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EDUCATION AND TRAINING INTEGRAL PART TO 1080 POSSUM CONTROL IN NEW ZEALAND

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ABSTRACT: New Zealand currently has large scale possum and rabbit operations being carried out on about 10% of its land area. Education and training are integral to possum control in New Zealand because of the heavy reliance that the control agencies in New Zealand place on toxic baiting with 1080 (sodium monofluoroacetate). Education of the general public is treated as a high priority since without their approval many of the operations would not be carried out. It is equally important that school children are advised on what toxic baits look like and why pest control operations are required. Training of pest control staff is also considered important as it is vital that all staff are well trained in the latest technology and at the same time can answer inquiries with the latest results of research.

KEY WORDS: vertebrate pest control, training, public education, pest management, poisons, control methods, 1080, sodium monofluoroacetate, *Trichosurus vulpecula*, possum, *Oryctolagus cuniculus*

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INTRODUCTION

Education and training are integral to possum control in New Zealand because of the heavy reliance that the control agencies in New Zealand place on toxic baiting with 1080 (sodium monofluoroacetate). Currently in New Zealand the main animal species being controlled are the possum (*Trichosurus vulpecula*), the European rabbit (*Oryctolagus cuniculus*) several species of feral deer, and mustelids including ferrets and stoats.

The possum is the major vertebrate pest in New Zealand. Possums act as vectors in the spread of bovine tuberculosis (*M. bovis*), and cause serious damage to indigenous forests and native birdlife.

Currently 1.25 million hectares of New Zealand are under continued maintenance operations for bovine tuberculosis possum control. In this financial year another 0.6 million hectares will be treated with initial control operations. Most of these maintenance operations and about 50% of the initial operations will be carried out with 1080 bait of various types applied by hand. About 0.3 million hectares will be aerially treated with either 1080 cereal pellets or diced carrot in various application rates from 4 to 6 kg per hectare for pellets or 8 to 14 kg per hectare for carrots. The toxic loading of 1080 bait varies between 0.08 to 0.15%. Lower sowing rates are used with higher toxic loadings.

In the case of protection of indigenous forests, the Department of Conservation currently carries out possum control on over 1 million hectares of forest. This large scale animal control for bovine tuberculosis and the protection of indigenous forests costs New Zealand about \$50 million per year. While some of the area is controlled by hunters with traps and other toxins such as cyanide, brodifacoum, cholecalciferol, phosphorus and pindone, the main toxin used is 1080.

This toxin is the most environmentally acceptable and cost effective toxin on the market today. New Zealand uses over 4 metric tons of the toxin each year for pest control. While the main use is for possum control, it is also used for rabbits and on feral deer in areas where they are known to have bovine tuberculosis.

A special committee, the National Possum Control Agency (NPCA), was set up in 1993 as an ad hoc coordinating body involving representatives of all agencies involved in possum control. The agency concerns itself with control programs and areas of training, public relations and consultation. The agency was also involved in the standardization of publicity material used to inform the public on the use of toxins in pest control.

The Ministry of Health, which under various Acts authorize all aerial poison operations and any operation that involves public land, has established guidelines for medical officers of health (MOH) in issuing permits for control operations. Part of those permit guidelines made it a requirement for agencies to hold education programs at all schools within 10 kms of areas to be treated with 1080.

With the wide reliance on the use of 1080, all agencies involved in its use have formulated a policy of coordination between agencies, and more importantly have embarked on a wide education and training program for all people involved in its use. This program is aimed at two areas: 1) educating the general public and the owners and neighbors of properties that are to be treated with 1080; and 2) training all staff using the toxin in the field to be as proficient as possible and keep up to date with new knowledge in possum control and toxin research.

EDUCATION

Education is a vital component in generating and maintaining public support for pest management programs. The general public are often against the use of toxins to control animal pests. This is brought about by the general perception that the use of pesticides is not good for the environment. Opposition may also come from people with hidden agendas that do not want to see pesticides like 1080 used because of their effect on game species, such as feral deer and pigs. These people seldom admit this is the reason they do not want poison used and instead use other arguments. Other people believe that the use of the unemployed would be a good way to control animal pests, and at the same time ease the

unemployment figures. Little do they realize the extent of the problem or the type of terrain involved.

In the education of the general public it is important that the information provided is technically correct and based on the latest research. It must allow people to decide for themselves how significant the issues are, and allow them to assess how well the risk is being managed by the agencies by balancing both the adverse and beneficial effects.

It is vital that the true extent of the adverse impact of possums on agriculture and the environment are understood by the general public. Generally, it is initially found that the public do not have a good appreciation of the problem. The public perception of the risks and issues associated with wild animal control programs is critical to the success of those operations. The public concerns drive politics that drive the laws and regulations.

New Zealand has seen public pressure force an inquiry by the Parliamentary Commissioner for the Environment, which resulted in a 196-page report "Possum Management in New Zealand." That report covered the use of 1080 and noted that, "The public disquiet at large scale poison operations is understandable. There is a risk using 1080. However the risk to the environment and to public health is low and in some areas there is at present no alternative to aerial control operations using 1080. Public disquiet will be dispelled only if adequate information is supplied by the agencies and every attempt is made to evaluate control options including aerial use of 1080. Careful planning with the assistance of all affected parties can help to achieve public support and develop appropriate strategies for managing possums." (Parliamentary Commissioner for the Environment 1994)

The NPCA has, with the agency's assistance, developed a wide range of publicity material aimed at addressing public concerns. This includes:

1. *1080 Questions and Answers*—answers the most commonly asked questions on 1080.
2. *Fact Sheet Package*—aimed at rural and semi-urban landholders, supplied on disk and hard copy.
3. *The Possum Busters are Coming*—for parents and care givers of pre-schoolers. (1080 Health and Safety)
4. *1080 is Not Kid's Stuff*—resource material for use in primary schools.
5. *Possum Control in Native Forests*—possum control for conservation purposes written for the general public.
6. *1080 A Review of the Science*—suited for people with a science background.
7. *Possum Control and the Use of 1080 in New Zealand*—written for the general public.
8. Possum Buster stickers and magnets—for use in schools.
9. *Model Permit Conditions for Use of 1080*—contains model permit conditions on use of 1080 for the guidance of MOH issuing permits for possum control operations.
10. A video on health and safety and awareness in possum control—for use in schools and for the general public at meetings.

11. *A Plague of Possums*—a video aimed at senior secondary science curricula dealing with science and ecology of the possum problem.
12. Various posters—such as conservation and possum control, as well as specific posters on the bovine tuberculosis problem and on 1080 for use in schools and public places.

Various agencies have also produced stickers, flyers, puzzles, and games that relate to possum control, along with numerous small publications on understanding the problem and how the farming community and the general public can assist in possum control in various ways. All of the above have, in many instances, helped the public to understand why this particular toxin is used.

We still have problems from some people over the use of 1080 on their land, though we now take the attitude that if a specific landholder does not want 1080 used on his property then he may request any other control method he likes or carry out the control himself. But in doing so, they must sign a heads of agreement or a contract to reduce possum numbers to a specific level. If they achieve that, they will receive a payment equal to the cost of the 1080 operation minus the cost of monitoring the result. All of the above effort appears to have achieved a generally better public acceptance to the use of 1080. Often school children, after they have been visited by the agencies, have a better understanding of the risks of 1080 and the precautions that need to be taken with domestic pets. They, in turn, inform their parents of the risks. Standard full training packages for the agencies to use in schools are being developed at the present. These will include mounted pest animals, samples of traps, poison warning signs, nontoxic samples of all baits, and other equipment used in possum control.

TRAINING

Training in pest control in New Zealand is also on the increase, with the realization from the agencies that staff need to be well trained and well informed. Staff must be able to use toxins safely and at the same time answer any questions on the use of toxins in the correct manner.

Research work on 1080 as well as other toxins is ongoing and the results of this research need to be relayed to the field staff at regular intervals to ensure they are well informed. This is done both by regular publications on the research findings, plus several technology seminars held each year throughout New Zealand to update key staff with any new advancements in control technology.

Both the Animal Health Board and the Department of Conservation have issued protocols that are regularly updated. Also in preparation is a series of Vertebrate Pest Control Manuals covering:

Vol 1. Toxins and Poisons: This covers statutory requirements for use of toxins and poisons; properties and uses; toxins to use on different animals; and health, safety, storage and transport.

Vol 2. Planning an Operation: This covers statutory requirements, contents of an operation plan, formal consents and approvals, notification and consultation, and contracts.

Vol 3. Conducting an Operation: This covers selection of the method of initial control, maintenance control and aerial control using 1080, and ground control methods and monitoring.

A full training package is also being developed with the Local Government Industry Training Organization to cover the whole range of pest management. This package will be designed in modules and can be studied by anyone. The assessment of this training will be carried out by on the job competency, and passes in any modules will be credited to the person passing the training.

Other training carried out includes specific courses of two to three days duration on subjects including aerial poisoning, monitoring, or maintenance methods of control, where course participants are actually involved in carrying out operations. Specific courses on management, health and safety, public relations, and other subjects are regularly carried out by the various agencies to further ensure that staff are competent to handle the general public in a professional manner.

As we are the biggest user of 1080 in the world, and are reliant on the use of this toxin, it behooves us to explain its use to all the public in New Zealand. One way of doing this is to ask a person, "If we must use a toxin to control vertebrate pests, then what sort of toxin should we use?" Is it one that has the following attributes?

1. A toxin that occurs naturally in plants in the environment.
2. A toxin that breaks down readily in the environment.

3. A toxin that does not cause residue problems.
4. A toxin that is humane in its action on most vertebrate pests.
5. A toxin that is cost effective in its use.
6. A toxin that mixes readily in a variety of bait.

There is only one toxin that fills that role and that is 1080—hence the reason we use it. The public perception of the use of toxins to control vertebrate pests is fragile in that one action which causes an accident will undo much of the good work done over the years to develop an acceptance of its use. It is, therefore, vital that control agencies continue to cement progress to allow the use of 1080.

We, as a nation, need 1080 to control the vertebrate pest problems we have, and money spent in education and training is a wise investment for the future of New Zealand's economy and environment. 1080 is a good toxin. The reason it has been restricted in some areas is that not enough effort has been made to explain its use, or because of its effects on other native vertebrate animals.

A lot of other toxins used in the world are not as humane, cause residue problems, and are far more expensive. Hence, many of them are not registered in New Zealand for wide use in agriculture. If they are registered, it is only for use in bait stations where bait application can be carefully monitored.