



PROTECTING OUR AVOCADOS

MAF Biosecurity New Zealand recently declared New Zealand free of Avocado Sunblotch Viroid – a disease that threatens our avocado production and export markets. This successful outcome was achieved through extensive collaboration between the Avocado Industry Council and MAF Biosecurity New Zealand (MAFBNZ).

Avocado Sunblotch Viroid (ASBVd) was believed to be present in New Zealand as a result of testing undertaken by the Ministry of Agriculture and Forestry (MAF) during a subtropical crop survey in 1999.

However, the disease has never been detected since, despite extensive independent surveys and testing carried out by the Avocado Industry Council (AIC). This raised uncertainty about the previous detection and led to the formation of a joint MAFBNZ–industry working group in 2005 that was tasked with designing surveillance and testing protocols based on internationally recognised standards and best practice.

The overarching objective of this project was to determine the status of ASBVd within New Zealand and to provide MAFBNZ with the assurance and confidence for any reassessment of country status. The aim was to develop a programme for preserving access to overseas markets. This is of great importance to the avocado industry, which exports a high percentage of its crop to Australia valued at between \$20–35 million a year.

The working group comprised technical advisers and scientists from within MAFBNZ and industry, drawing together the necessary skills and expertise from both parties. The group developed a new MAFBNZ surveillance standard for the detection of ASBVd and was responsible for the co-ordination of MAFBNZ-approved service providers. MAFBNZ was also responsible for auditing the service providers for compliance to the standard and for the validation of test results.

In February 2009, the AIC contracted these service providers to carry out a survey of avocado sites to meet the sampling and testing protocols within the MAFBNZ standard. In June 2009, the survey was completed. The field sampling and mapping component was delivered by AsureQuality Limited, which utilised sample bar coding/scanning and GPS readings to individually

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identify sample trees and enable ease of traceability. Samples were tested by Linnaeus laboratory using state-of-the-art, real-time polymerase chain reaction (PCR) technology. ASBVd was not detected, and, as a result, MAFBNZ has since declared New Zealand free of ASBVd.

AIC Chief Executive Alan Thorn says that, from the AIC’s perspective, the joint working group has been instrumental in contributing to the success of this project.

“There was a wide representation from within MAF Biosecurity New Zealand, including surveillance, border standards, Plant Health and Environment Laboratory (PHEL) and compliance and enforcement personnel. This gave our industry a good understanding of the concerns and requirements from the collective MAF Biosecurity New Zealand viewpoint.”

Katherine Clift, Surveillance Manager, Post Border, MAFBNZ said the collaborative approach provided an

opportunity for achieving the best outcome for everyone concerned.

“It enabled us to work through the problems together, ensuring the needs of both parties were met, without compromising the overall integrity of the result.”

Another major factor contributing to the success of the project was the expertise of the late Dr Rod Bonfiglioli, technical director of Riversun Nurseries Limited and its subsidiary Linnaeus. His knowledge of ASBVd detection methodologies was a crucial factor in providing the level of assurance that MAFBNZ was seeking.

The project has been a big commitment for both parties. MAFBNZ provided a large amount of expertise and staff resources, and there has been heavy investment by the AIC. Both parties are pleased with the collaborative approach and the outcome, and would encourage other industries to consider collaborative approaches to their own biosecurity projects.

Avocado Sunblotch Viroid

ASBVd is a viroid that is readily transmitted via graft transmission during propagation or from infected seedlings.

Avocado trees affected with ASBVd may be either symptomatic (express physical symptoms of the disease), or asymptomatic and exhibit no symptoms of the viroid but still be capable of infecting other trees.

Symptoms can be seen on trees, twigs, fruit and leaves, and include:

- infected trees that are stunted and have a sprawling growth habit;
- twigs that have a light-yellow, sunken streak that follows the length of the twig;
- fruit that has localised yellow and red depressed lesions generally extending from the stem to the base of the fruit;
- leaves that display areas of “bleached” symptoms and are sometimes distorted.

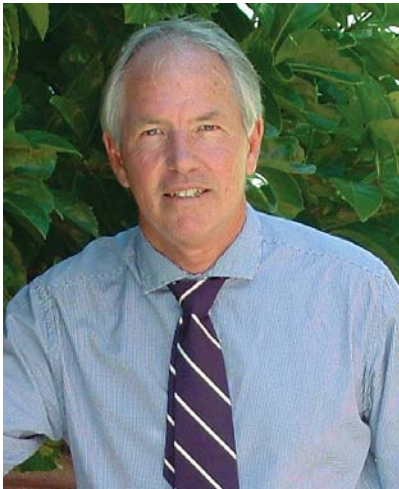
Affected trees suffer from reduced yields of between 15–30 percent, and losses are further aggravated by down-grading of disfigured fruit.

Once trees are infected there is no control for the disease and infected trees should be removed to avoid any further contamination of other trees.

- Karen Pugh, Senior Adviser Plant Response, MAFBNZ, karen.pugh@maf.govt.nz; Vivien Thomson, Adviser Surveillance, MAFBNZ, vivien.thomson@maf.govt.nz

AVOCADOS: young but in strong growth phase

Biosecurity magazine asked the Avocado Industry Council's Chief Executive Alan Thorn about the industry and its views on biosecurity.



What is the importance of biosecurity to your industry?

The avocado industry is relatively young but is still in a strong growth phase, and as volumes increase, greater pressure is placed on existing markets. It is imperative that we explore options for new markets while working to preserve access into our existing markets.

As volumes grow, the importance of biosecurity issues steadily increases as new threats emerge. In the past three years, the industry has dealt with two organisms that were incorrectly recorded as being present in New Zealand [avocado scab, *Sphaceloma perseae*, and Avocado Sunblotch Viroid, ASBVd and, as a result, have posed a threat to access into our major market, Australia. With a new season comes a new issue that we are urgently trying to deal with [light brown apple moth, *Epiphyas postvittana*, into the United States].

The incidences the industry has faced over the past few years have focused our thinking on just how important biosecurity is to the future of the industry, and it is clear that we must plan for the unexpected.

What are the biosecurity challenges?

One of the main issues for avocado growers is that the centre of production is based in the Bay of Plenty, which also has a strong tourism industry. There is tension between better servicing the tourism industry through infrastructure, such as an international airport located in the region, that must be balanced against the biosecurity threat that is potentially imposed.

A significant portion of the industry is based in the Far North (Aupouri Peninsula), which has relatively few horticultural crops – apart from avocados. Given the climate (which is warm) and prevailing winds, we need to be vigilant of new pests and diseases affecting this area.

Importation of new germplasm has been a major issue for the industry given the lack of suitable quarantine facilities. We have had a close working relationship with Riversun Nurseries, which has seen new cultivars finally being released in the past two seasons.

How do you manage these challenges?

Experience has taught us the importance of maintaining a close working relationship with MAF Biosecurity New Zealand (MAFBNZ). One of the benefits of this is the ability

to respond relatively quickly when required.

The other key to managing our biosecurity challenges is our ability to draw on experts, wherever they may reside, and seek their input on developing a working solution. With a young crop, the avocado industry is at a relative disadvantage in terms of the number of researchers who are actively working on avocados. The importance of research and development is also an issue that the industry is mindful of.

Our industry has a strong internal capability, and the skills and experience of the people working in it are invaluable.

What do you see as the future biosecurity issues?

Our immediate issue is the light brown apple moth (LBAM) and access into the United States. The solution the industry is pursuing – the use of waterblasting technology – raises a range of possibilities for the future that we will actively explore with MAFBNZ.

The industry works closely with its counterparts in various countries, exchanging information on new cultivars, while being mindful that we need to preserve access to the germplasm and minimise risk to the existing plantings. A key activity in our next phase of growth will involve keeping a watching brief of biosecurity developments in other countries and how these could impact on our industry. Wherever possible we will seek to identify and minimise threats before they emerge as a crisis.



Avocado Industry Council

The Avocado Industry Council (AIC) is a limited liability company officially recognised by the Government as representing New Zealand avocados. With that recognition comes the requirement that any exporter who wants to export avocados needs to be licensed with the Horticultural Export Authority (HEA).

The AIC deals with any contractual arrangements necessary for the management of the industry. Under the HEA, the AIC implements quality standards, export grade standards and rules and procedures that must be followed by growers, pack houses and exporters.

Industry facts

- The industry vision is “Through outstanding leadership achieve 12 million trays with an industry value of \$250 million by 2015”.
- The New Zealand avocado industry reached a value of close to \$50 million in the 2008–09 season, with \$31 million gained in export earnings.
- The dominant variety of avocado grown in New Zealand is Hass.
- Avocado trees are biennial bearing, meaning production fluctuates up and down from year to year.
- The export season runs from about October to March.
- The 2008–09 season saw 91 percent of exported fruit go to Australia, 7 percent to Japan, and 2 percent to other markets. The 2009–10 season will see a resumption of exports to the United States.
- The main avocado production areas in New Zealand are the Bay of Plenty (63 percent), followed by Whangarei (20 percent), Northland (5 percent) and the rest of the country (8 percent).
- The total number of New Zealand avocado growers is estimated at 1630, of which about two-thirds are export growers.
- Mature plantings (trees of five years and older) exceed 4000 hectares.

■ For more information, see: www.nzavocado.co.nz

Pest surveillance – lures and protocols

The Quadrilateral Scientific Collaboration in Plant Biosecurity (Quads) pest surveillance project team has developed an online database to increase information sharing on surveillance protocols for insect pests of plants.

MAF Biosecurity New Zealand (MAFBNZ) is involved in a project on sharing information about pest surveillance protocols and lures used in trapping and surveillance programmes. The project is part of the Quads collaboration, which facilitates scientific co-operation in plant protection between New Zealand, Australia, the United States and Canada.

One aspect of the project is to develop an online database to increase information sharing on surveillance protocols, including lures and traps. The database will facilitate rapid cross-checking and information retrieval, and is now available on the Quads website www.quadscoop.org. The database has already proved its value by assisting MAFBNZ in identifying sources of lure for the New Zealand gypsy moth surveillance programme (for details on this programme see www.biosecurity.govt.nz/pests/surv-mgmt/surv/gypsy-moth).

All plant pest insect surveillance programmes co-ordinated by government agencies, or species that are identified as a concern, are considered to be within the scope of this database. There are currently more than 400 species of insects listed in the database with varying levels of information entered for each species. Key information listed under each species includes: taxonomic classifications, rationale for the surveillance programme, layout of trapping sites, lures and traps used, cost of programmes, key contacts for the programme and references/web links for additional information.

The database has been lodged on the Quadscoop website as an Excel file under the ‘Resources’ page and will be updated regularly by the project team. The team welcomes reviews and additional information on species already listed or new species of concern that should be added to the database.

■ To contact the project team or to apply for access to Quadscoop, email: vivien.thomson@maf.govt.nz