaten poison remains in the environment and is active (toxic) for a period of time, posing a risk to non-target animals.

Frequency of bait checking and other considerations

This is important when using 1st generation anticoagulants, as bait needs to be available for up to 5 consecutive days. Cereal baits are usually more palatable but will deteriorate quickly once outdoors (even when enclosed in a bait station). It is often desirable to use a waxed block of bait to increase field life, and to avoid caching (storing) of bait by rodents. A waxed block with a central hole that can be fixed in a bait station is ideal. Recent developments of pastes and long life gels provide more options especially if you don't want to have to service bait stations too often. These bait forms are generally more expensive than pellets, and the pest animals may be able to eat quite a lot more than a lethal dose before dying – increasing the cost of baiting.

For maximum cost effectiveness where initial pest numbers are high, use an effective fast acting bait like cyanide first for a quick knock down of pests followed by a maintenance programme with waxed or longer life bait.

Sometimes we can undertake control using restricted baits (e.g. cyanide) for you, or put you in touch with our preferred contractors. Contact your local Biosecurity Officer for more information.

Baits

Bait is divided into different types based on method of action.

Anticoagulants

These baits kill animals by causing internal bleeding.

First generation – diphacinone (e.g. Ditrac, Ratabate, Pestoff® Ferret paste, Pest-gone), coumatetralyl (e.g. Racumin®, No Rats & Mice, Tracks No Rats) and pindone.

These baits were the first developed. Animals must eat the bait over a consecutive period of up to 5 days to get a lethal dose. They tend to be slower acting than second generation baits, taking 5-8 days to kill the target animal. Overseas, rodents have become resistant to first generation baits because of consuming sub-lethal doses or because only one type of toxin has been used over a long period, leading to pesticide resistance.

These pesticides are suitable for targeting rodents, with the exception of Pindone which targets rabbits and possums.

Advantages	Disadvantages
Relatively cheap	Low risk of secondary poisoning
No licence required to use (except for Pindone)	Need continuous feeding for up to 5 days
Antidote available, but requires long term treatment	Not usually suitable for possums because of the quantity required to be eaten, although possums will eat it, resulting in less available baits for rodents
	Slow to break down in the soil, not water soluble

Second generation – brodifacoum (e.g. Pestoff, Talon), bromadiolone (e.g. Ridrat, Contrac, Squeak), and flocoumafen (e.g. Storm, Stratagem).

These baits were developed to overcome the problems with first generation products. They tend to be stronger, faster acting and pests can consume a lethal dose in one sitting.

Suitable for targeting rodents & possums.

Advantages	Disadvantages
Relatively cheap	High risk of secondary poisoning
No licence required to use	Possums can eat more than a lethal dose increasing cost
Antidote available, but requires long term treatment	Slow to break down in the environment

1080 (Sodium monofluoroacetate)

Causes cardiac or respiratory failure, death occurs within 48 hours for possums. Registered for use on possums, deer, goats, wallabies, rodents, cats and rabbits. Widely used for large aerial control operations for possums.

Advantages	Disadvantages
Achieves consistently high kill rate 80-100%	Requires a licence to use
Only single dose needed	Low risk of secondary poisoning
Highly soluble in water, breaks down quickly	Some risk of bait shyness if sub-lethal dose consumed
Cheap	No antidote available
Generally low environmental impacts	Livestock require a withholding period
Generally safe for widespread application if best practice implemented	

Cyanide (e.g. Cyanide paste, Feratox, Cyanra ferapaste).

Currently only registered for use on possums. Very effective acute toxin causing respiratory failure within minutes.

Advantages	Disadvantages
Cheap	Requires a licence to use
Humane - very quick death	Usually no time to administer antidote
Degrades rapidly in the environment	Very toxic, subject to strict controls for transport, storage and use
Low risk of secondary poisoning	
Only single dose required	

Cholecalciferol (e.g. Feracol® and No Possum gel bait)

An acute poison that works by releasing calcium which leads to cardiac arrest or renal failure. Currently registered for use on possums and rats. Possums will lose their appetite after 24 hours and die within nine days; rats will die within 4 days.

Advantages	Disadvantages
Low risk of secondary poisoning	Expensive
No bioaccumulation	Antidote treatment available but expensive
Degrades rapidly in the environment	
Effective at rapidly reducing possum population	
Less toxic to birds c.f. 1080	
Only single dose required	
Doesn't require a licence to use	

Summary of options available

Bait type	Possoms	Rodents	Mustelids & Feral cats	Rabbits
1 st generation anti-coagulant	No	Yes	Limited secondary kills only except for ferrets (Pestoff® ferret paste)	Pindone only
2 nd generation anti-coagulant	Yes	Yes	Secondary kills only	No
1080	Yes	Yes	Secondary kills only	Yes
Cyanide	Yes	No	No	No
Cholecalciferol	Yes	Yes	No	No

Our recommendations

If targeting possums only - use either

- Cyanide (requires licensed operator); or
- Cholecalciferol (Feracol®); or
- Brodifacoum (Pestoff); or
- 1080 (requires licensed operator)

If targeting rats only – use either

- Cholecalciferol; or
- Brodifacoum; or
- Diphacinone (Ratabate)

For rats and possums – use either

- Cholecalciferol (Feracol®); or
- Brodifacoum (Pestoff)

Why use a bait station?

Using a bait station ensures that –

- Bait is kept dry and is effective over a longer period
- Access to non-target animals is restricted or prevented
- Allows the placement of signage
- Makes setting up permanent bait network easier.

The bait station we recommend is the mini Philproof. This station has a good design and is large enough for most pest animal control operations. We may be able to supply Philproofs to you at cost. Please contact your local Biosecurity Officer for details.



"Hey, this is my café, get lost"



"surely there's more in here..."