A message from the chief executive of TBfree New Zealand

William McCook

WELCOME to the third feature on TBfree New Zealand where we look at TB control in wildlife around New Zealand and on the West Coast. In doing so, we are keen to address some of the issues identified by the independent West Coast public opinion survey carried out late last year.

The survey showed that nearly 70 percent of West Coasters believe that an "unspecified, general use" of 1080 is the most widely used method for controlling possums on the West Coast. Nearly 20 percent believe that the aerial application of 1080 constitutes the most widely used method for controlling possums on the West Coast. That is not the case at all.

In fact, 1080 is one of a range of tools and methods we use to control possums, including other toxins, bait stations, hunters and traps. This year, close to 75 percent of the control area on the West Coast will actually be treated using ground methods.

We understand that people might have concerns about toxins and we take very seriously our role in professionally managing the risks. All our work in this area is subject to strict regulatory control.

We are keen to work with communities to improve understanding of what we do and why we do it. Providing more information is one of the things the survey told us we could do better and these articles, open days and interaction through other forums underline our commitment to do just that.

"Despite the significant progress we have made to date, the West Coast has the highest number of TB infected herds in the country"

It is important to note that our core function is not to eliminate possums, ferrets or other pests. However, an outbreak of tuberculosis could cause serious damage to our beef, dairy and venison markets, and even to human health.

History shows us that without effective vector control we will return to high numbers of TB-infected livestock with potentially serious knock-on effects on the regional and national economy. Long established cattle and deer farmers on the West Coast will not recall with any affection the high numbers of infected herds the region experienced around 15 years ago.

The West Coast remains an important focus of TBfree New Zealand's vector control work. Despite the significant progress we have made to date, the region has the highest number of TB-infected herds in the country.

William McCook
Chief Executive
TBfree New Zealand

Comprehensive planning for possum control programme

TB possum control operations can be highly visible to the public. What's not so apparent is the comprehensive planning that goes into a safe, effective programme.

Plans and priorities for TB possum control are worked out through a broad three-year cycle of operational planning. Decisions about where and how to carry out control are made after carefully considering:

- The need to prevent TB-infected possums spreading the disease into "clean" areas (for example, south of the glaciers or into the Maruia Valley)
- Meeting targets to reduce the number of TB-infected herds and responding to local increases in herd infection
- Specific findings of TB in feral populations, such as possums or ferrets
- Actual possum densities measured by trapping surveys.

Each year's plan consists of a mixture of ground control and aerial operations. Most work is done using ground-based methods. Aerial operations are considered where access on foot is hampered by the terrain, vegetation cover or the sheer size of the area needing to be controlled.

Aerial operations must use 1080 – it is the only toxin permitted for use this way – and have to meet stringent conditions.

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Regulations covering the use of 1080 are specified and monitored by the Environmental Risk Management Authority (ERMA), but regionally many further regulations are applied to meet local council requirements. On the West Coast, these include resource consents issued by West Coast Regional Council and the approval of the independent Regional Medical Officer of Health. Local consent from the Department of Conservation is required for operations on public conservation land and landowner agreements are required for work on private land.

These conditions are applied to protect public health and safety, avoid disruption to public use of recreational areas and minimise risks.

Buffer zones are used in sensitive areas and compliance with any conditions is regularly monitored by the consenting agencies.

Planning for possum control operations includes extensive communications.

Neighbouring landowners are advised of operations well in advance and following this are visited to ensure that correct operational boundaries are clear and that any risks, such as to livestock and domestic animals are minimised and appropriately managed. Groups who use the outdoors such as hunting and tramping clubs are contacted and operations are often timed to avoid disrupting activities. (A local example is the timing of control operations on the West Coast to avoid the Ahaura Hunting and Fishing competition held at Easter weekend). Local schools are visited and the community is kept informed through fliers, meetings, media information and signposting.

We want to hear from you

If you have any questions, please contact us by emailing your question(s) to: possum@tbfree.org.nz

If you haven't got access to email, please send your questions to: Animal Health Board, Questions, PO Box 535, Greymouth 7840.

TBfree NEW ZEALAND
THE PROGRAMME OF THE ANIMAL HEALTH BOARD
www.tbfree.org.nz

Research improves pest control methods

TBfree New Zealand invests around $2.5 million annually into applied research. The bulk of this funding goes into refining vector control procedures. Since the Animal Health Board's establishment in 1992 there have been significant changes in the way pest control is undertaken.

Ten years ago around 10kgs of cereal and/or carrot bait containing 1080 would typically have been used per hectare for an aerial operation. Better targeted operations, improved technology and bait quality have seen that amount reduced to 3-5 kilograms per hectare and sometimes to as low as 1-2 kilograms per hectare.

All aircraft are now equipped with global positioning systems (GPS) which enables the pilot to accurately apply toxin within the specified boundaries of a control area. Improved bait application mechanisms and GPS technology ensure optimal coverage and results for each operation.

In the early 1990s, ground control was only required to bring vector populations to "less than 40 percent pre-control levels" but at that time there was no reliable, consistent way of measuring this result in any case. With better monitoring and surveying procedures now in place, TBfree New Zealand can track when possum levels are on the rise again and step in as required.

Research has led to the development of a range of toxins, devices and control methods depending on the many different aspects, needs and issues of a particular operation. A system of pre-feeding with non-toxic bait before 1080 operations has been developed so possums recognise bait as a food source and are more inclined to feed on the real thing when it is dropped, resulting in a higher success rate for each operation. The size of the bait is now standardised, eliminating bait fragments that birds might eat. And baits are also dyed green to make them less attractive to birds.

Monitoring a possum trapline

TBfree New Zealand's research programme is investigating the possibilities of alternatives to 1080 amongst many other projects. Research is also being conducted to investigate biological control of possums.

It takes years of trials and experimentation before scientific "breakthroughs" can be proved effective, affordable and appropriate to use. TBfree New Zealand introduces changes to its activities when it is satisfied new approaches are safe and will be of true benefit to the TB control programme.

Read more about TBfree New Zealand's research programme at www.tbfree.org.nz

West Coast survey confirms desire for information

ONE in five West Coasters believe the use of 1080 is the main environmental problem facing the West Coast, according to the results of a public opinion survey carried out by an independent research company on behalf of TBfree New Zealand.

The use of 1080 headed a list of 15 environmental problems identified by West Coasters in the survey.

Carried out by the national research company UMR in November 2008, the survey sought the views of 840 West Coasters and landowners.

A summary of the results revealed:

- 84 percent believed having a thriving farming community on the West Coast was important.
- 79 percent believed protecting the West Coast environment was important.
- 19 percent thought the use of 1080 was the main environmental problem facing the West Coast.
- 56 percent knew "quite a lot" about the programme for controlling possums on the West Coast.
- 63 percent said the main benefit of controlling possums was to control bovine TB.
- 54 percent said control was to help protect native bush and forest.
- 21 percent said it was to help protect native birds.
- 68 percent said the unspecified general use of 1080 was the most widely used method for controlling possums on the West Coast.
- 19 percent said aerial 1080 drops were the most widely used method for controlling possums.
- 54 percent of respondents said they were not comfortable with the use of 1080 for controlling the West Coast's possum population.
- 46 percent thought 1080 was a very effective way of reducing the number of possums on the West Coast.
- 44 percent thought 1080 was more dangerous to the environment than possums.
- 59 percent believed 1080 got into the water and stayed there.
- 51 percent said they didn't really like the use of 1080, but accepted that it needed to be one of a range of methods used to control possums on the West Coast.
- 40 percent said they thought there was no place for the use of 1080 on the West Coast.
- 53 percent thought there wasn't enough reliable information on the use of 1080 on the West Coast.

Is the TB control programme making an impact?

NEW ZEALAND has had a compulsory bovine TB control programme for dairy and beef cattle since 1970 and for farmed deer since 1990.

In the mid-1990s, New Zealand had more than 1,600 cattle and deer herds infected with bovine TB. That figure is now around 130 and TBfree New Zealand is well on the way to achieving its goal of cutting that figure in half again by 2013.

"A 90 percent cut in funding between 1979 and 1989 saw infected herd numbers increase from 552 to 1694 over a 14-year period"

TB infected possums pose a risk to herds over approximately 37 percent of New Zealand's land area. History has taught us that a relaxation in control will lead to a dramatic resurgence of TB, first in possums and other wild animals and soon after in cattle and deer herds.

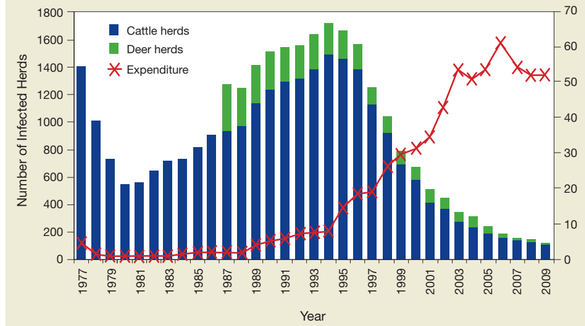
This is what happened between 1979 and 1989 when funding for possum control was reduced by approximately 90 percent. A significant increase in the national infection level followed, rising from 2.3 percent in 1979/1980 to 3.9 in 1994/1995. This corresponds to an increase of 552 infected herds in 1980 to 1694 herds in 1994, an increase of 1142 herds over the 14-year period.

After 1994/95 increases in funding were secured which led to infected herd levels dropping from 3.9 percent to the current 0.34 percent. This translates to the number of infected herds dropping from 1694 to the current 130.

That begs the obvious question: can we stop controlling possums and other pests after 2013? Unfortunately, the answer is no. Control programmes will still need to continue well after that date, simply because possums will still carry the disease.

An increase in the number of infected herds would generate production losses and could expose our vitally important beef, dairy and venison exports to significant risk in competitive, global markets. Furthermore, $1.26 billion dollars already spent on bovine TB control since 1994 would, in effect, have been wasted.

Graph shows relationship between vector control funding and number of infected herds



Scientific studies confirm dilution in water

IN a 2007 paper prepared for TBfree New Zealand, leading scientists Dr Charles Easton of CE Research Associates, Dr Laurie Twigg of Western Australia's Department of Agriculture and Food and Dr Wayne Temple, director of Otago University School of Medicine's National Poisons Centre reviewed the available scientific data on the likelihood of 1080 baiting operations causing contamination of water.

The scientists said there were two ways in which 1080 was reduced to undetectable and harmless amounts – by dilution and by biodegradation.

The scientists concluded that rapid dilution of 1080 was more important than biodegradation. This means even in cold conditions where biodegradation is slow, simple dilution of 1080 to harmless levels is very rapid. Hence, potential public risk from exposure to 1080 in water is very low or non-existent.

In summary, 1080 in the amounts and concentrations used in aerially sown baits does not cause harmful contamination of water. Water monitoring since 1990 has shown that significant water contamination is unlikely when safety procedures and directions for use are adhered to.

Cold weather conditions will not significantly influence the risk of human exposure to 1080 via drinking water as dilution of 1080 residues in waterways will still occur, and is considerable.

The Ministry of Health has set the provisional maximum acceptable value (PMAV) for 1080 in drinking water at 3.5 parts per billion (ppb). PMAV is the level that is considered not to cause significant risk over a lifetime of consumption.

As a further precaution, the Ministry recommends water should not be used for human consumption until tests show 1080 concentration is less than 2.0 ppb.

Landcare Research reviewed the results of 2098 water samples taken after aerial operations over an 18-year period from 1990 to 2008. Key findings included:

- 96 percent of the samples showed no traces of 1080 at all.
- Of the 4 percent of positive samples, all but seven showed less than 1.0 ppb of 1080.
- The seven samples which exceeded 1.0 ppb were mostly taken from small water bodies within baited areas very soon after bait was dropped.
- Any residues which do occur are very short-lived.
- No drinking water supplies tested have ever exceeded or even been close to the Ministry of Health's recommended maximum of 2.0 ppb.

The samples taken over the 18 year period confirm rapid dilution of 1080 in water to negligible or even non-traceable levels.

Controlling the disease source

THE fight against bovine TB operates on two fronts. One is disease control in cattle and deer herds, which we covered in our previous feature. The other is vector control.

A vector is something that carries a particular disease or parasite from one animal or plant to another. In New Zealand, possums – and to a lesser extent ferrets – are the main vectors of bovine TB. It's estimated that these pests are together responsible for some 80 percent of new infections in dairy, beef and deer herds. The rest is caused by movement of infected cattle or deer from herd to herd.

"Controlling TB-infected wildlife is the key to eradicating bovine TB from New Zealand"

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Vector control operations aim to reduce the density of possum populations to numbers that are low enough to stave off the spread of TB and, ultimately, see the disease die out within those populations.

The main form of vector control used around the country and on the West Coast is ground control. For the 2009/2010 year 313,854 ha on the West Coast will be controlled using ground methods.

Using either traps or toxins, ground control is useful for more accessible terrain, for follow-up control after an aerial operation and for areas where vector numbers are low. Operations are usually carried out on a regular one, two or three-year cycle, depending on possum numbers in the area.

Ground based operations need to be done more frequently than aerial operations because, unlike aerial operations, full coverage of an area can never be guaranteed. There will always be steep, inaccessible areas that contractors are unable to reach by foot and it doesn't take long for possums living in these havens to breed and start spreading again.

Aerial control is used in selected areas where one of a range of factors might prevent or inhibit the ability to control the area effectively by ground methods. Aerial control is extremely efficient and this can be critical in some situations.

It usually takes three aerial operations over the same area to reduce and keep possum numbers at the low levels required to get rid of the disease. There can be up to five-yearly intervals between each operation.

In areas with high possum numbers it is often more efficient to use toxins to achieve the initial knockdown. Trapping is effective only once numbers have been reduced, because it is very labour intensive.

Despite the rugged nature of the West Coast terrain, aerial operations are only used on about 25 percent of the total control area. Aerial control this year is planned for around 120,000 ha - around five percent of the Coast's total land area of 2.3 million ha.

Ground control is the most common form of vector control

Fast facts

- TB infected wildlife are responsible for some 80 percent of new infections in dairy, beef and deer herds
- Ground control is the main method used for vector control
- On the West Coast, aerial operations only cover about 25 percent of the total control area
- Aerial control this year is planned for around 120,000 ha – around five percent of the West Coast's total land area of 2.3 million ha
- Ground control is planned for around 75 percent of the total control area

What's coming up?

A representative selection of questions sent in by the public will be answered in the fourth and final part of this series.

Correction

The key used in the graph in our previous feature showed infected deer herd numbers being greater than cattle. This should have been the other way round.

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