

PROPOSED REGIONALISATION OF WESTERN AUSTRALIA AS A DISEASE-FREE ZONE WITH RESPECT TO *MELISSOCOCCUS PLUTON*

The Western Australian state government (WA) is seeking to have the state declared a disease-free zone for European foulbrood (EFB), a bacterial disease of honey bees. The declaration would involve 'regionalisation' of a disease-free zone within the Australian continent, since EFB is present in all other states in Australia. The declaration is being sought in an effort to gain access for bee products from Western Australia to New Zealand, which is not reported to have EFB.

The following is a brief summary of the documentation provided by the WA in support of this proposal.

OIE and WTO Requirements

The Sanitary and Phytosanitary (SPS) Agreement of the World Trade Organisation (WTO) acknowledges the right of countries to impose sanitary measures on imports of animals and animals products. The measures taken must be scientifically sound and transparent, follow international standards, and be risk-assessment based. At the same time, where there are countries or regions that have the same disease status, the SPS Agreement does not allow those countries or regions to use agricultural quarantine grounds to restrict trade of animals or animal products between their jurisdictions.

In order for Western Australia to be declared an EFB-free area, the state must meet the general requirements for zoning described in the *Office International des Epizooties (OIE) International Animal Health Code* (2000). These requirements mean that:

- The boundary of the disease-free zone must be established by veterinary administration and enforced by legislation.
- There must be constant supervision to prevent honey bees from crossing the boundaries of the state.
- There must be control of movement of bee products into the state.
- The state must maintain an effective veterinary organisation and infrastructure (in the case of bees, a government-sanctioned apiculture programme).
- The state must maintain adequate administrative and legal structures to carry out required actions.
- The state's veterinary administration must possess the necessary resources to supervise the boundaries, maintain clinical and epidemiological surveillance, and carry out necessary diagnostic tests for EFB.

In order for WA to declare area freedom from EFB, the state must also meet the specific requirements for a disease-free zone described in the *OIE Code*. These requirements would include:

- Official knowledge of the location of all apiaries.
- Immediate investigation of suspect outbreaks of EFB.
- If necessary, a surveillance zone separating the state from the rest of the country.
- Importation of honey bees and bee products only under strict controls.

Border Security

WA has presented evidence to support the presence of natural barriers that restrict the natural movement of bees into Western Australia. These natural barriers are highly important in the case of EFB, since WA believes bees from an infected source pose the greatest threat of disease entry.

WA regards the vast majority of land along the interstate border as unsuitable for beekeeping of any kind, although there is some commercial beekeeping in the Kununurra area near the border with the Northern Territory. The environment (hot, lacking of water and year-round nectar/pollen sources) prevents the migration of feral colonies across almost this entire border. Surveys have been carried out in both the northern border area with the Northern Territory and the southern border area with South Australia, with no feral colonies being found.

WA has presented descriptive evidence regarding the state border protection/agricultural quarantine system as it relates to bees and bee products, and has explained in detail how the system works in relation to risk items that may carry EFB. Movement of bees, beekeeping equipment and bee products into Western Australia is controlled by both federal and state legislation. Supervision of the state boundary by WA staff includes coast watch and border inspection posts at points of entry (road, rail, sea ports, airports, mail exchange). X-ray technology is used at the Perth Mail exchange, along with sniffer dogs. In the twelve months from July 1999 to June 2000, 2634 kg of honey were confiscated by WA staff at border checkpoints.

Honey can be imported into Western Australia provided the consignment has been heated to 65°C for at least 8 hours. New Zealand has commissioned research to determine whether this treatment is effective. The control of such imports and the sterilisation process is through a health certificate. All imports are subject to inspection and monitoring of the pasteurisation process. In the four years from 1995 to 1999, the average amount of honey imported into the state under certificate was about 140 tonnes per annum. All such honey has come from elsewhere in Australia. No honey has been directly imported under permit into Western Australia from outside countries.

WA has established protocols in place to notify trading partners in the event that an outbreak of EFB takes place. The WA view is that these protocols, along with a reasonable likelihood that their surveillance system will be able to make a detection of EFB within 12 months of introduction, will ensure that trading partners are not put at risk of an outbreak of the disease.

A significant breach of the WA border security system occurred in 1997 when a consignment of bee pollen was imported illegally into the state. The pollen was mixed into honey at a packing plant, where robbing bees accessed the material. WA officials believe this importation was the source of an outbreak of chalkbrood in the state eighteen months later. Western Australia had previously been free from chalkbrood.

Disease Surveillance

The WA programme for EFB surveillance includes random periodic inspection of apiaries, inspection and sampling of suspect cases, investigation of all brood disorders reported to officials by beekeepers, and surveillance and testing of sentinel hives at 9 high-risk ports.

WA employs 2 full-time and 5 part-time apiary inspectors, and has 4 stock inspectors stationed at northern ports. It maintains a bee disease diagnostic capability in 2 animal health labs, and has epidemiological support in the form of 7 specialists out of a total of 36 government veterinarians. The exotic bee disease surveillance and response programmes include the use of 30 trained beekeeper volunteers.

Government personnel inspect approximately 1255 hives per annum, looking for EFB symptoms. This inspection level represents 2.5% of registered Western Australia hives. Approximately 145 EFB tests (HCT honey tests, brood cultures and sentinel hive honey tests) are carried out per annum. Tests from direct investigations of suspect brood disease are approximately 40 per annum. Sentinel hives are maintained at 9 at-risk ports. Hives are inspected and sampled on a quarterly basis for all exotic bee diseases, including EFB.

The passive surveillance programme is based on requirements in the Beekeepers Act 1963 that all brood diseases of bees, including EFB, that are found or suspected must be notified to the Senior Apiculturalist (including submission of diseased brood comb and four larval smears to the Animal Health Laboratory). An average of about 10 suspect cases per year are submitted by beekeepers and subjected to laboratory diagnosis.

Testing of suspect samples for the presence of *Melissococcus pluton*, the causative organism of EFB, is an important element of the WA surveillance system for the disease. Testing includes smear and culture examination, as well as analysis of honey samples. Statistical data on surveillance for EFB in the past 5 years in Western Australia suggests that of the 726 samples tested, 351 (48.3%) were honey samples.

Risk Analysis

WA has carried out two risk analyses of EFB introduction into Western Australia: a general risk assessment including honey imports, and for possible incursions of bees from overseas, and the likelihood of finding EFB based on inspection data; and a specific risk assessment regarding the introduction of EFB in unpasteurised honey. Both analyses are data-based and make quantitative assessments, including sensitivity analysis.

The conclusions of the first risk analysis were:

- The risk of introducing EFB with heat-treated honey is low (approximately zero).
- Exotic bee incursions from ship to land are unlikely to occur (1 in 20 years).
- If EFB were present in Western Australia, based on current levels of surveillance the prevalence would be low (less than 0.1%).
- The current level of surveillance is sufficient to detect EFB disease at a low prevalence (less than 0.2%).

The conclusions of the second risk analysis were:

- The risk of EFB establishing in Western Australia from small quantities of unpasteurised honey imported by travellers is substantial.
- Between 2 and 9 establishments of EFB are likely per annum, depending on the percentage confiscation assumed.

WA contends that the state's continued freedom from EFB provides evidence that the protocols they have adopted over the last 20 years have been effective in prevention of disease entry and establishment. The argument is made that if EFB were introduced into the state, the progress of the disease would be rapid and severe, as was experienced in eastern Australia in 1977. The risk analysis therefore suggests that, at current rates of surveillance, there would be a reasonable likelihood of detection within 12 months after introduction.

Significant Issues

A significant issue in relation to honey testing is highlighted by a statement made by an Australian bee pathologist that attempts to detect *M. pluton* in honey from infected honey bee colonies have met with little success. The sensitivity of the method is reported to be about 6%. New Zealand also relies on honey testing for EFB surveillance.

It is also unclear how prevalent *M. pluton* is in honey from areas such as eastern Australia where EFB is endemic. It is estimated that the prevalence of *M. pluton* in hives in such areas is 90-99%, with most hives having only sub-clinical infections (no visual symptoms). Whether this prevalence translates into similar contamination rates in honey is unknown.

The WA surveillance system for EFB is similar to the New Zealand system in respect to passive surveillance. However, the WA system includes random hive inspections by qualified personnel for the presence of EFB. These trained inspectors may be better able to detect EFB than most beekeepers, especially given the similarity between halfmoon disease (an innocuous syndrome which disappears after requeening) and EFB. WA also maintains sentinel hives in at-risk ports. This, together with the use of qualified personnel to inspect for EFB, means that the WA system may be more likely to detect the presence of EFB than the surveillance system currently in use in New Zealand, which does not have these elements.

There is a significant difference in border security in Western Australia compared to New Zealand, since Western Australia allows the import of heat-treated honey from other Australian states. New Zealand does not allow the import of heat-treated honey from any source.