Interview with Paul Livingstone

Dr Paul Livingstone is the TB Eradication and Research Manager for the TBfree New Zealand programme. He has vast experience and expertise in all TB-related fields. In 2011, Paul was awarded the Queen's Service Order for services to veterinary science, particularly for work on bovine TB.

Much of Paul's knowledge of bovine TB was gained during his time as a young veterinarian on the West Coast. He spent his early days sorting through the innards and carcasses of trailer loads of dead possums, as well as numerous TB-infected cattle and deer.

Dr Paul Livingstone QSO

How much of a risk is bovine TB to New Zealand's agriculture industry?

Provided the current programme of possum control and testing is maintained, there is no risk to our primary export products or to the development of a consumer resistance. Put simply, at present and for the foreseeable future, bovine TB does not pose a market risk to New Zealand's primary products.

What the TBfree New Zealand programme does do is provide protection to the value and quality reputation of primary products from New Zealand's beef, dairy and deer industries. Thus the control programme strives to enhance market reputation for our primary products.

Why is New Zealand known as a world leader in the control and management of bovine TB?

It has grown up around our success in controlling bovine TB in the face of a very extensive wildlife reservoir (i.e. infected wildlife vectors, especially possums) of infection for domestic cattle and deer. No other country with a TB wildlife problem has had that level of success in eradicating TB, thus we stand out.

This success has also been aided by the large number of scientific published papers dealing with aspects of TB wild animals and linking this to the success in controlling TB; presentations at numerous international conferences; and finally the TBfree programme has been increasingly promoted both within NZ and externally by our communications team.

What are the factors that give New Zealand an edge in terms of leading bovine TB work?

There are a number of factors and to a large extent they are interdependent.

The obvious factor is that our main TB vector, the Australian brush-tailed possum, is a non-native mammal that negatively impacts on New Zealand's conservation values. This enabled the TBfree New Zealand programme to kill possums on a broad-scale with little public opposition to that fact, though the methods used have caused some issues. The establishment of the TBfree New Zealand programme, with funding and buy-in to the TB control programme by both Industry and Government provided the funding horsepower without which we could not have made the progress we have.

Just as important was the Board setting high objectives for the technical team to design, cost, and then following stakeholder approval, implement. In that regard the knowledge of staff to identify control options and forecast some 15 – 20 years into the future and cost them has been a strong point for strategy development. Because the Board had a single focus, it ensured that we met or exceeded the milestones and therefore our objectives.

The ability to develop options was dependent upon having a forward-looking research direction that has provided information to support strategy development, prior to setting the objectives. Further, research is honed to best meet practical implementation which enables us to maximise our effectiveness and efficiency.

In that regard, the TBfree New Zealand programme is fully in-control of our research destiny, which is quite different to what happens in other countries where there is either no or limited relationship between what is researched in relation to programme needs or objectives.

Finally, due to the knowledge we have acquired from research findings and operational observations, the TBfree New Zealand programme staff are able to specify the outcomes we need for disease and vector control programmes which provide the opportunity to contract this work out. Contracting has assisted the Board to remain cost competitive.

How does the control and management of TB in New Zealand differ from in other countries?

The main factor is that the TBfree New Zealand programme is an incorporated society which has meant that the stakeholders have bought into the strategy and its funding. As far as I am aware, there are no other national disease control programmes of the size and difficulty as the New Zealand TB control programme that are managed by an NGO.

In all other countries that I am aware of, TB control is a managed by a central or state government department. As a consequence, funding is at the whim of the current government in power and strategies can be overturned through an election. Very good and recent examples are:

The change in the Welsh government in 2011 that saw a policy of badger culling under a Labour/Welsh National coalition changed to badger vaccination under a Labour-led government which has then implemented the policy without also taking the opportunity to evaluate its effectiveness.

Similarly, in England, the Labour-led government had refused to go down the badger cull path and had established six badger vaccination trial zones. When the Conservatives were elected, they stopped all but one of the vaccination trial zones and changed to a cull policy. Some three years after being elected, culling still has not started. Thus if there is a change in the elected government at the next election, then Labour is likely to stop the culling and go back to vaccination. If that happened, this would mean that over the previous 10 years there will have been no real impact on controlling TB in the badger population.

In Michigan, where the TB vector for cattle is white tailed deer, there are two government departments involved – Agriculture and Natural Resources. TB in cattle is an agriculture problem managed by the Department of Agriculture. However, controlling white-tailed deer is the responsibility of the Department of Natural Resources. Natural Resources receive their funding from hunters of white tailed deer, thus they are constrained in their ability to control the deer. Thus the vector remains largely uncontrolled. Regardless of the country, policy is driven by the political power, not by a coherent long term agreed strategy. Prior to the formation of the TBfree New Zealand programme, NZ was exactly the same.

The TBfree New Zealand programme is funded by industry and government, with an agreed five-year funding stream. Thus funding cannot be suddenly stopped as it would if we were part of a government department.

I'm not aware of any other country where farmers have such a say in the design of the programme. In most instances they don't contribute to the cost of the programme, it is tax-payer funded. When NZ's TB control programme was solely government funded, politicians turned control programme funding on and off to meet budgetary needs. In 1978, the government of the day stopped funding for possum control, which probably led to a significant expansion of infection rates in the endemic area. Governments also made decisions on compensation and testing policy. In NZ this happened in 1978 and farmers reacted to this by stopping testing. Thus the programme ground to a halt.

The TBfree New Zealand programme has developed three long-term TB control strategies, each with a costed implementation plan. No other countries have done this, largely because government departments are constrained by the term of their elected government and thus unable to commit to long term funding to meet a desired objective.

Once the Ministry for Primary Industries approves our strategy, national operational plan and any changes to diagnostic testing, there is no government department or external government dictating what we have to do, which can make our programme far more efficient than countries constrained by national and international political decisions.

For example, in England, they may want to change from testing cattle in the mid-neck region to the caudal fold where we test. However, the European Union (EU) makes the rules on where cattle are to be tested. The EU has determined that cattle are to be tested in the mid neck region. To get the EU to make a change to allow caudal fold testing would take a minimum period of three years and may never get approved because of block voting by some countries who are satisfied with neck testing. Thus we are relatively unconstrained by bureaucratic sets of rules. This means we are able to change relatively easily to new improved control measures evaluated by science.

We have been in the vanguard of any new science that may assist us to become more cost-effective and farmer responsive. Thus for example, we investigated and then implemented the Bovigam test as both a serial and parallel test in 1997 and 1999 respectively. England implemented the parallel Bovigam test in about 2008. Thus we had an additional 8 years benefit from the use of this test. This exemplifies why we are a world leader, which is also related to being an NGO and not having bureaucratic restraints imposed upon us.

What kind of skills and expertise are we able to share with other countries?

We have expertise in designing TB control programmes for cattle from small local herd type programmes to regional or country wide programmes and have the experience to take account of the particular political influences and rules in a country. This means we have the ability to identify the goals and constraints and develop a programme that will meet these.

We can design programmes for controlling TB in wild animal populations that also meet with political or other constraints of the particular country.

Our other skills lie in our ability to talk with farmers and get their buy-in to the optimum programme for them.

We have knowledgeable and capable internationally recognised scientists that are able to undertake research into defined diagnostic, ecological, epidemiological or modelling areas. Unfortunately, a number are approaching retirement and in some of these expertise areas we don't have younger scientists available to take over.