

Dog aware fact



Strychnine

Strychnine is used to control wild dogs and foxes. It is a natural substance extracted from the seeds of the *Strychnos* genus (*Strychnos nux-vomica* and *Strychnos ignatii*), and it occurs naturally in three Queensland tree species (*Strychnos lucida*, *Strychnos psilosperma* and *Strychnos minor*).

How to obtain strychnine

Queensland Health can issue landowners with a permit to obtain, possess and use a 25-gram pack of strychnine powder or crystals to control vertebrate pests on their own property only. The landowner must follow the strict conditions on the permit.

Toxicity

Dogs are moderately susceptible to strychnine. Table 1 shows the susceptibility of different animals to strychnine.

Table 1: Strychnine toxicity (LD₅₀ values)

Animal	mg/kg body weight
Rabbit	0.6
Dog	1
Rat	5
Pigeon	21
Possum	30
Human	1–30

Note: LD₅₀ values represent the lethal dose for 50% of a population.

How it works

Strychnine prevents contracted muscles from relaxing. This causes death by asphyxiation as contracted respiratory muscles are unable to perform their normal breathing function.

Minimizing the risk to non-target species

Risk is a combination of two factors—hazard and exposure. The hazard in this case is the toxin (and the animal's sensitivity to it). The key element is to maximise exposure to the animal you wish to target, and minimize exposure to non-target animals.

To do this, bait materials are impregnated with concentrations of strychnine specific to the target species. The concentration used depends on:

- the lethal dose rate required
- body weight
- amount of bait likely to be consumed.

Typically 30–60 mg is all that is required to kill a wild dog.

The potential danger to non-target species is further minimised by:

- using a specific bait type
- free-feeding (to decrease their appetite)
- estimating how much bait they are likely to consume and using only that amount
- placing bait appropriately (e.g. either burying or otherwise concealing it)
- bait tying where a bait is tied with wire then tied onto stakes or nearby vegetation and usually partially buried or covered. This prevents birds and goannas from taking the bait.
- stipulating a minimum bait size
- using an appropriate strength of strychnine.

Advantages

Strychnine is another chemical tool for controlling wild dogs when use of sodium fluoroacetate (1080)—the preferred option—is considered unsuitable.

Disadvantages

The greatest disadvantage of strychnine over 1080 is that strychnine is not as target selective. Nor is there any known antidote for strychnine poisoning. The onset of symptoms can be delayed from 10 minutes to 10 hours depending on the species and the individual animal concerned. This is due to the time it takes for the strychnine to be absorbed. The best protection for working dogs is to muzzle them, and to tie them up when they are not working.

Environmental fate

The time that strychnine meat baits remain active under field conditions depends on the breakdown rate of the bait matrix and the weather conditions. When strychnine comes in contact with soil, it is immobilised by the clay component.

Recognising poisoned animals

Key symptoms commonly used to assign strychnine poisoning as the cause of death in a dog are agitation and vocalisation (yelping or barking), followed by tenseness and stiffening of the body, then death. Time to death from the first sign of symptoms can be up to two hours.

If you are dog aware:

You know that while strychnine can be useful in certain situations, 1080 is the preferred chemical method for controlling wild dogs.