

# Wild dog facts

## 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 strychnine powder 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 (LD<sub>50</sub> values)**

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

**Note:** LD<sub>50</sub> 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.

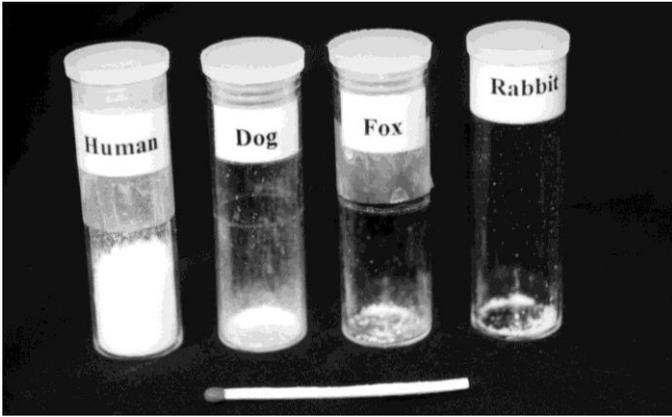
To do this, bait materials are impregnated with concentrations of strychnine specific to the target species. The concentration used depends on:

- 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.



**Vials of strychnine powder showing the amount of chemical required to destroy various species**

## Advantages

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

## Disadvantages

The disadvantages of strychnine compared to 1080 are that strychnine is not as target selective, does not readily break down in the environment and is considered to be less humane as affected animals remain conscious and appear to suffer pain and anxiety from the onset of clinical signs which include violent muscle spasms through to death from asphyxia and exhaustion. 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 or contain them when they are not working.

## Bait retrieval

Strychnine does not break down by microbial action as quickly as 1080. For this reason, strychnine baits should be monitored for uptake from target species and collected as soon as possible in line with the management program timeframes and picked up.

## Recognising poisoned animals

Initial symptoms are agitation, restlessness, vocalisation and progressive stiffness and paralysis. Affected dogs are hyper responsive to sounds. Time to death from the first sign of symptoms can be up to two hours. There is no antidote but prompt intensive veterinary care may save accidentally poisoned dogs.

## Further information

Further information is available from your local government office, or by contacting Biosecurity Queensland (call 13 25 23 or visit our website at [www.biosecurity.qld.gov.au](http://www.biosecurity.qld.gov.au)). Landowners requiring information on obtaining a strychnine permit for their land can contact the Department of Health, Health Protection Unit (call (07) 3328 9310).