

American Foulbrood 5-Year Plan

2017 to 2022

Version 1.5 - Consultation Draft



APICULTURE
NEW ZEALAND

American Foulbrood Eradicated by 2030



\$25,000,000 and rising

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American Foulbrood Action Plan 2017 to 2022

Outcome:

American Foulbrood eradicated from New Zealand by 2030.

Our strategy to achieve the outcome:

Make the American Foulbrood management system effective in detecting and eliminating all cases of Foulbrood. Create a culture that supports compliance and a system of enforcement effective in dealing with non-compliance. Equip all participants to play their role.

Intermediate 5-year Outcome:

Reduce the measured incidence of clinical American Foulbrood to below 0.1% (from 0.32%) by 31 December 2022.

Our strategy to achieve the intermediate outcome:

Establish industry standards that:

- A. Recognise, reward and build on exemplary American Foulbrood management practice.
- B. Recognise and affirm fully compliant American Foulbrood management practice.
- C. Support non-compliant beekeepers to become compliant.
- D. Make ongoing non-compliance untenable.

System improvements

1. Legal reform	2. Resources	3. Measurement and monitoring	4. Communications and engagement	5. Compliance	6. Training
<p>Actions:</p> <p>1.1 Revise and update the American Foulbrood National Pest Management Plan to be fit for modern New Zealand apiculture and to comply with legal requirements.</p> <p>1.2 Assist Ministry for Primary Industries to develop New Orders in Council to give legal force to the updated National Pest Management Plan and a revised levy system.</p> <p>1.3 Work with Ministry for Primary Industries to upgrade enforcement powers through better offence provisions and powers for authorised persons.</p>	<p>Actions:</p> <p>2.1 Update the Levy Order to deliver the money needed to reach our outcomes while fairly apportioning costs amongst beekeepers.</p> <p>2.2 Attempt to establish cost sharing arrangements with other beneficiaries that matches contribution to benefits received.</p>	<p>Actions:</p> <p>3.1 Fix the reporting processes, associated Apiweb system and institute checking procedures.</p> <p>3.2 Extend surveillance, utilise new technologies and scientifically rigorous sampling design.</p> <p>3.3 Institute rapid reporting to beekeepers and their neighbours of disease incidence.</p>	<p>Actions:</p> <p>4.1 Empower all beekeepers to actively shape an effective American Foulbrood management system by creating opportunities for meaningful engagement in change processes.</p> <p>4.2 Make communications frequent, engaging and fit for beekeepers' needs.</p> <p>4.3 The Board will drive culture change and improvement in systems and resources.</p>	<p>Actions:</p> <p>5.1 Actively create a culture of compliance with American Foulbrood National Pest Management Plan requirements through social marketing.</p> <p>5.2 Revise compliance systems to reward compliant operators with reduced administrative burdens and recognition for good practice.</p> <p>5.3 Support non-compliant operators to improve.</p> <p>5.4 Improve enforcement systems to make non-compliance untenable.</p> <p>5.5 Seek extension of the powers of authorised persons to enforce the requirements.</p>	<p>Actions:</p> <p>6.1 Structure American Foulbrood training into all levels of apiculture training including that for: beginner beekeepers, new industry staff, refreshers for experienced beekeepers, inspection, compliance and enforcement personnel.</p> <p>6.2 Work actively with large beekeeping businesses to ensure their staff have the necessary American Foulbrood skills.</p>

Measures: The success of this Plan will be measured by:

- 1 Timely implementation of these actions.
- 2 Reduction in the measured incidence of Foulbrood in apiaries from 0.32% in 2016 (2,409 hives of 730,093 based on self-reporting) with the number initially rising with more accurate detection.

Why we need a Plan

Left unchecked American Foulbrood can adversely affect the health of our honey bees, and devastate both bee populations and the bee industry in New Zealand. From a biosecurity perspective, American Foulbrood free status would make it very hard to justify honey imports into New Zealand.

Eradication of Foulbrood as a problem in New Zealand is not only possible, it is practical in the short to medium term. *Varroa* has eradicated a lot of feral hives that were a source of American Foulbrood spores, so it's a lot more realistic to eradicate now, than in 1998 when the American Foulbrood National Pest Management Plan was notified.

We have the opportunity to eradicate American Foulbrood here before European Foulbrood arrives in New Zealand. With European Foulbrood here, eradication of American Foulbrood would get a lot harder, if not impossible. Given it is in Australia, the probability of European Foulbrood arrival is high.

Since 1998 the underlying management systems for American Foulbrood have been improved, but an outdated funding system has meant that these could not keep up with what was required. An opportunity to eradicate American Foulbrood was missed when attention shifted over an extended period to the *Varroa* mite.

The American Foulbrood management system is no longer fit for purpose. The number of hives in New Zealand has more than doubled since 1998. The value of honey exports jumped to \$285 million in 2015 from just \$36 million a decade, and less than \$10 million in 1998. This means that the industry is now far bigger, far more complex, and far more important to New Zealand than when the American Foulbrood National Pest Management Plan was established. Over this time new technologies have been developed that could change the face of American Foulbrood management, but resource constraints have prevented their adoption.

New Zealand is under constant international pressure relating to market access and our food products, therefore we need to show we have a handle on the industry, and the apiary database is a critical tool for stakeholders. The American Foulbrood Board believes the industry should take this opportunity to link the needs relating to food security and traceability with a single national database upgrade.

Good management of American Foulbrood is now more important than ever. The value to New Zealand from the pollination provided by honey bees has reached \$5,000,000,000 per annum. Markets require high levels of assurance about compliance and product quality and American Foulbrood is a risk that we must manage and strive to eradicate.

Reform is timely and urgent. This Plan sets out the way forward.

Purpose

The purpose of this Plan is to create practical steps that New Zealand beekeepers can take to eradicate American Foulbrood.

Scope

This Plan is about management and eradication of American Foulbrood. It does not include the management of other pests, or of other aspects of apiculture, except as they involve American Foulbrood.

Strategy

Diligently detecting and destroying infected hives is sufficient to eradicate American Foulbrood.

Our strategy is to ensure that all hives are exposed to detection, and that detections are reported and acted on.

The beekeeping community is diverse. It includes the primary production segments of hobbyists, small scale commercial operators, and large corporate enterprises including exporters. There are also associated processing and marketing industries, those involved in administration and compliance work, and hive-ware importers/manufacturers and sales.

To lift industry standards, we will recognise four levels of practice (A to D) within each of three primary producing segments above:

- A. **Exemplars of good practice**, managing apiaries well beyond legal requirements, and active in supporting the success of beekeeping, including American Foulbrood control, across the sector. We will become active in recognising, rewarding, and building on their practice.
- B. **Beekeepers utilising current best practice**. These beekeepers are fully compliant with all American Foulbrood management requirements. We will recognise their good practice.
- C. **Beekeepers that are not compliant** with American Foulbrood regulations. In many cases these beekeepers do not have the skills and knowledge to fully comply. We will support these non-compliant practitioners to become compliant by providing education and information.
- D. **Chronically non-compliant beekeepers**. Some **registered** beekeepers have the information to be compliant, but lack the motivation to undertake the necessary actions. Our approach is to make continued non-compliance by these beekeepers untenable by rigorously and fairly enforcing the law. This method will also be used for beekeepers with **unregistered hives**. These beekeepers are either unaware of the requirements of the American Foulbrood regulations, or choose to ignore them. They are currently outside our management systems. We will increase surveillance to detect such operations and bring them into compliance, or shut them down.

We will assess the practice of all beekeepers to measure current compliance, and invest in **moving all into categories A or B**.

Action 1 - Legal reform

Goal

Our goal is that legal plans and rules are up to date and fit for purpose.

What's the problem?

The bee keeping industry faces a range of legal impediments and inadequacies. Some of these directly relate to American Foulbrood management under the Biosecurity Act, and others involve related legislation and systems. Outside of scope for this Plan are other aspects of beekeeping such as food safety.

In terms of American Foulbrood management under the Biosecurity Act:

- The current National Pest Management Plan no longer best fits the needs of a rapidly growing sector.
- The National Pest Management Plan does not meet the requirements of the National Pest Management Policy Direction and we are legally required to review and update it in 2017.
- The Levy Order is ineffective in funding what we need to do.
- Non-compliance is undermining progress, and our enforcement powers are inadequate to deal with this.

What will we do?

- 1.1 Revise and update the American Foulbrood National Pest Management Plan to be fit for modern New Zealand apiculture and to comply with legal requirements.
- 1.2 Assist the Ministry for Primary Industries to develop New Orders in Council to give legal force to the updated National Pest Management Plan and a revised levy system.
- 1.3 Work with the Ministry for Primary Industries to upgrade enforcement powers through better offence provisions and powers for authorised persons.

What will it cost us?

We aren't sure yet. There are only three National Pest Management Plans in New Zealand and each is unique, however it will be a significant drain on our resources. Planning and costing this work is an urgent action. Currently the American Foulbrood management system costs \$0.75million to provide underlying support to an export sector worth \$300million annually, and an estimated \$5B each year to the agriculture and horticulture sectors through pollination. As a comparison of ongoing costs, TB Free New Zealand has an annual budget of \$60million supporting a dairy industry (among others) with an export value of \$13.7billion. Kiwi Vine Health has an annual expenditure of \$2.2million to protect a \$2billion kiwifruit export sector from the disease PSA.

When will this happen?

The Minister for Primary Industries must determine the degree to which the American Foulbrood National Pest Management Plan complies with new legal requirements by 15 February 2017. The Ministry for Primary Industries is due to release an audit of current American Foulbrood management before then. Once these two steps are complete we can commence the necessary review. The process will take around 18 months to complete.

Proposed steps:

1. December 2016 American Foulbrood Board establishes Regulation Review work stream together with the Ministry for Primary Industries.

2. By 15 February 2017 Minister determines whether the National Pest Management Plan conforms to the National Pest Management Policy Direction.
3. 23 and 24 February 2017 work stream reports on proposed process and costs to American Foulbrood Board. Terms of Reference for the review agreed.
4. 31 March 2017 review project commenced.
5. April 2017 New Zealand Beekeepers Journal announces review.
6. July 2017 Apiculture New Zealand conference review process launched and initial consultation.
7. August to December 2017 consultation.
8. 1 April 2018 proposed revised National Pest Management Plan released for submissions.
9. 15 May 2018 submissions close.
10. 30 June submissions analysis and revised Plan to Board.
11. 31 July 2018 Board consideration.
12. 30 August 2018 Plan with supporting documents to Minister.
13. 30 November 2018 Orders in Council.

Figure 1 below shows the first 8 months to Plan launch and Figure 2 the project to Orders in Council.

Figure 1 Regulation Review to Plan launch

Regulation Review	2016	2016	2017	2017	2017	2017	2017	2017	2017
	November	December	January	February	March	April	May	June	July
Establish Regulation Review Committee									
Minister determines NPMP fits NPD									
TOR for the review agreed.									
Review project commenced									
NZ Beekeepers Journal announces review									
ApicultureNZ conference launch									

Figure 2 Regulation Review July 2017 to December 2018

Regulation Review	2017	2017	2017	2017	2017	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	
	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Establish Regulation Review Committee																	
Minister determines NPMP fits NPD																	
TOR for the review agreed.																	
Review project commenced																	
NZ Beekeepers Journal announces review																	
ApicultureNZ conference launch																	
Consultation																	
NPMP draughting																	
Board approval																	
Submissions on proposed NPMP																	
Submissions analysis																	
Revise Plan to Board																	
Board consideration																	
Plan to Minister																	
Cabinet process																	
Orders in Council																	

Action 2 - Resources

Goal

Our goal is to have the finances, human resources, technology, knowledge and systems and processes to eradicate American Foulbrood from New Zealand by 2030.

What's the problem?

- We do not have the resources required to eradicate American Foulbrood from New Zealand.
- The Levy Order is our major source of income, and it delivers a fraction of the money needed to do the job.
- Other beneficiaries, associated industries and Government are not contributing in proportion to the benefits they receive (noting Government represents the public and whole of New Zealand interest).

Each year beekeepers in New Zealand are burning more than 2,400 hives and potentially losing their crop at an estimated minimum cost of \$2,400 each, therefore American Foulbrood is costing the industry a minimum of \$28,800,000 in direct costs over the five years of the Plan at current levels of operation and infection. On top of this are the current direct costs of administering and enforcing the system, \$730,000 through levies, plus the training and other costs directly paid by those involved annually meaning the real costs of Foulbrood are in the order of \$30million over 5 years.

Assuming a further doubling in hive numbers, with infection remaining at current levels, eradication of American Foulbrood in New Zealand would save the industry at least \$10,000,000 per annum in direct costs by 2030. This is certainly an underestimate as the value of the undetected hives and the downstream costs have not been factored in.

Consider this, what would be the benefit and return on investment over 14 years if we reduced the level of AFB to 0.01% by 2022 and achieved eradication by 2030?

Being really conservative, we can project based on the 2016 figures for pasture honey, and exclude manuka and pollination value. This gives a figure of \$1,000 per hive plus \$1,030 for the product it contains.

If the costs of control to achieve eradication rose to \$2million per annum by 2022, and then dropped back to \$400,000 per annum in 2030 (to sustain PCR surveillance of every apiary):

- By 2022 we would have made net savings from hive losses of \$2.5million while costs of control would have risen by a total of \$2.5million over the period meaning we had reached break even.
- By 2027 we would have made net savings from hive losses of \$15million for a net benefit of \$7million.
- By 2031 with AFB eradicated we would have a net benefit of \$31million over the 15 years.
- If we factor in the productivity of those lost hives for 2 years each, there are savings of \$38million at today's crop value. In total combining the costs of lost hives and lost production the net saving is approximately \$70million over 15 years or \$4.7million per year.

Question - would you be prepared to invest 10% of this benefit annually to eradicate AFB in New Zealand? If you say yes, the cost per hive would rise from the current \$1.00 per hive per year to around \$1.50 per hive per year before dropping back to less than \$0.50 per hive. The costs of control have only been crudely estimated, and the true costs may turn

out to be double these. This would mean that the cost per hive could rise as high as \$3.00 per year, but is very unlikely to be higher. Cost estimates will be refined in developing new Levy proposals. Even on our very conservative assumptions about the benefits of control, a cost per hive of \$3.00 per year would still represent a benefit/cost ratio of \$5 saved for every \$1 spent.

What will we do?

- 2.1 Update the Levy Order to deliver the money needed to reach our outcomes while fairly apportioning costs amongst beekeepers.
- 2.2 Attempt to establish cost sharing arrangements with other beneficiaries that matches contribution to benefits received.

What will it cost us?

Apart from changing the regulations, the main cost for us in getting more funding is the time of staff and Board members. The process is critically dependent on active engagement from senior Ministry for Primary Industries staff, and gaining this will be our priority.

When will this happen?

Updating the Levy Order follows the review of the National Pest Management Plan and could be completed by mid to late 2018 with Ministry for Primary Industries assistance. Getting the resources to reform the system, however, cannot wait that long, so cost sharing arrangements and other sources of funding will be investigated as a matter of urgency.

Proposed steps

1. December 2016 invite Ministry for Primary Industries and the horticulture sector to participate in establishing funding options.
2. March 2017 seek support to bridge the gap until the Levy Order can be changed.
3. By June 2017 identify the full costs in making the system do what needs to be done.
4. Late 2018 change the Levy Order to reflect the true costs of eradicating American Foulbrood.
5. 2019 to 2022 institute the revised levies progressively as the eradication programme ramps up.

Figure 3 below shows the period until formal launch of this Plan.

Figure 3 5-Year Plan to Conference Launch

5-Year Plan	2016	2016	2017	2017	2017	2017	2017	2017	2017
	November	December	January	February	March	April	May	June	July
Establish Committee									
Meet Minister									
Establish MPI coordination									
Consultation plan complete									
Initial membership comment									
Report to Board									
Redraft									
Membership comment									
Redraft									
Board signs off final									
Government resource commitment									
Conference launch									

Action 3 - Measurement and monitoring

Goal

Our goal is to have the robust measurement and monitoring systems required to support eradication of American Foulbrood from New Zealand by 2030.

What's the problem?

- The Apiweb system is no longer fit for purpose and the accuracy of our data is compromised by its flaws.
- Surveillance is insufficient to detect unregistered hives or to sufficiently identify reporting failure to enable corrective action to be taken.
- Beekeepers are not receiving timely information about infection detections.

What will we do?

3.1 Fix the reporting processes, associated Apiweb system and institute checking procedures.

3.2 Extend surveillance, utilise new technologies and scientifically rigorous sampling design.

3.3 Institute rapid reporting to beekeepers and their neighbours of disease incidence.

There is opportunity to use information technology to automate things, for example:

- New information technology systems that allow feeds to harvest declaration reports and tutin¹ test results with a cross benefit of automating to meet the traceability needs of the Ministry for Primary Industries.
- Automated GPS² location data for apiaries when they are moved.
- Reporting processes for unregistered apiaries.
- 6-monthly follow-ups if an American Foulbrood event is recorded in an area.
- Text notification of American Foulbrood incidents/rob-outs to beekeepers in agreed radius.

One approach would be to do a complete audit of a geographic area over a month or six weeks, hit the area and see:

- a) How many unregistered hives exist.
- b) PCR American Foulbrood spore test of live bee sample collection for every apiary
- c) What American Foulbrood incidence we find vs what is being reported. This can then be extrapolated over the national picture to see whether the reporting is widely inaccurate.

¹ Tutin is a poisonous plant derivative found in the New Zealand tutu plant (*Coriaria* genus, several different species). It is sometimes associated with outbreaks of toxic honey poisoning when bees feed honeydew exudate from the sap-sucking insect commonly known as the passion vine hopper, when these vine hoppers (*Scolypopa australis*) have been feeding on the sap of tutu bushes. Toxic honey is a rare event and is more likely to occur when comb honey is eaten directly from a hive that has been harvesting honeydew from passion vine hoppers feeding on tutu plants.

² Global Positioning System

When will this happen?

This needs to happen as soon as possible, but Apiweb³ upgrades and increased surveillance are dependent on financial resources being available. The minimum time possible, if other parties do not contribute additional resources, is to:

1. Immediately institute rapid reporting to beekeepers.
2. Commence the Apiweb rebuild by early 2018.
3. Deploy expanded surveillance 2019.

What will it cost us?

The rapid reporting to beekeepers can be instituted within current resources.

The ApiWeb system rebuild has been indicatively costed at \$300,000 to \$400,000 and could be more.

The costs of expanded surveillance require further analysis.

Proposed steps:

1. December 2016 change reporting procedures to institute rapid reporting to affected parties.
2. April 2017 complete design of the ApiWeb rebuild and cost it.
3. July 2017 design expanded surveillance proposal for consultation with beekeepers.
4. December 2017 finalise surveillance, monitoring and reporting design to feed into revision of the National Pest Management Plan and its costing.
5. February 2019 roll out new surveillance, monitoring and reporting programme.

Figure 4 Resources to end of 2017

Measurement and Monitoring	2016	2016	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Rapid reporting to affected parties														
Re-design Apiweb														
Design expanded surveillance proposal for consultation with apiarists														
Finalise surveillance, monitoring and reporting design for NPMP														

³ ApiWeb displays the information held on registered beekeepers. This system displays information in both textual and geospatial formats.

Action 4 - Communications and engagement

Goal

Our goal is informed, involved, and committed beekeepers shaping effective American Foulbrood eradication.

What's the problem?

- There are beekeepers who are not confident in the system or its management, and who do not feel in control and fail to take ownership.
- Some beekeepers do not understand the need for urgent action and thus are not providing the support needed to eradicate American Foulbrood.
- Those that are compliant are paying for others to be targeted.

What will we do?

4.1 Empower all beekeepers to actively shape an effective American Foulbrood management system by creating opportunities for meaningful engagement in change processes.

4.2 Make communications frequent, engaging and fit for beekeepers' needs.

4.3 The Board will drive culture change and improvement in systems and resources.

When will this happen?

Improved communication practice will commence immediately and be developed further over time.

What will it cost us?

Immediate improvement can happen with current resources. The need for money to improve systems and resources will emerge as practice changes. An active learning approach with periodic review of resource requirements will be adopted.

Proposed steps:

1. November 2016 Board reviews communications and engagement culture and processes and directs immediate change.
2. March 2017 communications and engagement plan signed off by Board.
3. April to June 2017 improved communications and engagement leading into Conference.
4. July 2017 feedback at Conference.
5. August to December 2017 feedback used to shape consultation on National Pest Management Plan review.

Figure 5 Communications and Engagement to end of 2107

Engagement	2016	2016	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Board reviews communications and engagement														
Communications and engagement plan														
Lead into Conference														
Feedback at Conference														
Feedback used to shape consultation on NPMP review														

Action 5 - Compliance

Goal

Our goal is to improve compliance with American Foulbrood National Pest Management Plan requirements.

What's the problem?

- The compliance culture has been compromised by the rapid influx of new hives, the 30-day site registration rule, and the incentives created by high honey prices.
- Targeting of problem areas requires resources to achieve eradication.
- Enforcement is not robust enough to deter ongoing non-compliance.
- Non-compliant beekeepers may be ignorant of the requirements.
- Enforcement depends on Ministry for Primary Industries which has other priorities and has not appointed enough AP1s (Authorised Persons under the Biosecurity Act with limited enforcement powers).
- AP2s (Authorised Persons under the Biosecurity Act with inspection powers) hold limited warrants and resources are stretched.

What will we do?

5.1 Actively create a culture of compliance with American Foulbrood National Pest Management Plan requirements through social marketing.

5.2 Revise compliance systems to reward compliant operators with reduced administrative burdens and recognition for good practice.

5.3 Support non-compliant operators to improve.

5.4 Improve enforcement systems to make non-compliance untenable.

5.5 Seek extension of the powers of authorised persons to enforce the requirements.

Overall, our approach will be to create a culture of voluntary compliance backed up by active enforcement:

- a) Move implementation of the National Pest Management Plan away from an honesty based system, to more regular audits (and possibly instant fines). This will audit all beekeepers nationally. Audits may be physical inspections, bee samples, sniffer dogs or future new technology.
- b) Start looking to automatically sample honey samples sent in for tulin to look for hotspots of American Foulbrood.
- c) Look to sample bees from all apiaries annually using PCR⁴ technology.
- d) Work with Ministry for Primary Industries to integrate harvest declaration data so we know where honey yields are coming from, and that they accurately reflect beekeepers registered hives. This should be part of a wider information technology strategy. It is possible the existing registry could also be data-mined to look for beekeeper proximity and American Foulbrood incidence and see if there are any statistical correlations.

⁴ Polymerase chain reaction (**PCR**) is a technique used in molecular biology to amplify a single copy or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence.

- e) Change the legal framework so that those who flagrantly breach the rules receive a binding fine and/or have their registration revoked.
- f) Seek extension of AP1 and AP2 powers.

When will this happen?

Improvement will commence immediately through better communications, a revision of targeting, and increased training opportunities. Improvements to enforcement will be made immediately where possible, but major changes can only happen after the Orders in Council have been changed. This means that substantially better enforcement can be expected from early 2019.

What will it cost us?

Immediate improvement can happen with current resources. The costs of better enforcement will need to be known for the National Pest Management Strategy review, so these will need to be analysed by July 2017.

Proposed steps:

1. April 2017 first meeting of Compliance work stream to design programme of improvement.
2. July 2017 social marketing programme launched at Conference.
3. August 2017 to December 2017 consultation on improvements to compliance and enforcement systems as part of National Pest Management Plan review.
4. April 2018 new systems designed and cost for new National Pest Management Plan.
5. February 2019 institute new systems.

Figure 6 Compliance to costing of new systems

Compliance	2016	2016	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2018	2018	2018	2018	
	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	
Compliance Working Group design programme of improvement																			
Social marketing programme launched at Conference																			
Consultation on improvements as part of NPMP review																			
New systems designed and cost for new NPMP																			
February 2019 institute new systems																			

Action 6 - Training

Goal

Our goal is to that every beekeeper in New Zealand apiculture knows how to comply with the American Foulbrood National Pest Management Plan requirements within the scope of their role.

What's the problem?

- Training standards and specifications, while available, are not being adopted universally across the industry.
- Not everyone who needs to be trained is getting trained.
- Insufficient uptake on refreshers.
- Issues with language barriers.

What will we do?

6.1 Structure American Foulbrood training into all levels of apiculture training including that for: beginner beekeepers, new industry staff, refreshers for experienced beekeepers, inspection, compliance, and enforcement personnel.

6.2 Work actively with large beekeeping businesses to ensure their staff have the necessary American Foulbrood skills.

When will this happen?

Work will start immediately. A training improvement package will be presented at the annual conference in July 2017. Roll-out will commence in August 2017.

What will it cost us?

Some training improvement can be designed within current resources. Full implementation costs will be known once the overall package is designed. Full implementation may need to wait until resourcing issues have been resolved.

Proposed steps:

1. February 2017 establish Training work stream.
2. April to June 2017 consultation.
3. July 2017 report training proposals to Conference.
4. August 2017 feedback from membership.
5. October 2017 training development plan finalised and costed for National Pest Management Plan review.
6. April 2018 training delivery commences.

Figure 7 Training to beginning of new delivery

Compliance	2016 November	2016 December	2017 January	2017 February	2017 March	2017 April	2017 May	2017 June	2017 July	2017 August	2017 September	2017 October	2017 November	2017 December	2018 January	2018 February	2018 March	2018 April
Training Development Working Group																		
Consultation																		
Report training proposals to Conference																		
Feedback from membership																		
Training plan costed for NPMP review																		
Training delivery commences																		

Risk Management

American Foulbrood management faces two key substantial risks over the next 5 years that could affect delivery of this plan:

New pests and diseases

New pests may affect the viability of American Foulbrood eradication. Most likely is European Foulbrood that is already in Australia.

Probability of occurrence is moderate for most pests and diseases, but high for arrival of European Foulbrood. Consequence for most pests is low to very high depending on the organism and its spread, and very high for European Foulbrood.

The risk of further introductions of pests and diseases can be best reduced by stringent border control and increasing beekeeper engagement across the biosecurity system. Engaging in GIA⁵ offers an opportunity for enhancing this engagement. If European Foulbrood enters New Zealand, then this Plan will no longer be viable and will need to be reviewed.

Change in terms of trade

Probability of occurrence high. Consequence moderate to very high.

A global down turn in honey prices, or barriers to important markets, could affect the viability of the honey industry leading to abandoned hives creating a reservoir of disease and a loss of income to manage American Foulbrood.

Conversely, higher prices could accelerate the pace of change in New Zealand, further stressing American Foulbrood management systems. In either case, building more American Foulbrood management capability will reduce the chance of these consequences becoming unmanageable. Given that the constraining factor are the financial resources available under the Levy, Government support will be sought to accelerate capability development.

Major changes in the terms of trade will trigger a review of this Plan and its implementation.

Measures

The success of this Plan will be measured by

1. Timely implementation of these actions.
2. Reduction in the measured incidence of Foulbrood in apiaries.

A fully costed implementation plan will be adopted by the American Foulbrood Board which will meet quarterly to review progress. Progress reports will be made available to the shareholders after each meeting.

Measurement will move from reported incidence, to an objective and scientifically valid measurement of incidence. This will be designed in consultation with the shareholders and implemented as soon as resources allow. In the interim reported incidence will continue to be used.

⁵ Government Industry Agreements for Biosecurity Readiness and Response

Review

The Plan will be reviewed every five years, or sooner if the American Foulbrood National Pest Management Plan changes or if measures show that our targets are not being achieved.

Appendix - Work Streams

The following work streams have been established by the American Foulbrood Board to implement this Plan. Initial membership of each working group will be extended with willing shareholders and stakeholders as the projects proceed:

Legal Reform

Lead: John Hartnell

Initial members: Frans Lass, Kim Poynter

Resources

Lead: John Hartnell

Initial members: Russell Marsh

Measurement and monitoring

Lead: Gabriel Torres

Initial members: Lou Gallagher MPI, Mary Anne Thomason, Byron Taylor (AsureQuality)

Communications and Engagement

Lead: Russell Marsh

Initial members: Karen Kos (CEO ApiNZ), Fiona O'Brien

Compliance

Lead: Jason Ward

Initial members: Tony Roper (AsureQuality), Jason Prior, Mark Goodwin

Training

Lead: Kim Poynter

Initial members: Frank Lindsay, Stewart Fraser