Café Scientifique

1080 - friend or foe ?

What is 1080?

1080 is sodium fluoroacetate, a naturally-occurring plant poison which has been used in NZ since the 1950s for controlling animal pests such as possums, stoats, ferrets, wasps, rabbits and rats. It is also used in other countries to control predators including rats, coyotes, foxes and dogs.

The use of 1080 is controversial and the subject of letters to editors, documentaries, news programmes, sabotage and threats. Opposition to its use focuses on aerial drops of baits containing 1080. These drops have been described as indiscriminate, contrary to New Zealand's clean green image, damaging to non-targeted wildlife such as deer, pigs, birds and insects, and a threat to water supplies.

Why do we use it?

In New Zealand, 1080 is the main weapon against possums, which were introduced into NZ in the mid-19th century to be the basis of a fur trade. The possum 'threat' is two-fold. Firstly, possums may be infected with bovine tuberculosis, which can be transmitted to cattle and to deer. The prevalence of tuberculosis infected herds in NZ is high so we do not qualify as Tb-free [less than 0.2% of herds], unlike many of our competitors and customer nations. This threatens New Zealand's multi-billion dollar animal products markets.

Secondly, possums have found the NZ habitat ideal: without predators, with an equitable climate, and with an unlimited food supply. Possums now occupy over 90% of our land mass. As well as eating native and commercial vegetation they threaten power supplies and prey on native birds.

1080 is used in NZ in two ways. Firstly, ground control using baits containing 1080. Secondly, dropping 1080 baits made from carrots or cereals aerially over areas difficult and expensive to access from the ground. Use of 1080 in these ways has been successful in both reducing the prevalence of bovine tuberculosis-infected cattle and deer herds and in forest restoration.

Impact of 1080

Criticism that 1080 damages bird life and contaminates water supplies is unfounded as bird numbers have been found to increase long-term in forests where possum numbers have been reduced using 1080. And monitoring of water supplies, including drinking-water reservoirs, shows that 1080 is rarely found in water after 1080 treatment, with virtually no risk to humans. Aerial drops of 1080 baits have become safer and more predictable with the use of GPS systems, the introduction of Quality Assurance systems for operators, improved baits, and decreased number of baits per hectare.

In the Waikato, possum control (mainly using 1080) has reduced the prevalence of Tb-infected herds from over 200 in 1996 to 5 in 2006. Our region could now be classified as Tb-free.

1080 is only one of the animal pest control 'weapons' that animal pest controllers use. Others include anticoagulants such as brodifacoum, or cyanide, phosphorus, traps, pest-proof fences, and shooting. All control methods have advantages and disadvantages. Issues to be considered when deciding on control methods include cost, effectiveness, safety to operators and the public, persistence in the environment, humaneness, and risks to non-target wild life.

Currently, using 1080 is the method of choice for large-scale animal pest control operations. Its advantages include cost – it is relatively cheap, it is very effective in reducing animal pest populations, and it does not persist in the environment. Research is being done on new or improved control methods so that at some time in the future it will no longer be necessary to use toxins. The ideal method – one which would reduce breeding, be self-spreading and humane, and cost nothing – remains elusive!

Some sources of information:

The use of 1080 for pest control - a discussion document.
Prepared by the Department of Conservation and the Animal Health Board

Proceedings of The Science Workshop on 1080
The Royal Society of New Zealand. Miscellaneous Series 28

The Brushtail Possum - Biology,Impact and Management of an Introduced Marsupial
Editor, T L Montague, Manaki Whenua Press, Lincoln, Canterbury