

Prevention and Control Program for varroa mite (*Varroa jacobsoni*) under the *Biosecurity Act 2014* – 2019 and 2020 Incidents

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Prevention and Control Program for varroa mite (*Varroa jacobsoni*) under the *Biosecurity Act 2014* – 2019 and 2020
Incidents ii

Revision register

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1. Biosecurity program

1.1 Program name

Prevention and Control Program for varroa mite (*Varroa jacobsoni*) under the *Biosecurity Act 2014 – 2019 and 2020 Incidents*.

1.2 Program scope

The Prevention and Control Program for varroa mite (*Varroa jacobsoni*) under the *Biosecurity Act 2014 – 2019 and 2020 Incidents* (the Prevention and Control Program) is authorised under section 235 of the *Biosecurity Act 2014* (the Act). The Prevention and Control Program acts in conjunction with the Surveillance Program for varroa mite (*Varroa jacobsoni*) under the *Biosecurity Act 2014 – 2019 and 2020 Incidents* (the Surveillance Program) to achieve the objectives of the Response Plan for the Eradication of *Varroa jacobsoni* from Queensland – 2019 and 2020 Incidents (the Response Plan).

The Prevention and Control Program directs activities targeted at eradicating and containing the varroa mite. This includes destruction, sampling and testing of:

- Asian honey bee (AHB; *Apis cerana*), which is a confirmed host of *V. jacobsoni* within the area of the Prevention and Control Program; and
- European honey bee (EHB; *A. mellifera*), which is generally a terminal host of *V. jacobsoni* but potentially a competent host as host-shifting from *A. cerana* to *A. mellifera* has been recorded in several locations

1.3 Abbreviations, acronyms and definitions

Term/acronym	Definition
Act	<i>Biosecurity Act 2014</i>
AHB	Asian honey bee (<i>Apis cerana</i>)
Apiary appliance	Means any apparatus, fitting, implement or utensil that has been used for beekeeping or processing, handling or storing an apiary product
Apiary product	Means bee collected pollen, bee comb, comb sections, cut comb, honey dew, propolis, queen candy or raw beeswax
BQ	Biosecurity Queensland
BSL	Biosecurity Sciences Laboratory, Coopers Plains, Brisbane
DAF	Department of Agriculture and Fisheries
EHB	European honey bee (<i>Apis mellifera</i>)
GBO	General biosecurity obligation (see s 23 of the Act)
Hive	Means any container in which a colony of bees (EHB) is kept (i.e. a managed hive)
Nest	Means a natural shelter for bees and includes the bees, either EHB or AHB (i.e. a feral nest)
NVMEP	National Varroa Mite Eradication Program
Prevention and Control Program	Means the “Prevention and Control Program for varroa mite (<i>Varroa jacobsoni</i>) under the <i>Biosecurity Act 2014 – 2019 and 2020 Incidents</i> ”
Response Plan	Means the “Response Plan for the Eradication of <i>Varroa jacobsoni</i> from Queensland – 2019 and 2020 Incidents”
Surveillance Program	Means the “Surveillance Program for varroa mite (<i>Varroa jacobsoni</i>) under the <i>Biosecurity Act 2014 – 2019 and 2020 Incidents</i> ”
Swarm	Means a group of bees, either EHB or AHB, that has left a hive or a nest with a queen bee to start a new colony
Townsville area	Means the area within the boundary of the Townsville City Council
Varroa mite	Is a honey bee parasite of the genus <i>Varroa</i> . This document is primarily concerned with <i>V. jacobsoni</i> as the species detected in Queensland.
Varroa mite carrier	Varroa mite can be spread on any of the following carriers: a bee; a swarm, nest or hive of bees; an apiary appliance; or an apiary product.

2. Requirement for a prevention and control program

2.1 Purpose and rationale

Significant biosecurity risk

The *Biosecurity Act 2014* (the Act) provides for the establishment of prevention and control programs. Prevention and control programs are directed at any of the following:

- (a) preventing the entry, establishment or spread of biosecurity matter in an area that poses a significant biosecurity risk
- (b) managing, reducing or eradicating any biosecurity matter in an area that could pose a significant biosecurity risk¹.

Background²

On 11 April 2019, 20 rainbow bee eater pellets were collected from the Townsville Port as part of the National Varroa Mite Eradication Program surveillance activity which is being delivered by the Queensland Department of Agriculture and Fisheries (DAF).

On 16 April 2019, the Biosecurity Science Laboratory (BSL) confirmed the presence of three Asian honey bee (AHB, *Apis cerana*) forewings in these pellets. Increased surveillance was conducted in the surrounding areas in response to this detection. Between 16 and 23 April 2019, a further 12 AHB drones were collected from the Townsville Port Administration Building and one AHB worker was collected 300 metres away within the Townsville Port Area. The 12 drones and one worker bee were confirmed as AHB by BSL.

On 16 May 2019 a feral AHB nest was located in the roof cavity of the Townsville Port Administration building. The nest was destroyed and collected and all bees and associated material was sent to BSL for diagnostic analysis. BSL confirmed the presence of seven varroa mites in the sample. Genetic microsatellite testing confirmed that the host AHB did not originate from the AHB found during the 2016 incursion or from any other previous incursions of AHB nationally. Genetic analysis of the drones and the presence of multiple queen cells in the nest also indicated the possibility of multiple colonies in the area. On 31 May 2019 the CSIRO laboratory confirmed the mites' species as *Varroa jacobsoni*.

As part of the ongoing exotic bee surveillance program being delivered by the NVMEP under the Response Plan for the 2019 and 2020 Incidents, an AHB nest was detected within the port area in Townsville on 28 April 2020. Genetic testing showed that the AHB are not related to any other AHB previously detected in Australia. The presence of *V. jacobsoni* on the AHB were confirmed by the CSIRO laboratory in Canberra and the DAF Plant Biosecurity Laboratory (PBL). The BSL assessed the comb and indicated it could be two to three months old, with no evidence of drones, drone brood or swarm cells.

The Townsville area has been the subject of a varroa response since 2016 (National Response Plan for the Eradication of *Varroa jacobsoni* from Queensland, also known as the National Varroa Mite Eradication Program or NVMEP). This response concluded on 31 August 2019 after a 30 month proof-of-freedom phase during which no further varroa mites related to the June 2016 incursion were found.

Varroa mites are generally regarded as the greatest threat to the Australian honey bee industry. *V. destructor* is considered the greater threat but host-shifts by *V. jacobsoni* from AHB to EHB have been recorded in Papua New Guinea and the Solomon Islands and in these cases its pathogenicity has been similar to *V. destructor*. There is a risk that mites detected on AHB in Townsville may adapt to EHB if there is contact between *V. jacobsoni* and local EHB over an extended period. Infestation of EHB colonies

¹ See section 234 (What is a prevention and control program) of the Act.

² Information current at 14 August 2019.