Protecting our waters from invasive weeds: p4

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Cover: The picturesque Lake Tutira in Hawke’s Bay is one of four lakes in the area to be infested with the invasive aquatic weed, Hydrilla verticillata.
( Photo: Warren Bayliss/PhotoNewZealand.com) Feature p4.
Biosecurity risk must be managed on and offshore

By Hon. Jim Sutton,
Minister for Biosecurity

New Zealand is by nature an idealistic nation. Collectively, we work together to make our country and the world a better place.

Despite being pragmatic capitalists, New Zealand is prone to altruism. In biosecurity, an example of this is the MAF Biosecurity position funded through our overseas aid budget. This funding enables an official to be provided to work through the approvals process for importing fruit and vegetables from Pacific Island nations.

This trade is not large, by our standards, but it is extremely important for Pacific nations, who have had trade prevented because of quarantine issues.

Already, we have had new import health standards approved for the importation of Tahitian limes from Vanuatu.

If Pacific Island nations are to integrate properly into the global trading system, they need help to deal with sanitary and phytosanitary issues. We want to ensure our regional neighbours can stand on their own feet, alongside other nations, so we are working to help them gain access to our markets - while still protecting our environment.

Ideally, plant and animal health issues would be able to be shut off outside our country's borders, without us having to worry about them. However, we don't live in an ideal world.

In the real world, pest animals and insects can fly, crawl, and swim to our shores, no matter how many inspections we put in their way. The recent controversy over findings of Asian gypsy moth egg masses is an important demonstration of this.

It has been reported that some foresters, environmentalists and politicians have been pushing to make all imported used cars inspected for potentially devastating pests such as the gypsy moth at foreign ports in order to prevent any incursions here.

This was prompted by some recent further finds in Nelson and Lyttelton of moth egg masses on vehicles imported from Japan.

Some checks are carried out offshore, but most are carried out once vehicles arrive here in New Zealand. And there are several good reasons for that.

For a start, no other country in the world takes biosecurity as seriously as we do. We're an isolated island nation that has a relatively pristine environment missing some of the most serious pests and diseases that other nations have. So, for example, an inspector in France might think they have successfully checked out a tractor being exported to New Zealand, but inspectors here may still be shocked at the amount of dirt and vegetation still concealed within it when it arrives at one of our ports.

Secondly, cars and other machinery inspected at foreign ports may become infested after inspection but before they leave port. We know of several cases where that has happened. It means checks will always need to be done here in New Zealand, upon arrival.

All this doesn't mean that there aren't improvements that can be made in the future.

I have visited facilities that use heat treatment to decontaminate sea containers from animal pests, if not yet from weed seeds. I have talked to inventors who have mechanisms for detecting insects and small animal pests, for example. These and other methods may well be added to our defences in the future.

Biosecurity is hard work. Our inspectors, waterfront workers, and citizens who live near our ports are all key participants in maintaining our defences. I would like to thank them all for their efforts to date, and encourage them to maintain their efforts. Vigilance must be constant.

Jim Sutton.
Hydrilla (Hydrilla verticillata) well and truly deserves its reputation as one of the world’s worst freshwater weeds, and for the past 50 years it has been choking the waters of four Hawke’s Bay lakes.

Hydrilla is native to warmer areas of Asia, Africa and Australia. In New Zealand, hydrilla grows beneath the water’s surface and forms dense, mono-specific communities to depths of nine metres (although overseas it grows up to 15 m deep).

It can tolerate a wide range of freshwater environments and conditions (e.g., temperature, chemistry and turbidity) and can spread by stem fragmentation as well as seed. Tubers and turions (very compact dormant buds produced in a leaf’s axil) provide the potential for regrowth should the shoots of this plant be removed by some management action. Its control is challenging!

In New Zealand, hydrilla could impose costs on three fronts:

1. **Social:** It has the potential to limit enjoyment of recreational activities such as boating, fishing and swimming, as well as presenting a water safety hazard for swimmers.

2. **Economic:** It could reduce the cost efficiency of hydro-electricity generation. All slow-moving or still water bodies are at risk; of most concern are the central North Island lakes and the Waikato River. The latter is an important source of hydro-electric power generation, which already loses over $5m a year in lost generation and control costs through existing aquatic weeds.

3. **Environmental:** Hydrilla displaces native vegetation and alters the structure of freshwater ecosystems – it is likely to cause major loss of biological diversity. Hydrilla not only displaces all native freshwater species; it appears to out-compete all of New Zealand’s worst underwater weeds.

Perhaps the most striking thing about hydrilla in New Zealand is that, although first found as an introduced plant in 1953 (likely an aquarium liberation), its distribution is limited to four lakes in Hawke’s Bay: Tutira (147 ha), Waikapiro (11 ha), Opouahi (6 ha) and Eland (4 ha).

**Management context**

Other than its limited distribution, there are at least four further things biosecurity managers have going for them when it comes to managing hydrilla:

- These lakes are geographically isolated and can only be accessed from the winding Napier to Wairoa Road, or (in the case of Eland) through private property.
- We only have the dioecious male genotype in New Zealand, and provided our border controls continue to exclude its female counterpart, seed production is not possible. For now, the only way hydrilla can spread to new water bodies is via people – either deliberately or through the contamination of boats, trailers, nets or other equipment. There are millions of shoots produced by this plant in lakes like Tutira, and only one has to be transferred to a new water body to start a new infestation.
- The sale and distribution of this and other problem-causing underwater weeds has been prohibited since 1983, so there is no opportunity for legal spread of this plant through the aquarium trade. Furthermore, the plant cannot be imported legally.
- There is a biological control agent already active in New Zealand in the graceful form of the Australian black swan, which grazes the top metre of the plant. This has helped to reduce the risk of spread. However, the lack of dense hydrilla mats on the lake surface also means the problem remains out of sight. The Aussie swan does have underarm implications; its browsing results in lakeshore stranding of the plant, making it readily accessible to lake visitors. If hydrilla spreads to other, less isolated lakes, then swans may help spread the weed.

While hydrilla has spread very little in the past 50 years, its risk profile is changing. The likelihood of spread is increasing in line with the growing regional population and property subdivision around lakes and rivers. Recreational use of the four hydrilla-infested lakes, Tutira in particular, is increasing.

**Agency responsibilities**

Identification of the agency/agencies responsible for managing hydrilla has historically been confused. The former Ministry of Agriculture and Fisheries, Hawke’s Bay Regional Council, Department of Conservation and Hawke’s Bay Fish and Game Council...
have all been involved at some stage.

Hydrilla is currently included as a surveillance pest within the regional pest management strategies of seven regional councils or unitary authorities other than Hawke’s Bay Regional Council. It is also an unwanted organism under the National Pest Plant Accord. Local staff from the Department of Conservation’s Hawke’s Bay Area Office have recently taken on responsibility for coordinating hydrilla management.

Some containment measures, aimed at preventing the spread of stem fragments to other fresh water bodies, have been or are in place. These include prohibitions on motorised boats and commercial eeling (Lakes Tutira, Waikapiro and Opouahi) and limited suppression around access points on some lakes. Public awareness of the problem is important and signage around the lakes has recently been updated.

Eradication investigated

NIWA scientists have been working since the 1980s to find a tool to eradicate hydrilla. This work has focused around biological controls and chemical control using herbicides.

A trial using triploid grass carp in Lake Eland demonstrated this method can effectively suppress hydrilla to such a low level that risk of spread from the site would be negligible. This method is unlikely to eradicate hydrilla alone, due to continued regrowth from long-lived tubers, which may maintain small pockets of hydrilla in areas where there are obstructions such as fallen tree branches.

Extensive trials have demonstrated that herbicides currently registered for aquatic weed control in New Zealand do not kill hydrilla. More recently NIWA has trialled another chemical, endothall, which gave excellent targeted control of hydrilla in Lake Waikapiro. The product must now be registered through ERMA before further trials can continue. NIWA has organised a consortium of agencies (mostly regional councils) to fund registration costs.

Under current HSNO legislation, an experimental use permit allowed for field trials to be carried out under very strictly monitored conditions, but there is no provision for this under HSNO.

NIWA is also looking at development of new biological control agents such as fungi to kill hydrilla and other water weeds and applied in a similar way to a herbicide.

National pest management focus required?

The current strategy of limited suppression, signage and a ban on power boats and commercial eeling has worked to date but risks remain.

Significant removal of biomass, and potentially long-term eradication – using a herbicide and/or grass carp and/or some new tool (requiring research and development) – could reduce this risk significantly.

There are some tricky issues to deal with. Some management tools (apart from signage) are controversial. Land tenure and uses of water bodies are mixed. There are differing views on the rules, priorities and best ways to manage the problem.

The programme to date has lacked a coordinated, adequately-funded national management focus. This begs two questions:

1. Is a national focus warranted? There are many views on this, and some information has been gathered that will usefully feed into a detailed risk assessment. The risks presented by hydrilla will provide a useful test for the new biosecurity system’s risk management framework, currently under development.

2. If a national focus is warranted, should the urgent and effective approach to managing pests like varroa, painted apple moth and southern saltmarsh mosquito be applied to hydrilla – one of the world’s worst freshwater weeds?

Andrew Harrison (MAF Strategic Unit – seconded from Department of Conservation), Kay Griffiths (Department of Conservation) and Paul Champion (NIWA)

Three of these pests – painted apple moth, gum leaf skeletoniser and southern saltmarsh mosquito – have been the subject of intensive, nationally coordinated eradication programmes. Should hydrilla, one of the world’s worst water weeds, get the same treatment?
MAF has a comprehensive animal disease surveillance programme(1). Following the 2002 Prime review of New Zealand’s biosecurity systems(2)(3) (Table 1), MAF has initiated a technical review of surveillance for diseases affecting domesticated animals and farmed freshwater fish. The intention is to prioritise diseases of interest and to work out how to deliver surveillance that is technically sound and quantifiable using a variety of data of variable quality.

The review is ambitious because it is charting new territory at the edge of understanding. Stakeholder consultation and involvement of technical experts will be important throughout. The initial process of identifying and prioritising diseases of interest has already begun. This will be followed by about 6 months of technical design for selected diseases. Final recommendations will be delivered by December 2005. The decision process (summarised in Figure 1) is based on that recommended in the Prime review. The steps are as follows:

**Decide surveillance outcomes and objectives**
Surveillance programmes should have clearly defined objectives and performance indicators; otherwise they become poorly focused and inconsistent. Detecting exotic diseases for eradication and international trade purposes is an obvious priority but other needs should be addressed. Objectives for domesticated animal disease surveillance include:

- detect and describe new and emerging production-limiting livestock diseases.
- list diseases of potential interest

**List diseases of potential interest**
A list of 375 diseases of potential concern has been compiled following stakeholder consultation. These have been categorised as:

- high priority MAF/stakeholder concern
- current MAF programme
- stakeholder concern
- no specified concern.

The Prime review recommended that surveillance should focus on ‘high-impact exotic diseases of national importance’. Thirty four exotic diseases (Table 2) had earlier been identified by MAF and stakeholders as being of sufficient concern to warrant advanced drafting of response plans and have been classified in this review as ‘high priority MAF/stakeholder concern’.

**Assess likely pathways and impacts, and prioritise diseases**

Surveillance models fit well within the OIE risk analysis framework(4)(5). The underlying principle is that risk is a function of likelihood and consequence. Accordingly, the exotic diseases listed in Table 2 will be short-listed by assessing likelihood of arrival and likely impact in New Zealand should a disease become established.

Pathway analysis has been done and approved by stakeholders. The process was uncomplicated because the required information came mainly from MAF risk analyses of uniformly high standard.

Impact analysis is more difficult because the process needs to be uniform, transparent and logical yet not cumbersome. As part of the Biosecurity Strategy, MAF is developing an integrated risk management framework for prioritising surveillance and other biosecurity activities across sectors. Our impact analysis would ideally fit within the proposed generic framework but its needs may be too contextual and may have to sit beneath the integrating framework. Once drafted, impact assessments will be circulated for stakeholder comment and eventual ratification. Diseases can then be ranked and prioritised according to risk.

**Design technically sound surveillance programmes**
Surveillance information varying in type and quality will need to be evaluated so as to arrive at an overall measure of performance. This is new territory. It departs from traditional random survey design and is better encapsulated as ‘targeted surveillance’. Veterinary epidemiologists have been working on ways to assess disparate and usually historical surveillance data objectively.
New Zealand experts will be able to build on suggested methodologies. Evaluate costs and benefits then rank according to an agreed economic decision support system. Surveillance should be cost-effective. The cost of technically sound surveillance can be estimated once a programme has been designed. This cost can then be compared with estimated costs of failure in having to eradicate, control or allow an undetected disease to establish.

Surveillance options will be assessed using an economic decision support framework based on a model suggested in the Prime report. The primary need will be to balance technical, political and economic considerations to meet stakeholder needs. Assessing environmental and cultural impact will be particularly difficult.

Implement programmes
Funding becomes an issue once surveillance programmes are ready to be implemented. The New Zealand Biosecurity Strategy has recommended that the Crown retains responsibility for surveillance but that a ‘cascading decision rule’ applies to fund services for which the Government is responsible. Practicalities have yet to be explored.

Research projects
Design and subsequent implementation of technically sound surveillance will identify gaps in knowledge. These will need to be addressed by strategically planned research. MAF’s Biosecurity Authority has appointed a person to manage an animal disease science strategy.

Monitor and review
Information gained from surveillance activities and research projects will be monitored, analysed and reported at least annually. Technical programmes will then be re-evaluated in light of accumulated knowledge.

References

Table 1: Prime review - key recommendations for animal disease surveillance

<table>
<thead>
<tr>
<th>Recommendation</th>
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<tbody>
<tr>
<td>Achieve ‘best practice’ technical standards</td>
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<tr>
<td>Apply consistent economic analysis to surveillance activities</td>
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<tr>
<td>Apply output-focused key performance indicators</td>
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<tr>
<td>Be formally accountable to funding bodies</td>
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<tr>
<td>Communicate effectively</td>
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<tr>
<td>Decide governance and strategy and align stakeholders accordingly</td>
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<tr>
<td>Decide how to incorporate core and discretionary surveillance</td>
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<tr>
<td>Define core (vote biosecurity) and discretionary surveillance activities</td>
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<tr>
<td>Define the purpose of surveillance</td>
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<tr>
<td>Develop an integrated data management strategy</td>
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<td>Encapsulate crown-funded surveillance activities within programmes able to be audited</td>
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<tr>
<td>Fund surveillance equitably</td>
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<tr>
<td>Government responsibility - establish baseline disease information</td>
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<tr>
<td>Government responsibility - surveillance for new organisms</td>
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<tr>
<td>Prioritise diseases with regard to risk, economic and political considerations</td>
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<tr>
<td>Prioritise surveillance within a risk management framework</td>
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<tr>
<td>Resolve legislative deficiencies</td>
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<td>Sector responsibility - support market access</td>
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<tr>
<td>Core-government responsibility - surveillance for high-impact exotic diseases of national importance</td>
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<td>Shared responsibility - targeted surveillance</td>
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Table 2: High-Impact exotic diseases selected for development of technical plans - core MAF surveillance responsibility

<table>
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<tr>
<th>Disease</th>
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<tr>
<td>African horse sickness virus</td>
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<td>Maedi-visna virus</td>
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<tr>
<td>African swine fever virus</td>
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<tr>
<td>Melissococcus plutonius</td>
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<tr>
<td>Avian paramyxovirus 1 (exotic strains)</td>
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<tr>
<td>Mycoplasma agalactiae</td>
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<tr>
<td>Bacillus anthracis</td>
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<tr>
<td>Mycoplasma mycoides subsp mycoides SC</td>
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<tr>
<td>Bluetongue virus</td>
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<tr>
<td>Peste des petits ruminants virus</td>
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<tr>
<td>Bovine spongiform encephalopathy agents</td>
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<tr>
<td>Porcine reproductive and respiratory syndrome virus</td>
</tr>
<tr>
<td>Brucella abortus</td>
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<tr>
<td>Pseudomonas mallei</td>
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<tr>
<td>Brucella melitensis</td>
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<tr>
<td>Rabies virus</td>
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<tr>
<td>Brucella suis</td>
</tr>
<tr>
<td>Rift Valley fever virus</td>
</tr>
<tr>
<td>Classical swine fever</td>
</tr>
<tr>
<td>Rinderpest virus</td>
</tr>
<tr>
<td>Equine encephalitides</td>
</tr>
<tr>
<td>Scrapie agent</td>
</tr>
<tr>
<td>Foot and mouth disease virus</td>
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<tr>
<td>Sheep pox and goat pox virus</td>
</tr>
<tr>
<td>Francisella tularensis</td>
</tr>
<tr>
<td>Swine vesicular disease virus</td>
</tr>
<tr>
<td>Infectious bursal disease (birnavirus, exotic strains)</td>
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<tr>
<td>Transmissible gastroenteritis virus</td>
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<tr>
<td>Influenzavirus type A (exotic avian strains)</td>
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<tr>
<td>Vesicular exanthema virus</td>
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<tr>
<td>Influenzavirus type A (exotic equine strains)</td>
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<tr>
<td>Vesicular stomatitis virus</td>
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<tr>
<td>Lumpy skin disease virus</td>
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1 No diseases of fish or shellfish listed. Should include diseases of more recent concern such as West Nile Virus and chronic wasting disease.

Biosecurity Issue 51 • 1 May 2004
As 2004 began, the world was faced with a potentially devastating and life threatening disease epidemic – avian influenza. Media headlines brought news of infected Asian countries and human deaths. Millions of chickens were immediately culled, and the poultry market plummeted.

As part of the United Nations Food and Agriculture Organisation’s (FAO) international response to combat the disease, MAF Programme Coordinator Exotic Disease Response, Dorothy Geale, was invited to Cambodia as an international veterinary field consultant. Dorothy has just returned from the front lines where she has observed the epidemic first hand.

“Avian influenza is widespread in birds. Some strains have an exceptionally high mortality rate – 80-100 percent in chickens, for example. Cambodia appears to have been spared the devastation experienced by neighbouring countries Vietnam and Thailand. These are major producers of poultry, with populations of well over 200 million each, whereas Cambodia harbours less than 20 million birds. Both Vietnam and Thailand slaughtered more birds than are raised in Cambodia alone,” says Dorothy.

“At the moment avian influenza is more of an animal health issue than a human one. There have been no confirmed cases of human infection in Cambodia. The risk of transmission to humans is low, but if it does occur the consequences are serious. To date almost half the human cases have been fatal.”

The value of poultry in Cambodia is significant to both domestic farmers and commercial enterprises. Domestic farmers sell about 10-15 of their own chickens each year, generating $US15-20 – enough to buy 6-8 weeks’ food for a household of five. For these farmers, the ‘bird flu’ is devastating.

Commercial poultry farming in Cambodia is similar to that in New Zealand. “Poultry do very well there; they have identical genetics and can produce chickens for the market in the same time as New Zealand producers,” says Dorothy.

The avian influenza panic has had a significant impact in Cambodia. The public responded to the news of the disease by completely avoiding consumption of poultry. It was estimated over 80 percent of chicken stalls in Phnom Penh and over 60 percent in major provincial markets stopped selling chicken altogether. The price of eggs in Siem Reap, a provincial capital, was reported to have halved because of the outbreak. Similarly, the price of chicken meat dropped by almost half in places where a market could be found at all. Some restaurants in international tourist areas stopped serving poultry. Even Qantas airlines stopped serving chicken on its Asian flights.

Cambodia was officially noted to be infected with avian influenza in late January. Dorothy’s objectives included:

- conducting a rapid assessment of the disease situation of poultry in Cambodia
- assessing the capacity of Cambodia’s national veterinary services to respond to outbreaks
- evaluating the coordination and working relationship between the Cambodian Ministry of Agriculture and Ministry of Health and World Health Organisation in response to the poultry disease situation
- gaining an understanding of the poultry industry in Cambodia to make recommendations regarding ongoing avian influenza control.

Dorothy travelled from her base in Phnom Penh to confirmed avian influenza-infected sites, where she gathered first hand information on the nature of operations, disinfection and outbreak response procedures, and the general health of poultry.

The trip was concluded with Dorothy successfully gathering and mapping all the avian influenza case information from Cambodia and compiling it into one source. She also collected representative diagnostic samples and
Post-weaning multisystemic wasting disease (PMWS) was confirmed in New Zealand in September-October 2003. The disease causes wasting and mortalities in 6-12 week old weaner pigs. Although MAF considers that eradicating the disease is not technically feasible at this stage, the Ministry is supporting the pig industry’s plans to attempt eradication.

The cause of PMWS has not been confirmed but there are two main hypotheses:

- PMWS might be caused by porcine circovirus type 2 (PCV2), together with other non-infectious co-factors. As PCV2 is widespread in New Zealand pigs, under this hypothesis eradication would not be feasible.
- Alternatively, PMWS may be caused by an unidentified infectious agent (“Agent X”) or a virulent strain of PCV2, recently introduced into New Zealand. Under this scenario, eradication might be possible.

MAF’s view is that with the current state of knowledge and existing test technologies, eradication is not technically feasible under either hypothesis.

There is a contrary view that eradication of PMWS may be possible. This is based on a hypothetical explanation for the introduction and dissemination of Agent X in the network of known infected farms. The hypothesis involves:

- importation of Agent X in uncooked pig meat after controls over waste-feeding lapsed, and before new regulations requiring cooking of imported meat were introduced;
- feeding of this imported pig meat in an uncooked form, infecting pigs on one or more farms;
- onward spread of disease within a highly interconnected network of farms.

Based on this scenario, the Pork Industry Board (PIB) wishes to attempt eradication and is currently drafting a pest management strategy (PMS) under the Biosecurity Act. MAF is assisting by:

- maintaining restrictions over movement of pigs and pig products from affected farms (as at 8 April, 23 properties were affected in the Auckland, Waikato and Taranaki regions) and over southward movement of pigs and reproductive material across Cook Strait;
- investigating the health status of other piggeries with links to the affected farms; and
- undertaking a survey of South Island piggeries and planning a wider survey of North Island piggeries.

Sally Lees has recently joined MAF as Executive Coordinator for the Director of Animal Biosecurity, Derek Belton. Sally will be working part-time, five mornings a week.

Sally’s background is in finance and administration in both the public and private sectors. She worked for the Bank of New Zealand for many years before taking some time out to have two children. Sally’s most recent position was with Fertility Associates Wellington as an assistant accountant. Outside work, Sally is busy running a part-time home-based business while raising her children and coaching her daughter’s netball team. Sally has always had an interest in science and is pleased to be part of Animal Biosecurity and the wider MAF organisation.
Pitch canker in quarantine - a biosecurity success story

In Biosecurity 49:5 MAF reported on the suspected interception of the pitch canker-causing fungus, *Fusarium circinatum*, on Douglas fir (*Pseudotsuga menziesii*) scion imported from the United States. Tests completed in New Zealand and California have now confirmed that the intercepted fungus is *Fusarium circinatum*, and as a result MAF has put in place further controls on the import of pitch canker host material.

The details behind this recent interception tell a biosecurity success story. A review of the import requirements of *Fusarium circinatum* host material in 1999 produced two new import health standards: one for seeds of *Pinus* species and one for seeds of Douglas fir. The import health standard for *Pinus* and Douglas fir nursery stock was not reviewed at that time but was suspended pending a review when resources became available. In 2002 a local importer requested that MAF review the import requirements for Douglas fir scion material to see if it was feasible to import a small number of clonal plants from the United States.

At the time of the request, MAF was reviewing the import requirements of host material of a different tree disease, sudden oak death. Caused by *Phytophthora ramorum*, the disease primarily affects oaks, rhododendrons and laurel. However it was also found to infect Douglas fir and redwoods, two trees of economic significance in New Zealand. A review of the import requirements of Douglas fir scion material in relation to pitch canker infection was included with the sudden oak death review and completed on 13 December 2003 (see web link below).

The aim of the review in relation to Douglas fir scion and pitch canker was to consider the likely risks associated with importing such material from areas considered to be free of the disease. The analyst considered and listed the likely biosecurity risks of importing host material and the measures included to manage the risks. They concluded that imports could be allowed subject to adequate treatment immediately before or on arrival in New Zealand and monitoring by MAF of the growing plants in quarantine.

The crucial part of the monitoring in quarantine was the separation of samples collected from the Douglas fir into two lots: one to be sent to MAF’s own diagnostic reference lab for the detection of disease causing microbes, and one to Forest Research Ltd specifically to testing for *Fusarium circinatum*.

It was in one of the second samples sent to Forest Research Ltd that scientists detected suspected *Fusarium circinatum*. Subsequent testing by these scientists, MAF’s own diagnostic scientists, and Professor Tom Gordon, a world leading researcher on pitch canker disease in California, confirmed the original diagnosis and added a new dimension to our understanding of the epidemiology of the pitch canker disease.

Of importance also was the role of the importing company and quarantine facility operator. Both co-operated fully with MAF at all stages of the quarantine of the scion material, played a significant role in managing the destruction of the plants and clean-up operation after the pitch canker fungus was detected, and facilitated the investigation into the source of the infection in California.

On confirmation of the diagnosis, MAF:
- re-classified all of the United States as potentially infested with pitch canker
- prohibited the import of all nursery stock material from *Pinus* species and Douglas fir
- placed new treatment requirements on imported Douglas fir wood.

For Report on the interception of *Fusarium circinatum* (pitch canker) on imported seedlings of Douglas fir (*Pseudotsuga menziesii*), 11 February 2004:

www.maf.govt.nz/biosecurity/imports/forests/emergency-measure.htm

For Proposal to further delineate pest free areas of pine pitch canker (*Fusarium circinatum* (syn. *Fusarium subglutinans* f.sp. *pinii*)) in California, USA, 13 December 2002:

www.maf.govt.nz/biosecurity/imports/forests/standards/propagatable-forest-produce/

Mike Ormsby,
National Adviser
Import Health Standards,
Forest Biosecurity
phone 04 498 9630,
mike.ormsby@maf.govt.nz
The noose is tightening around the painted apple moth. In 2002, MAF launched a comprehensive programme targeting the painted apple moth population which had taken hold in western Auckland.

The pest was considered to be a major threat to our urban treescapes, gardens, and our native and plantation forests. There was also a health risk with the painted apple moth at the larval stage, when the caterpillar is covered in hairs which can cause itching and wheals in some people.

**Single moth trapped**

In January 2002 we trapped 1784 moths as part of the monitoring programme. In January 2003 only 48 moths were caught. In January 2004 there was a single male moth find in Mount Eden but follow up surveys have not discovered any other moths in the area.

In February 2004 the Science and Technical Advisory Group recommended that MAF could begin reducing aerial treatments. As a result, the aerial phase of the operation has been systematically wound down over the last few months. While the Fokker Friendship was used in the early phase of the aerial treatments, the air tractor and a helicopter are now being used to finish off the programme.

**Last aerial operation**

The last aerial operation is scheduled, weather permitting, in the Ranui/Swanson area on 11 May 2004.

The mathematical model being used by the scientist advising MAF provides MAF with a high level of confidence that the battle against the moth is well on the way to being won. However, MAF is not taking any chances. If any remnant moth colonies are discovered then there could be targeted aerial treatment and ground operations carried out to ensure they are wiped out. The end of the aerial treatments does not mean that the eradication programme is over. The vegetation control zone will remain in place for two years. MAF is grateful that the public take this aspect of the programme seriously.

**MAF confident**

Ground treatments, host removal and the release of sterile males to overwhelm any remnant populations, will continue as they provide valuable backup to the aerial operation.

The third annual MAF/New Zealand Forest Owners’ Association (NZFOA) Forest Health and Biosecurity Workshop has recently concluded in Rotorua. This year’s workshop was attended by over 70 people representing the forest industry, research providers, universities, and local and central government.

The increasing attendance at these workshops suggests they are much more than a ‘talkfest’ – rather they are an effective forum where real issues are discussed, plans made and results achieved. This was confirmed by the positive progress report from the previous workshop’s action plan.

Some difficult issues were tackled, with good discussion in three main areas:

**Effective detection of pests and diseases**

The main issues here were whether or not current surveillance is able to effectively detect new pests and diseases, and the need for additional surveillance to provide feedback to forest managers on the state of their crop and to identify changes in forest health status over long periods.

**Pitch canker**

The current state of knowledge on the disease and whether or not an incursion of pitch canker could be successfully eradicated. (See more on pitch canker interception on page 10.)

**Strategy for forest health research**

The establishment of a new Forest Health Research Group was endorsed and a national research strategy discussed. As a result of the workshop NZFOA and MAF Forest Biosecurity now have a comprehensive joint action plan for the coming year with significant pieces of work including:

- establishing a commitment to a national forest health condition monitoring programme
- finalising a new surveillance programme for effective detection of new pests and diseases
- conducting a pitch canker incursion response simulation
- formally establishing the new Forest Health Research Group
- finalising the national forest health and biosecurity research strategy.

The next workshop will be held in February 2005.
While the import and export of wood packaging material has continued without too many difficulties since we last reported on this subject in Biosecurity 45:13, a number of changes have occurred or will be occurring that importers and exporters need to be aware of.

**Imported wood packaging material**

Untreated wood packaging material has long been considered by MAF to be a relatively high biosecurity risk. The current import health standard for wood packaging material differentiates between treated and untreated wood packaging material by requiring all untreated material to be inspected by MAF inspectors prior to clearance. With the recent implementation of the sea container import health standard, many of the border inspections once undertaken on the wharf are now being undertaken at facilities away from the wharf. Inspections by MAF officers of untreated wood packaging material at sea container clearance facilities will therefore attract further charges for time involved in travel and delays in unloading.

Importers are strongly encouraged to, wherever possible, use treated wood packaging material. Wood packaging material is considered treated if it is made from manufactured wood (e.g. ply wood, chip board etc), meets ISPM 15 requirements, or meets the treatment requirements listed in the import health standard for wood packaging material.

**Exported wood packaging material**

As countries or regions begin to phase in the international standard for wood packaging materials (ISPM 15), regular changes to the requirements are occurring. There is now a page on the MAF website providing up-to-date information on the latest country or regional requirements for wood packaging material. Exporters are encouraged to visit this page to keep up to date on international developments in wood packaging requirements.

**Biosecurity People**

**Border Management Group**

René Burger recently joined MAF Biosecurity Authority Border Management Group in Auckland, based at Ballantyne House as Executive Coordinator to Neil H Hyde, replacing Jeanette Dawson. She has more than 20 years’ experience as an executive secretary and personal assistant. Her last position was as personal assistant for a large manufacturing concern in South Africa for almost 11 years. René arrived in New Zealand on Christmas Eve 2002 with her family on vacation with a view to immigrating. It was love at first sight for all of the family and they decided to settle in Auckland.

**Border Management Group**

Tariro Mavengere recently joined the MAF Biosecurity Authority, Border Management Group and is based at Ballantyne House, Auckland, as part of a two-person container profiling team.

Tariro has a BSc in Agriculture (Crop Science) from the University of Zimbabwe and an MSc in Natural Resources Management from the Agricultural University of Norway. Her work experience includes working as an agricultural extension officer in the Ministry of Agriculture - Zimbabwe and as a technical adviser/agronomist in Zimbabwe for an international non-governmental organisation, the Netherlands Development Organisation. Both these roles involved working directly with farmers, agricultural research organisations and other agricultural service providers in order to improve the farming practices of small-scale farmers.

Tariro will be working as a container risk analyst in the Border Management Group. This will involve mapping strategies to prevent the introduction of exotic hitchhiker organisms into the country in, and on, shipping containers. It will also involve evaluating container inspection results to determine which containers pose a high risk of contamination and, therefore, require MAF inspection at the border.

<table>
<thead>
<tr>
<th>Mike Ormsby, National Adviser Import Health Standards, Forest Biosecurity, phone 04 498 9630, <a href="mailto:mike.ormsby@maf.govt.nz">mike.ormsby@maf.govt.nz</a></th>
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<td>Treatment requirements for exported wood packaging material:</td>
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<td>Treatment requirements for imported wood packaging material:</td>
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**Pacific produce biosecurity activities stepped up**

Following the creation of the position of National Adviser, Fresh Produce (Pacific Island Countries) within Plants Biosecurity, MAF is now well positioned to progress the development and review of import health standards (IHSs) for commodities from the Pacific.

Priority activities have been selected in consultation with the National Plant Protection Organisations of the exporting countries and the Pacific Island Trade and Investment Commission (PITIC).

Priority activities include:

- developing new IHSs for commodities that could be sourced from multiple countries (e.g. eggplant, papaya, banana)
- reviewing existing import requirements (e.g. cucumber, litchi and chillies)
- reviewing off-shore treatment measures for quarantine pests.

MAF will also be collaborating closely with the biosecurity programme within the Plant Protection Service of the Secretariat of the Pacific Community (SPC-PPS) on regional training activities and technical input into the development and review of New Zealand's import requirements.

During March, MAF staff attended the Regional Biosecurity, Plant Protection and Animal Health Meeting in Fiji organised by the SPC-PPS. This 5-day meeting was attended by representatives from 21 Pacific island countries and territories in addition to Australia and New Zealand, and observers from the United States, EU, Forum Secretariat and PITIC. It included updates from each country and SPC on activities in biosecurity, plant protection and animal health; regional developments in biosecurity and trade facilitation services; and invasive species (see article on the Pacific ant prevention plan, Biosecurity 49:9). This meeting provided an excellent opportunity for MAF to discuss current biosecurity issues at the regional level and specific market access issues with individual countries.

**Powdery mildew found on capsicums**

The powdery mildew *Leveillula taurica* has recently been found affecting a commercial capsicum crop in an Auckland glasshouse.

This fungus is known to have been present in New Zealand for at least 16 years. It was originally found on Gazania and Impatiens and on globe artichoke plants growing outdoors in the Auckland area and has persisted on these plants since it was first discovered in the 1980s. This fungus was also recently detected on *Phebalium* sp., another new host record, in domestic gardens in the Coromandel region. Its detection here on capsicums may indicate either:

- a recent change in the pathogenic capabilities of the fungus already present in New Zealand
- the arrival here of a new, specialised race or strain; or
- environmental conditions during this season have caused symptoms to be expressed to a significant level.

Overseas, *L. taurica* is widespread and commonly found in warmer, arid to semi-arid growing areas of Asia, Africa, the Mediterranean and North America. However, it can also have a significant impact on glasshouse tomato and capsicum industries in cooler areas. The mildew appears as a white, powdery growth on the underside of leaves. Light green to yellow lesions with necrotic centres may also become visible on the upper leaf surfaces. Heavy infections may eventually cause defoliation, which in turn affects yields.

This powdery mildew is known to infect at least 700 species of plants overseas, a large number of which occur in New Zealand. Many of these are evergreen or perennial species and *L. taurica* can persist on many of them throughout the year, ensuring its long-term survival. Several weedy species are known to be hosts of *L. taurica*.

Powdery mildews on glasshouse crops are often difficult to control. Treatment with fungicides, the removal of infected hosts in the vicinity of the glasshouse, removal of affected leaves in the crop and the use of resistant varieties may help reduce disease incidence, if the fungus proves to be damaging under New Zealand growing conditions.

Industry has been informed of this detection and its implications.

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**Powdery mildew on capsicum plants.**

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**Joanne Wilson**, Adviser, Plant Pest Management, MAF Plants Biosecurity, PO Box 2526, Wellington, phone 04 470 2796, fax 04 474 4257, joanne.wilson@maf.govt.nz
By the end of the 2003/4 cruise season, 23 cruise ships had made 193 visits to New Zealand ports. Auckland is the most popular destination but the Bay of Islands, Port Chalmers, Milford Sound, Tauranga, Wellington and Lyttelton are also regular stops for the liners.

February is the height of the cruise season, and creates special challenges for border agencies processing the thousands of visitors eager to make the most of their short time ashore.

Clearances at sea

Every vessel is met by a MAF Quarantine Officer and is subject to normal biosecurity requirements. However, if more than 50 passengers and crew will be leaving the ship, the ship’s agent may request that a Quarantine Officer board the vessel at the last overseas port, and clear passengers and ship before arrival in New Zealand. A Customs Officer will also board the ship to complete Immigration and Customs formalities at the same time.

The on-board clearance, in which the ship becomes a floating virtual biosecurity control area, takes place at sea. A clearance area is set up and passengers are processed (declaration forms and screening of luggage) in small groups. This can take up to two days, depending on the numbers disembarking.

On-board clearance means that passengers are free to disembark shortly after arrival in New Zealand, making the most of their limited time here. (Many cruise vessels spend only one night in port, and passengers are booked on tours ashore.)

The on-board Quarantine Officer also takes the Master’s declaration, checks the garbage storage and disposal system, the ballast water status and checks the ship for dunnage and other potential biosecurity risks. The officer also raises awareness of New Zealand quarantine requirements with passengers and crew.

A further inspection is carried out as passengers depart the ship. Hand luggage is either searched or screened by Quarantine Detector Dog. This is to prevent risk items such as fruit, honey or meat being taken off the ship.

The Star Princess, the largest cruise vessel to visit Australasia, is a stunning sight at Lyttelton port.

Biosecurity People

Plant Imports team
Lihong Zhu has joined MAF Plants Biosecurity as a National Adviser for Pest Risk Assessment in the Plant Imports Team. Lihong will be involved in the continued development and refinement of the pest risk assessment process, ensuring MAF’s standards and procedures meet the requirements of international guidelines and standards, as well as domestic legislation and biosecurity policies. Before joining MAF, Lihong was studying for her PhD (Pest risk analysis for plant quarantine) in the UK, where she was also an associate of the Biosecurity Law and Regulation Unit of the University of Greenwich. She has done various consultancy assignments, such as conducting training workshops on risk analysis in the Caribbean countries and Africa and lecturing an MSc course. Before moving to the UK in 1999, Lihong worked in China for nine years as a forestry engineer and group leader in a provincial forestry pest control and quarantine service after graduating with a BSc in Entomology.
Ships shaping up on ballast

Ballast water is the most significant vector for potential marine pest introductions. Recently two milestones towards improved biosecurity in this area were reached. Both have to do with getting ships to carry out effective ballast water treatment while maintaining a safe, convenient shipping service to New Zealand.

International convention adopted

An International Convention for the Control and Management of Ships’ Ballast Water and Sediments was successfully adopted by an international conference hosted in February 2004 by the International Maritime Organisation. New Zealand aims to be one of the first countries to ratify the convention, which requires all vessels to exchange ballast water mid-ocean to reduce the risk from discharges of ballast water containing aquatic nuisance species. It is expected to come into force in around five years.

This exchange requirement is similar to, but stricter than, our current requirement. It requires that at least 95 percent by volume of ballast water is exchanged, and that the exchange is undertaken at least 200 nautical miles from land. (Some exceptions are allowed.) Later, in as little as 10 years’ time, ships will be required to meet the treatment standard, which requires removal or inactivation of most organisms before discharge. It is hoped that research and development underway in many countries at present will deliver practical technology to achieve this.

The Ministry of Fisheries will work closely with government agencies – such as the Maritime Safety Authority, which ensures that shipping meets International Maritime Organisation standards for safety and environmental protection, and the Ministry for the Environment which administers the Marine Pollution Regulations controlling shipping discharges – to explore the best regulatory route for implementing the Convention, possibly in addition to measures under the Biosecurity Act 1993.

Improved reporting and inspection

The second milestone reached was an improved process for ballast water reporting and inspection. From 1 April 2004 ships are required to send in pre-arrival declarations giving details of where ballast was loaded and where and how thoroughly it was exchanged. New procedures for vessel inspection including for ballast water also commenced on 1 April.

Training well received

MAF Quarantine Service vessel inspection officers received training on new ballast water procedures during March 2004. The training run by consultant and former ship’s officer Jim Lyle, has been very well received. As well as explaining the new procedures and giving officers tools for verifying that the reported exchanges have taken place, it has given a fresh insight into ships’ culture and an understanding of ships’ configuration and operation so that ships’ safety aspects can be more easily taken into account.

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Sanitary and phytosanitary trade issues progressed

Special and differential treatment for developing countries and regionalisation were among the items discussed at the latest SPS Committee meeting.

The World Trade Organization’s Committee on Sanitary and Phytosanitary Measures (SPS Committee) held a series of formal and informal meetings in March 2004. Representatives from MAF and the Ministry of Foreign Affairs and Trade attended, in order to progress specific market access issues with key trading partners and also contribute to debate on a number of systemic policy issues. The Committee meets three times a year in Geneva. It provides a regular forum for consultations and works to implement the provisions of Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). The SPS Agreement sets rules that protect each country’s sovereign right to take measures necessary to protect the life or health of their people, animals and plants while at the same time facilitating trade. At its formal meeting, the Committee adopted the last of three clarifications of an October 2001 Decision on Equivalence. (Available at http://docsonline.wto.org Click on simple search and enter G/SPS/19 in the document symbol field.)

Under the SPS Agreement, members must accept the SPS measures of other countries as equivalent if they achieve the same level of protection, even if those measures differ from their own. On the issue of special and differential treatment for developing countries, members made only limited progress with discussions set to continue at the next meeting. Regionalisation is the next systemic policy issue that will be discussed at the next Committee meeting, along with matters relating to transparency and notifications.

Special and differential treatment requires members to take into account the special needs of developing country members. Where the appropriate level of sanitary or phytosanitary protection allows scope for the phased introduction of new SPS measures, longer time-frames for compliance should be accorded on products of interest to developing countries, to maintain their export opportunities.

At the March meeting, members continued discussions on Canada’s proposal on enhancing the transparency of special and differential treatment within the SPS Agreement through

continued on page 16
Invasive alien species and the Convention on Biological Diversity

The seventh meeting of the Conference of the Parties (COP-7) to the Convention on Biological Diversity was held at the Putra World Trade Centre, Kuala Lumpur, Malaysia from 9-20 February 2004. Over 2300 participants attended, representing 161 governments and including observers from other organisations or communities.

The broad agenda covered many issues including:

- protected areas
- mountain biodiversity
- biodiversity and tourism
- access and benefit sharing
- biodiversity and climate change
- inland water ecosystems
- marine and coastal biodiversity
- invasive alien species.


Among other outcomes, New Zealand contributed to a final decision paper on invasive alien species (IAS). New Zealand emphasised that IAS were a key issue in the protection of our biodiversity, economy and human health, and that our strong quarantine system and good national legislation system, in combination with our isolation, were pivotal factors in managing these risks.

The New Zealand delegation recognised the important roles of existing international agreements in contributing to successful outcomes for our biosecurity system and the importance of international cooperation in biosecurity. New Zealand has played a lead role in the past (and currently) in control of IAS. Examples include the Co-operative Island Initiative on IAS and cooperation in the marine environment.

The COP accepted New Zealand’s offer to host an Ad Hoc Technical Expert Group (AHTEG) meeting in New Zealand in early 2005 to address perceived gaps in the international regulatory framework in relation to IAS. The New Zealand delegation successfully broadened the terms of reference for this AHTEG to consider existing regional and national regulatory frameworks. New Zealand emphasised throughout the discussions that it was possible to work within existing international regulatory frameworks to protect biodiversity values from new IAS, with an integrated, inter-sectoral, and multiple agency system-based approach. New Zealand’s biosecurity system has been based on international agreements such as the SPS agreement, codes of the Office International des Epizooties (OIE) and the International Plant Protection Convention (IPPC).

Outside the meeting, delegates from MAF and DoC took the opportunity to share New Zealand’s biosecurity expertise with other technical delegates. Our work within the Convention continues to highlight the strong potential benefits of international cooperation in biosecurity work.

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the use of notifications. The proposal had been adopted in principle at the April 2003 SPS Committee meeting, but the implementation details are still being debated. The Committee discussed the technical details of the procedures put forward by the secretariat and members will look at adopting the procedure at its next meeting in June 2004.

Regionalisation entails ensuring that measures are adapted to the particular characteristics of the area or region from which the products originate and are destined for. During discussions at the March meeting, members highlighted the importance of sharing details of experiences in order to establish recommendations on best practices, to provide useful information to relevant standard-setting bodies, and to promote continued dialogue on effective implementation.

A number of members desire to develop recommended timeframes for recognition of regionalisation in order to discourage unnecessary delays, while others believed that such recommendations could not be effectively implemented given the diverse regulatory environment and the complexity involved in evaluating pest or disease-free status. The next SPS Committee meeting is scheduled for 23-24 June 2004 in Geneva.

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Research builds welfare science base

Research contracts between MAF and the Animal Welfare Science and Bioethics Centre (AWSBC) at Massey University provide twin benefits. As well as providing robust, peer-reviewed scientific analyses relevant to MAF’s policy and standard-setting roles, the contracts support the studies of high quality Masterate level students. Tamara Diesch is the most recent MSc graduate to have benefited from MAF support.

For at least a decade, the AWSBC and its predecessor, the Animal Welfare Research Group, at Massey University has successfully attracted competitive MAF Operational Research contracts to support studies of a range of industry practices. Projects have assessed acute castration, tail docking and dehorning distress and its alleviation in lambs and/or calves, and the welfare of newborn and young dairy calves on-farm and of bobby calves during transport, lairage and slaughter.

The outcomes of these and other projects have been published in 27 peer-reviewed scientific articles and in a further 21 review and conference papers. This represents a significant contribution to animal welfare science. Furthermore, eight MSc projects have so far been completed as part of this MAF-funded research. Two of these MSc graduates have since entered the veterinary profession, one became a tertiary-level teacher and another was employed by an agricultural chemicals and equipment company. Of the remaining four, who all immediately became research assistants, three have subsequently entered PhD programmes. The most recent of these is Tamara Diesch.

For her MSc, Tamara studied the physical and physiological status of newborn and young dairy calves. She found that the welfare of at least 90 percent of calves was good at birth, and that for those that did experience problems, small placental size and maternal underfeeding during pregnancy were not involved, and nor were postnatal hypothermia or starvation.

A key factor was oxygen shortage during difficult births, but with early intervention during labour there were few persistent problems. Most of the funding for this work came from MAF, but additional support, largely in the form of a generous Masterate Scholarship for Tamara, was provided by Dairy InSight.

With a first class honours MSc completed, Tamara then became a research assistant at Massey University, working on a detailed literature analysis of the operation of natural suppressors and activators of behavioural arousal and awareness in foetal and newborn lambs. The idea emerged that, among other factors, a gradual withdrawal after birth of these natural suppressors, some of which have anaesthetic, sedative and pain-relieving actions, may help to minimise suffering in newborn lambs that are destined to become sick or die. If so, and if this is a general phenomenon in the newborns of other livestock species, it would provide fresh insights into the welfare status of newborn animals on farms.

Tamara was recently awarded a prestigious AGMARDT (Agricultural and Marketing Research and Development Trust) Doctoral Scholarship to undertake PhD research in this interesting new area.

Professor David J Mellor, Animal Welfare Science and Bioethics Centre, Massey University

OIE Global Conference on Animal Welfare: a New Zealand Veterinary Association perspective

The New Zealand Veterinary Association was one of a number of New Zealand organisations represented at the OIE Global Conference on Animal Welfare. This brief report is provided by the NZVA’s animal welfare coordinator.

“The significance of this conference should not be underestimated,” said David Byrne, the European Commissioner for Health and Consumer Protection and one of the opening speakers at the OIE Global Conference on Animal Welfare held in Paris in February. “It marks the very first opportunity for stakeholders, scientists and governments to debate animal welfare issues in a worldwide perspective.”

Due to the essential relationship between animal health and welfare, the OIE has recently taken an international lead role in animal welfare. The conference, whose theme was “Bringing together scientific, ethical and cultural values, and practical realities to provide international guidance and standards” had the aim of gathering international support for the OIE in its animal welfare activities and to assess how they could contribute most effectively.

Some 430 delegates, representing 65 of the 166 OIE member countries, attended the conference. The choice of speakers reflected both the geographical and stakeholder range – contributions came from within the OIE and also from the veterinary profession, animal welfare researchers, the international animal welfare movement, animal industries, IATA, the food industry and the media, with a particularly interesting exploration of cultural, religious and ethical issues from Dr Mohan Raj from Bristol University.

Contributions from delegates at large were formalised in a series of group discussions out of which continued on page 18
OIE conference continued from page 17

recommendations to the OIE were determined. Topics included the four that the OIE ad hoc groups have already prioritised:
- Slaughter for human consumption
- Killing for disease control purposes
- Land transportation
- Sea transportation.

Other issues included animal welfare research; communication challenges in animal welfare; the role of the veterinarian in animal welfare and the place of animal welfare in ethics and in the veterinary curriculum; animal welfare in trade; companion animal welfare; wildlife welfare; and animals in research, testing and teaching. New Zealanders were prominent at the conference. Dr David Bayvel, as the Chair of the OIE Working Group on Animal Welfare which

From left to right: Barry O’Neil, Susan Redward, John Taig, Virginia Williams, David Bayvel, Chris Keable. Missing from photograph: Jim Edwards, Lindsay Matthews, David Mellor, Gerry Thompson.

organised the conference, gave two presentations (The OIE animal welfare strategic initiative - progress, priorities and prognosis and The way forward) and chaired a session; Dr Barry O’Neil, as Vice-President of the OIE Administrative Commission, chaired a session; Dr Jim Edwards spoke on behalf of the World Veterinary Association (The role of the veterinarian in animal welfare - a global perspective) and Professor David Mellor gave the New Zealand perspective on The application of legislation, scientific guidelines and standards. Five other New Zealanders attended the conference, representing Deere Industry New Zealand, Meat New Zealand, Federated Farmers, the New Zealand Veterinary Association and the Ministry of Foreign Affairs and Trade.

While there were no illusions about the challenges ahead, there was a feeling of genuine excitement about the conference, and congratulations to the OIE for taking the first steps towards the development of international standards and guidelines.

Dr Virginia Williams,
Animal Welfare Coordinator,
New Zealand Veterinary Association,
Wellington

Update

Draft import health standards for consultation - Animals

Avian influenza in poultry hatching eggs

A briefing paper has been prepared reviewing the risks of importing avian influenza virus in poultry hatching eggs. The following standards have been amended accordingly:
- Chicken hatching eggs from Australia
- Chicken hatching eggs from Great Britain
- Chicken hatching eggs from the Canada and the USA
- Turkey hatching eggs from Australia, Canada, Scotland, Wales and Northern Ireland.

Your comments on the amended avian influenza measures in the briefing paper are welcome and should be received in writing by Wednesday 19 May 2004.

Turkey hatching eggs from the United Kingdom

This draft import health standard (IHS) has been developed by MAF Biosecurity Authority and is available for public consultation. The standard is based on the risk analysis for turkey hatching eggs from the United Kingdom sourced from turkey rhinotracheitis vaccinated flocks, as well as the previous IHS for turkey hatching eggs from Australia, Canada, England, Scotland, Wales and Northern Ireland.

Your comments on the draft import health standard for hatching eggs are welcome and should be received in writing by Wednesday 19 May 2004.

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www.maf.govt.nz/biosecurity/consultation.htm#draft-ihs

Review of submissions for the import risk analysis:

Turkey rhinotracheitis virus in turkey hatching eggs from the United Kingdom sourced from TR-T vaccinated flocks

Only one submission was received on this risk analysis. After consultation within its industry, the Poultry Industry Association of New Zealand supported the conclusions of the risk analysis. Subsequently, MAF will not be producing a formal review of submissions.

Martin Van Ginkel, Technical Adviser, MAF Biosecurity Authority, martin.vanginkel@maf.govt.nz

New and amended import health standards issued - Animals

The following import health standards (IHSs) have been issued by the Director, Animal Biosecurity and are available for use:

Invertebrates into New Zealand

New organism invertebrates into containment in New Zealand

References to transitional and containment facility standards have been updated. The new standards are dated 3 March 2004 and replace those dated 12 January 1998.

Bovine semen from Canada

Clauses 2.4 and 2.6 regarding bovine tuberculosis freedom
have been replaced with the following Clause 2.4:

"2.4 The herd(s) of origin and the semen collection centre are officially free from bovine tuberculosis."

Bovine semen from the United States

The bovine viral diarrhoea virus (BVDV) testing clause has been amended. Testing is still required but no longer within 30 days prior to entry into an approved semen collection centre.

Bovine embryos from Canada

Bovine embryos from the United States

Separate standards now exist for embryos from the United States and Canada; as well as minor editorial amendments, the following changes should be noted:

- The period of embryo collection(s) must be 60 days or less.
- The testing requirements in Section 4 for BVDV have been modified.
- The time frame of donor animal testing for Q fever has been altered.

These standards are all dated 24 February. The semen standards replace those dated 1 December 2003 and the embryo standards replace BOVEMBIC.NAM dated 26 January 2004.

Ovine semen from Australia

Ovine embryos from Australia

Caprine semen from Australia

Caprine embryos from Australia

Cervine semen from Australia

Cervine embryos from Australia

Llama and alpaca embryos from Australia

Minor editorial amendments have been made to all the above standards, as well as the following generic changes:

- The time frame of donor animal testing for Q fever has been altered. Post collection testing must be undertaken between 10-30 days.
- The period of embryo/semen collection(s) must be 60 days or less.
- The donor animal treatment for leptospirosis is no longer required but the embryo preparations/semen diluent must contain antibiotics effective against *Leptospira* spp.
- The testing requirements for bluetongue have been updated as per the Office International des Epizooties Terrestrial Animal Health Code (OIE Code)

Cervine and lamoid standards only:

- The EHD requirements have been updated in line with the OIE Code requirements for bluetongue.

These updated standards are all dated 23 March 2004. The caprine and ovine semen standards replace those dated 8 February 2002; the caprine and ovine embryos standards replace those dated 16 March 2002; the cervine standards replace those dated 5 September 2002 and the lamoid standard replaces CAMEMBIO.AUS dated 1 August 2002.

Dogs and cats from specified countries

Argentina and Bulgaria have been added to the list of eligible countries. The new standard is dated 30 March 2004 and replaces that dated 12 May 2003.

Zoo Antelope from Australia, Canada, South Africa and the United States

Zebra from Australia

Zebra semen from Australia and the United States

These standards were notified for consultation in *Biosecurity* 44 and have now been issued following a review of submissions. The standards are dated 25 March 2003 and are all new except Antelope from Australia, which replaces the standard dated 29 January 2002.

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Amendment to regulations - Animals

Imported animals, embryos and semen information

It has been proposed than an amendment is made to the definition of ‘specified animal’ in the Biosecurity (Imported Animals, Embryos and Semen Information) Regulations 1999.

These regulations are intended to ensure that information on the distribution and use of imported genetic material is recorded and retained, and that the whereabouts of imported livestock is always known to MAF. The regulations ensure that precautionary measures are taken to protect the livestock industry and domestic consumers, and to maintain the ability of the New Zealand animal products industry to trade with other countries on a sustainable basis.

In the regulations, ‘specified animal’ is currently defined as any sheep, goat, cattle or deer. It has been proposed that this definition be amended to include lamoids1, ruminants and pigs. Ruminants include sheep, goat, cattle, deer, buffalo, bison, antelope, giraffes, oxen and goat antelopes.

A broader definition of ‘specified animal’ obviates the need for future changes to the Information Regulations, as MAF receives new requests for import health standards for various species.

The justification for including ruminants, lamoids and pigs in the Information Regulations includes:

- They are farmed animals that are likely to enter the food chain.
- There is a possibility of hydatids infection in imported animals.
- There is a risk of new, unknown or emerging diseases appearing in imported animals.
- There are sufficient numbers (or sufficient potential numbers) of imported animals or embryos to warrant controls.

A discussion paper on the proposed changes to the regulations will be sent to affected groups for comment.

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phone 04 474 4213, kate.hellstrom@maf.govt.nz

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1 ‘Lamoids’ describes the South American camelids – the llama (*Lama glama*), guanaco (*L. huanacos* syn. *L. guanicoe*), vicuna (*L. vicugna*) and the alpaca (*L. pacos*) – but excludes the other camelids – the camels (the bacterian and the dromedary).
Official ID for cattle and deer - end of exemption for slaughter of older stock

The exemption from official identification for cattle and deer born before 1 July 1999 being moved directly to slaughter expires on 1 July 2004. From that date, all cattle or deer over one month of age being sent to slaughter must carry Animal Health Board-approved ear-tags. Owners of cattle or deer of this age or older, which are unable to be tagged, should arrange for them to be slaughtered before 1 July.

The Animal Health Board (AHB) operates a compulsory identification programme for cattle and deer using officially approved ear-tags. The basis of the programme is to ensure all stock are identified to the herd they are first moved from after one month of age. This provides a start point for re-tracing the movement of any animals that are later found to be infected with bovine tuberculosis, so the source of infection can be located.

Legal requirements for identification of cattle and deer are:

Cattle and deer over one month of age must be identified with:
- a bar-coded primary ear-tag and a secondary ear-tag if being sold or moved to another herd or property
- a bar-coded primary ear-tag or a bar-coded slaughter tag (S-tag) if being moved directly to slaughter. S-tags should only be applied within one month of slaughter.

Missing tags
- Missing primary or secondary tags should be replaced with bar-coded replacement tags (R-tags) with the number of the herd in which they are currently resident. S-tags should not be used as replacement tags for bought-in animals.
- Alternatively, exact duplicate tags can be ordered for animals still resident in the herd where they were first tagged if required.

The AHB ID system and the MINDA ID system operated by Livestock Improvement Corporation are legally equivalent. Herd owners may choose which system they wish to use.

AHB tags can be ordered from most farm supply outlets. For details contact 0800 10 10 10, or call 0800 437 243. For details on the MINDA ID system call 0800 2 MINDA.

Susan Keenan, National Adviser, MAF Biosecurity Authority, phone 04 470 2745, susan.keenan@maf.govt.nz
Nick Hancox, Communications Manager, Animal Health Board, phone 04 472 2858, hancoxn@ahb.org.nz

GMO seed testing facilities for pre-border import testing

MAF Biosecurity Authority has recently accredited GeneScan USA in New Orleans for genetically modified organism (GMO) testing for seed imports into New Zealand. GeneScan USA routinely tests food and feed for the presence of GMOs, as well as a range of food contaminants. They are accredited to MAF for testing Zea mays (sweet corn and maize), Glycine max (soybean) and Brassica napus var. oleifera (oilseed rape), to meet the requirements for New Zealand’s import testing protocols.

MAF Biosecurity Authority has suspended the accreditation of Biogenetic Services Ltd., and all seed importers have been advised that they will need to use one of the other three accredited laboratories for GMO testing in the future. This may affect some importers who have already had seed tested by this company which is currently in transit to New Zealand. In these instances, MAF will consider meeting the costs of re-testing.

All current MAF-accredited laboratories for GMO seed testing have been recently audited or visited by MAF staff and were found to comply with requirements. These laboratories are also accredited to the International Standard, ISO/IEC 17025: 1999, and are regularly audited by external accreditation bodies to maintain this certification. Current testing facilities accredited by MAF for pre-border GMO seed testing are:
- Eurofins Scientific Analytic, Nantes, France
- AgriQuality GMO Services, Melbourne, Australia
- GeneScan USA, New Orleans, USA

Kathryn Hurr, Technical Adviser, Genealogical Modified Organisms and Containment Facilities, MAF Plants Biosecurity, kathryn.hurr@maf.govt.nz

Bovine tuberculosis - changes to Otago Land Levy

Proposed amendments to the National Bovine Tuberculosis Pest Management Strategy also included proposed changes to the way in which the Otago Land Levy is calculated. The land levy was established under the Biosecurity (Bovine Tuberculosis Otago Land Levy) Order 1999 as a means of funding the regional share of the Tb pest management strategy vector control costs. The current levy order imposes levies on rural occupiers with different land classes on properties greater than four hectares. Levies are used for the regional share of the vector control programmes administered by the Animal Health Board.

The main changes will be:
- change from a levy based on capital value to a levy based on land value
- replacement of differential rates of levy with a single rate (maximum of 0.065% of land value)
- the levy will be based on a maximum land value set at $5,000 per hectare
- exemptions from levy payment where the total levy on a property is less than $10 (GST exclusive).

These changes are being progressed and proposed to be effective from 1 July 2004.

Susan Keenan, National Adviser, MAF Biosecurity Authority, phone 04 470 2745, susan.keenan@maf.govt.nz
Draft import health standards for consultation - Plants

As part of the consultative process in the development of the import health standards for nursery stock and seed for sowing of Actinidia (kiwifruit), MAF has distributed the following draft documents for public consultation and comment:

- Draft Actinidia import health schedule - nursery stock
- Draft Actinidia import health schedule - seed for sowing
- Actinidia pest risk assessment spreadsheet - nursery stock
- Actinidia pest risk assessment spreadsheet - seed for sowing
- Datasheets for regulated pests of Actinidia

Comments on these draft documents should be forwarded to MAF by close of business on 7 May 2004. Depending on the results of consultation, it is anticipated that the new requirements will be in place by June 2004. MAF encourages respondents to forward comments electronically to the email address below. However, should you wish to forward submissions in writing, please send them to the following address:

Plant Imports - Consultation on Actinidia,
Plants Biosecurity, MAF Biosecurity Authority,
PO Box 2526, Wellington, New Zealand
phone 04 498 9843, fax 04 474 4257,
plantimports@maf.govt.nz

For copies of these documents:

www.maf.govt.nz/biosecurity/consultation.htm#draft-ihs-plants-biosecurity

Chef’s salad surprise

A passenger on a flight from Melbourne to Wellington got a surprise when she opened her in-flight salad recently – on top of the vegetables was a live frog. Quick-thinking aircrew contained the frog and MAFQS was alerted.

A quarantine officer met the flight on arrival and the unfortunate amphibian was euthanased.

Codes of ethical conduct - approvals, notifications and revocations since the last issue of Biosecurity

All organisations involved in the use of live animals for research, testing or teaching are required to adhere to an approved code of ethical conduct.

- Codes of ethical conduct approved: Nil
- Transfers of code of ethical conduct approved: Nil
- Amendments to codes of ethical conduct approved: Nil
- Notifications to MAF of minor amendments to codes of ethical conduct: Nil
- Notifications to MAF of arrangements to use an existing code of ethical conduct
  - Ministry of Agriculture and Forestry National Centre for Disease Investigation (to use AgResearch Ltd’s code and Wallaceville AEC) (renewal – code expired)
  - Kelly Tarlton’s Antarctic Encounter and Underwater World (to use NIWA’s code)
- Codes of ethical conduct revoked or expired or arrangements terminated
  - PPL Therapeutics (NZ) Ltd
- Approvals by the Director-General of MAF for the use of non-human hominids: Nil
- Approvals by the Minister of Agriculture of research or testing in the national interest: Nil

Linda Carsons, Senior Policy Adviser, Animal Welfare, phone 04 470 2746, fax 04 498 9888, linda.carsons@maf.govt.nz

Codes of Welfare - Animal Welfare Act Update

The table below is a quick guide as to the status of the various codes of welfare as they are developed under the Animal Welfare Act 1999.

<table>
<thead>
<tr>
<th>Code</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broiler Code</td>
<td>Final code issued by Minister of Agriculture on 26 June 2003</td>
</tr>
<tr>
<td>Pig Code</td>
<td>Final code presented to Minister of Agriculture on 25 November 2003</td>
</tr>
<tr>
<td>Rodeo Code</td>
<td>Final code issued by Minister of Agriculture on 4 December 2003</td>
</tr>
<tr>
<td>Layer Hen Code</td>
<td>Final code presented to Minister of Agriculture on 19 April 2004</td>
</tr>
<tr>
<td>Zoo Code</td>
<td>Pre-notification consultation closed on 12 December 2003. Final code to be presented to Minister of Agriculture mid 2004</td>
</tr>
<tr>
<td>Circus Code</td>
<td>Public consultation completed on 14 November 2003. Final code to be presented to Minister of Agriculture mid 2004</td>
</tr>
<tr>
<td>Commercial Slaughter Code</td>
<td>Public consultation completed. Final Code to be presented to Minister of Agriculture mid 2004</td>
</tr>
</tbody>
</table>

Wayne Ricketts, Programme Manager Animal Welfare, phone 04 474 4276, fax 04 498 9888, wayne.ricketts@maf.govt.nz
Biosecurity is about managing risks – protecting the New Zealand environment and economy from exotic pests and diseases. MAF Biosecurity Authority devotes much of its time to ensuring that new organism records come to its attention, to follow up as appropriate. The tables below list new organisms that have become established, new hosts for existing pests and extension to distribution for existing pests. The information was collated by MAF Forest Biosecurity and MAF Plants Biosecurity during 16/02/04 - 26/03/04, and held in the Plant Pest Information Network (PPIN) database. Wherever possible, common names have been included.

### PLANTS BIOSECURITY RECORDS 16/02/2004 – 26/03/2004

#### Validated new to New Zealand reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Furovirus</em> Soil-borne wheat mosaic virus</td>
<td><em>Triticum aestivum</em> (wheat)</td>
<td>Mid Canterbury</td>
<td>National Plant Pest Reference Library (NPPRL)</td>
<td>MAF is discussing the management of this disease with industry.</td>
</tr>
<tr>
<td><em>Depressaria pastinacella</em> (parsnip moth)</td>
<td><em>Heracleum sphondylium</em> (hogweed, cow parsnip)</td>
<td>Dunedin</td>
<td>NPPRL</td>
<td>The moth is widely distributed around Dunedin. Both DoC and Otago Regional Council have been informed of the detection.</td>
</tr>
<tr>
<td><em>Cecidophyopsis hendersoni</em> (mite)</td>
<td><em>Yucca elephantipes</em> (yucca)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Detected in Auckland, Wellington and the Hawke's Bay. This mite is very host specific.</td>
</tr>
<tr>
<td><em>Mycosphaerella rosicola</em> (no common name)</td>
<td><em>Rosa sp.</em> (rose)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>From historical information this disease is believed to have been in the country since 1989.</td>
</tr>
<tr>
<td><em>G. vaccinii</em> (phyllosticta leaf spot)</td>
<td><em>Vaccinium ashei cv. Tif Blue</em> (rabbit eye blueberry)</td>
<td>Waikato</td>
<td>NPPRL</td>
<td>Anecdotal evidence suggests that this disease has been present in New Zealand for some time. DoC and the blueberry industry have been notified.</td>
</tr>
</tbody>
</table>

#### New host reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Pseudomonas marginalis</em> (bacterial rot, pink eye)</td>
<td><em>Zantedeschia sp.</em> (calla, cala lily)</td>
<td>Nelson</td>
<td>NPPRL</td>
<td>Other PPIN hosts include kiwifruit, onion, leek, cauliflower, carrot, lettuce, tomato, yam, American ginseng, parsnip, Ranunculus sp., rose, potato and highbush blueberry.</td>
</tr>
<tr>
<td><em>P. viridiflava</em> (bacterial rot, blossom blight, leaf spot, panicle rot, stem bacteriosis)</td>
<td><em>Borago officinalis</em> (borage)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>There are no other hosts recorded in PPIN.</td>
</tr>
<tr>
<td><em>Phoma exigua var. exigua</em> (blight, gangrene, leaf spot, mouldy core, stem spot)</td>
<td><em>Coprosma kirkii</em> (coprosma)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include Verbena, banana and Blue Douglas fir.</td>
</tr>
</tbody>
</table>
New host reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
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<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glomerella cingulata (anthracnose, bitter rot)</td>
<td>Coptosma kirkii (coprosma)</td>
<td>Auckland</td>
<td>(NPPRL)</td>
<td>This fungus has a very wide host range.</td>
</tr>
<tr>
<td>Brahea armata (blue hesper palm)</td>
<td></td>
<td>Northland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include Dracaena sp. and mother-in-law's tongue.</td>
</tr>
<tr>
<td>Fusarium phytophilum (no common name)</td>
<td>Petunia x hybridra Pepe mix (Petunia)</td>
<td>Mid Canterbury</td>
<td>NPPRL</td>
<td>Other PPIN hosts include spider flower.</td>
</tr>
<tr>
<td>Alternaria longissima (no common name)</td>
<td>Coreopsis verticillata (thread leaf coreopsis)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include bridal wreath, climbing fuschia, butterfly plant, com marigold, belts of ireland, annual chrysanthemum and several weed species.</td>
</tr>
<tr>
<td>Cercospora aepi (cercospora leaf spot)</td>
<td>Coreopsis verticillata (thread leaf coreopsis)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include bridal wreath, climbing fuschia, butterfly plant, com marigold, belts of ireland, annual chrysanthemum and several weed species.</td>
</tr>
<tr>
<td>Stemphylium lycopersici (no common name)</td>
<td>Coreopsis verticillata (thread leaf coreopsis)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include tomato and passionfruit.</td>
</tr>
<tr>
<td>Calonectria pauciramosa (no common name)</td>
<td>Callistemon sp. (bottlebrush)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include rhododendron.</td>
</tr>
<tr>
<td>Gibberella baccata (branch dieback, branch rot, canker, false coral spot, stem dieback)</td>
<td>Yucca sp. (yucca)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>This fungus has a very wide host range.</td>
</tr>
<tr>
<td>Fusisoccum luteum (fusicoccum canker)</td>
<td>Ciliata miniatia (Kaffir lily)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>Other PPIN hosts include grape, persimmon, kiwifruit, nashi, pear, apple, rose, j asian plum, plum, peach, nectarine, garden bean, juniper, puka, kauri, feijoa, passionfruit, avocado, lemon, rabbit-eye blueberry, blueberry, olive and coastal banksia.</td>
</tr>
</tbody>
</table>

Extension to distribution reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naohidemyces vaccinii (hemlock – blueberry Rust)</td>
<td>Vaccinium corymbosum cv. Burlington (blueberry, highbush blueberry)</td>
<td>Bay of Plenty</td>
<td>NPPRL</td>
<td>Other PPIN distributions include Waikato.</td>
</tr>
<tr>
<td>Cercospora rubi (double blossom, rosette)</td>
<td>Rubus ursinus (boysenberry)</td>
<td>Hawke's Bay</td>
<td>NPPRL</td>
<td>Other PPIN distributions include Bay of Plenty.</td>
</tr>
<tr>
<td>Fusarium phytophilum (no common name)</td>
<td>Petunia x hybridra Pepe mix (Petunia)</td>
<td>Mid Canterbury</td>
<td>NPPRL</td>
<td>Other PPIN distributions include Northland.</td>
</tr>
<tr>
<td>Pseudocercospora barkeri (pseudocercospora leaf spot)</td>
<td>Ipomoea indica (blue morning glory)</td>
<td>Coromandel</td>
<td>NPPRL</td>
<td>Other PPIN distributions include Waikato and Auckland.</td>
</tr>
<tr>
<td>Calonectria pauciramosa (no common name)</td>
<td>Callistemon sp. (bottlebrush)</td>
<td>Northland</td>
<td>NPPRL</td>
<td>Other PPIN distributions include Auckland.</td>
</tr>
<tr>
<td>Plesospora papaveracea (no common name)</td>
<td>Papaver nudicaule (Iceland poppy)</td>
<td>Auckland</td>
<td>NPPRL</td>
<td>No other distributions recorded in PPIN.</td>
</tr>
</tbody>
</table>

Validated new to New Zealand reports: No new to New Zealand records reported for this period.

New host reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Draba lugens (gum leaf skeletoniser)</td>
<td>Quercus coccinea (scarlet oak)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>This moth has been found on a wide range of Eucalyptus species as well as pohutukawa. Note that with these non-myrtaceous 'host' species, it should be remembered that they are winter deciduous, and therefore any oviposition or incidental larval attack by <em>U. lugens</em> must come from infested Myrtaceae each summer. This factor should limit the degree of possible attack.</td>
</tr>
<tr>
<td>Ctenopseustis obliquana (brown headed leafroller)</td>
<td>Nothofagus nervosa (no common name)</td>
<td>Bay of Plenty</td>
<td>Forest Research</td>
<td>Other PPIN hosts include apple, apricot, butternut squash, and cucumber, Citrus spp., Cymbidium orchid, <em>Eucalyptus</em> sp., feijoa, fuchsia, New Zealand grapefruit, grape, European plum, <em>Japanese</em> plum, kiwifruit, lemon, nectarine, pear, peach, persimmon, <em>Prunus</em> sp., rose, spotted gum, shining gum, Tasmanian blue gum, Sydney blue gum and white peppermint.</td>
</tr>
<tr>
<td>Coccus hesperidum (brown soft scale)</td>
<td>Ficus microcarpa (Chinese banyan, Indian laurel fig)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>Other PPIN hosts include kiwifruit, New Zealand grapefruit, lemon, citron, meyer lemon, mandarin, navel orange, Citrus spp., tangelo, pumpkin, <em>Odontioda</em> sp., Cymbidium orchid, <em>Dendrobium</em> orchid, feijoa, avocado, moth orchid, <em>Trifoliate</em> rootstock, apricot, sweet cherry, cherry laurel, nectarine, <em>Japanese</em> plum and grape.</td>
</tr>
</tbody>
</table>
### New host reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carocerops lacinella</td>
<td>Eucalyptus cladocalyx (sugar gum)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>Other PPIN hosts include Deane's gum, Sydney blue gum, southern mahogany, Eucalyptus calophylla, Eucalyptus punctata, Eucalyptus diversicolor, Eucalyptus amplifolia, Eucalyptus major and Eucalyptus sp.</td>
</tr>
<tr>
<td>Acrocercops lacinella</td>
<td>Eucalyptus maculata (eucalyptus, spotted gum)</td>
<td>Wanganui</td>
<td>Forest Research</td>
<td>Other PPIN hosts include Red bloodwood, mountain ash, red gum, red flowering gum, shining gum, red ironbark, Tasmanian blue gum, White peppermint, Yellow box, Sydney blue gum, Blackbutt, Tallow wood, Messmate stringybark, Alpine ash, Eucalyptus dendromorpha and Eucalyptus sp.</td>
</tr>
<tr>
<td></td>
<td>Eucalyptus punctata (eucalypt)</td>
<td>Auckland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pteris rapae</td>
<td>Tiopaeolium speciosum (Chilean flame creeper)</td>
<td>Rangitikei</td>
<td>Forest Research</td>
<td>Other PPIN hosts include grape, pea, Calla illy and wheat.</td>
</tr>
<tr>
<td>Phoracantha semipunctata</td>
<td>Eucalyptus tereticornis (eucalyptus, forest red gum)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>Other PPIN hosts include Sydney blue gum, Silver dollar gum, Brown barrel, and Southern mahogany.</td>
</tr>
<tr>
<td>Saissetia coffeae</td>
<td>Tristaniopsis laurina (Kanoka, Water gum)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>This insect has a wide host range.</td>
</tr>
<tr>
<td>Pseudocercospora sawadai</td>
<td>Tristaniopsis laurina (Kanoka, Water gum)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>Other PPIN hosts include Brush box.</td>
</tr>
<tr>
<td>Cephalocerus virensens</td>
<td>Callicoma serratifolia (Black wattle, Butterwood)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>Other PPIN hosts include Saw banksia, Kermadec pohutakawa, Willow myrtle, Angophora floribunda, and Eucalyptus sp.</td>
</tr>
<tr>
<td>Uraba lugens</td>
<td>Quercus palustris (pin oak)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>This moth has been found on a wide range of Eucalyptus spp. Note that with these non-myrtaceous 'host' species, it should be remembered that they are winter deciduous, and therefore any oviposition or incidental larval attack by U. lugens must come from infested Myrtaceae each summer. This factor should limit the degree of possible attack.</td>
</tr>
<tr>
<td>Fairmaniella ieprosa</td>
<td>Eucalyptus punctata (eucalypt)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>Other PPIN hosts include White iron bark, Eucalyptus ovata, Eucalyptus approximans, Swamp mahogany, Tasmanian snowgum, and Black Sally.</td>
</tr>
<tr>
<td>Eriococcus coraceus</td>
<td>Eucalyptus punctata (eucalypt)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>This insect has been found on a very wide range of Eucalyptus spp.</td>
</tr>
<tr>
<td>Bionectria ochroleuca</td>
<td>Cupressus lusitanica (Mexican cypress)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>Other PPIN hosts include maize and poplar.</td>
</tr>
<tr>
<td>Nambouria xanthops</td>
<td>Eucalyptus aromaphloia (eucalypt)</td>
<td>Auckland</td>
<td>Forest Research</td>
<td>Other PPIN hosts include Tasmanian blue gum, Ribbon gum, Southern mahogany, Candle-bark gum, Camden woolybutt, and long-leaved Argyle apple</td>
</tr>
<tr>
<td>Placoasterella baileyi</td>
<td>Grevillea banksii (Grevillea)</td>
<td>Bay of Plenty</td>
<td>Forest Research</td>
<td>Other PPIN hosts include Grevillea depauperata and Grevillea lanigera.</td>
</tr>
</tbody>
</table>

### Extension to distribution reports

<table>
<thead>
<tr>
<th>Organism</th>
<th>Host</th>
<th>Location</th>
<th>Submitted by</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uromycladium alpinum</td>
<td>Acacia mearnsii (black wattle)</td>
<td>Marlborough</td>
<td>Forest Research</td>
<td>Other PPIN distributions include Hawke's Bay, Rangitikei and Marlborough Sounds.</td>
</tr>
<tr>
<td>Peltoschema sp. (no common name)</td>
<td>Acacia sp. (acacia)</td>
<td>Gisborne</td>
<td>Forest Research</td>
<td>Other PPIN distributions include Wellington.</td>
</tr>
<tr>
<td>Ochrusopsis subfasciatus</td>
<td>Eucalyptus sp. (eucalypt, gum tree)</td>
<td>Rangitikei</td>
<td>Forest Research</td>
<td>Other PPIN distributions include Auckland, Waikato, Gisborne and Taupo.</td>
</tr>
</tbody>
</table>

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### Exotic disease and pest emergency hotline: 0800 809 966

### Animal welfare complaint hotline: 0800 327 027

www.maf.govt.nz/biosecurity