Surveillance Program for varroa mite (*Varroa jacobsoni*) under the *Biosecurity Act 2014 – 2019 Incident*
Revision register

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<th>Version No</th>
<th>Date of Authorisation</th>
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1 Biosecurity program

1.1 Program name

Surveillance Program for varroa mite (Varroa jacobsoni) under the Biosecurity Act 2014 – 2019 Incident.

1.2 Program scope

The Surveillance Program for varroa mite (Varroa jacobsoni) under the Biosecurity Act 2014 – 2019 Incident (the Surveillance Program) is authorised under section 235 of the Biosecurity Act 2014 (the Act). The Surveillance Program acts in conjunction with the Prevention and Control Program for varroa mite (Varroa jacobsoni) under the Biosecurity Act 2014 – 2019 Incident (the Prevention and Control Program) to achieve the objectives of the Response Plan for the Eradication of Varroa jacobsoni from Queensland – 2109 Incident (the Response Plan).

The Surveillance Program directs surveillance activities targeted at the varroa mite. This includes surveillance of:
- Asian honey bee (AHB; Apis cerana), which is a confirmed host of V. jacobsoni within the area of the Surveillance 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

<table>
<thead>
<tr>
<th>Term/acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Act</td>
<td>Biosecurity Act 2014</td>
</tr>
<tr>
<td>AHB</td>
<td>Asian honey bee (Apis cerana)</td>
</tr>
<tr>
<td>Apiary appliance</td>
<td>Means any apparatus, fitting, implement or utensil that has been used for beekeeping or processing, handling or storing an apiary product</td>
</tr>
<tr>
<td>Apiary product</td>
<td>Means bee collected pollen, bee comb, comb sections, cut comb, honey dew, propolis, queen candy or raw beeswax</td>
</tr>
<tr>
<td>BQ</td>
<td>Biosecurity Queensland</td>
</tr>
<tr>
<td>BSL</td>
<td>Biosecurity Sciences Laboratory, Coopers Plains, Brisbane</td>
</tr>
<tr>
<td>DAF</td>
<td>Department of Agriculture and Fisheries</td>
</tr>
<tr>
<td>EHB</td>
<td>European honey bee (Apis mellifera)</td>
</tr>
<tr>
<td>GBO</td>
<td>General biosecurity obligation (see s 23 of the Act)</td>
</tr>
<tr>
<td>Hive</td>
<td>Means any container in which a colony of bees (EHB) is kept (i.e. a managed hive)</td>
</tr>
<tr>
<td>IP</td>
<td>Means an infested premises</td>
</tr>
<tr>
<td>Nest</td>
<td>Means a natural shelter for bees and includes the bees, either EHB or AHB (i.e. a feral nest)</td>
</tr>
<tr>
<td>POR</td>
<td>Means a premises of relevance</td>
</tr>
<tr>
<td>Prevention and Control Program</td>
<td>Means the &quot;Prevention and Control Program for varroa mite (Varroa jacobsoni) under the Biosecurity Act 2014 – 2019 Incident&quot;</td>
</tr>
<tr>
<td>Response Plan</td>
<td>Means the &quot;Response Plan for the Eradication of Varroa jacobsoni from Queensland – 2109 Incident&quot;</td>
</tr>
<tr>
<td>Surveillance Program</td>
<td>Means the &quot;Surveillance Program for varroa mite (Varroa jacobsoni) under the Biosecurity Act 2014 – 2019 Incident&quot;</td>
</tr>
<tr>
<td>Swarm</td>
<td>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</td>
</tr>
<tr>
<td>Townsville area</td>
<td>Means the area within the boundary of the Townsville City Council</td>
</tr>
<tr>
<td>Varroa mite</td>
<td>Is a honey bee parasite of the genus Varroa. This document is primarily concerned with V. jacobsoni as the species detected in Queensland.</td>
</tr>
<tr>
<td>Varroa mite carrier</td>
<td>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.</td>
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</tbody>
</table>
2 Requirement for a surveillance program

2.1 Purpose and rationale

The Biosecurity Act 2014 (the Act) provides for the establishment of surveillance programs. Surveillance programs are directed at any of the following:

(a) monitoring compliance with the Act in relation to a particular matter to which the Act applies
(b) confirming the presence, or finding out the extent of the presence, in the State or the parts of the State to which the program applies, of the biosecurity matter to which the program relates
(c) confirming the absence, in the State or the parts of the State to which the program applies, of the biosecurity matter to which the program relates
(d) monitoring the effects of measures taken in response to a biosecurity risk
(e) monitoring compliance with requirements about prohibited matter or restricted matter
(f) monitoring levels of biosecurity matter or levels of biosecurity matter in a carrier.

Background

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 (QDAF).

On the 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 but still 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 all bees and associated material was sent to BSL for diagnostics. BSL confirmed the presence of 7 varroa mites in the sample. Genetic microsatellite testing has confirmed that the host AHB did not originate from the AHB from 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 Friday 31 May 2019, the CSIRO laboratory confirmed the mites' species as Varroa jacobsoni.

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 is due to end on 31 August 2019 after a 30 month proof-of-freedom phase during which no further varroa mites related to the June 2016 incursion have been found.

Since the identification of AHB wings in April 2019, increased surveillance has been conducted throughout the Townsville area both under the NVMEP and under a new response to this 2019 incursion. Surveillance to August 2019 has found no further evidence of varroa mites or AHB, except for 3 AHB wings in bee-eater pellets collected at the port several days after the destruction of the nest.

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 by varroa mites results in weak and deformed bees and the slow death of the colony. Detection of mites in a hive may take up to two years after the initial infestation and death of the hive will usually occur within three years if unmanaged. The effect of varroa mites on managed EHB hives will also adversely impact on the agricultural
and horticultural industries that rely on *A. mellifera* to pollinate crops, including fruits, nuts, some grains and seeds.

The value of the Queensland honey bee industry (including honey, bees wax, Queen bee sales and pollination services) is estimated at $52 million. The estimated value of pollination services (managed honey bees, feral honey bees and native bees) to the agriculture and horticulture sector in Queensland is quoted between $600 million and $1 billion; the CSIRO estimate these services at around $1 billion for Queensland.

A Response Plan for the Eradication of *Varroa jacobsoni* from Queensland – 2019 Incident has been prepared and endorsed by the Australian Government and State and Territory governments and industry bodies. This surveillance program provides the legislative mechanisms to implement the eradication of varroa mite.

The objectives of the Surveillance Program are to:

i. delimit the geographic distribution of varroa mite in AHB

ii. monitor the feral population of EHB and managed hives to determine whether the varroa mite is present in EHB.

### 2.2 Measures that are required to achieve the purpose

The key activities to be undertaken under the Surveillance Program, as outlined in the Response Plan include (but are not limited to):

- sampling bees and nest materials of AHB within the Townsville area to determine the geographic distribution of *V. jacobsoni*

- sampling bees and nest materials of feral nests of EHB within the Townsville area to determine whether *V. jacobsoni* is present on EHB

- monitoring managed hives of EHB in the Townsville area as another means of determining whether *V. jacobsoni* is present on EHB

- sampling other relevant material such as the pellets of rainbow bee-eaters and other birds

- establishment and maintenance of installations necessary to achieve the above sampling eg feeding stations and pellet-collection sheets

There is some degree of overlap between the Surveillance Program and the Prevention and Control Program. These programs should be read together.

### 2.3 Powers of authorised officers

Section 3.4 of the Surveillance Program details the general powers available to an authorised officer conducting activities under the program, including measures that an authorised officer may take under the program.

**Entry of place**

The Act provides that authorised officers appointed under the Act may, at reasonable times, enter a place situated in an area to which a biosecurity program applies, to take any action authorised by the biosecurity program\(^1\). These activities must be done in a timely and efficient manner to ensure that the measures are as effective as possible. The Surveillance Program authorises entry into places to allow these measures to be undertaken.

\(^1\) See section 261 (Power to enter place under biosecurity program) of the Act.
In accordance with the Act a reasonable attempt will be made to locate an occupier\(^2\) and obtain the occupier’s consent to the entry prior to an authorised officer entering a place to undertake activities under the Surveillance Program. Nevertheless, an authorised officer may enter the place if:

(a) the authorised officer is unable to locate an occupier after making a reasonable attempt to do so, or
(b) the occupier refuses to consent to the entry.

If after entering a place an authorised officer finds an occupier present, or if the occupier refuses to consent to the entry—the authorised officer will make reasonable attempts to produce an identity card for inspection and inform the occupier of the reason for entering and the authorisation under the Act to enter without the permission of the occupier.

An authorised officer entering a place under the Surveillance Program must make a reasonable attempt to inform the occupier of any steps taken, or to be taken, and if steps have been taken or are to be taken, that it is an offence to do anything that interferes with a step taken or to be taken.

An authorised officer must leave a Notice of Entry in a conspicuous position and in a reasonably secure way. This notice must state the date and time of entry and information addressing the reason for entry, authorisation to enter a place and the steps undertaken by the authorised officer after entry\(^3\).

**Obligations**

Section 3.5 of the Surveillance Program details the obligations that may be imposed on a person by an authorised officer conducting activities under the program.

**General powers of authorised officers**

Nothing in the Surveillance Program or its associated Authorisation limits the powers of authorised officers under Chapter 10 of the Act.

### 2.4 Consultation

The Surveillance Program operates within the area of the Townsville City Council (see section 3.3 of the Program Authorisation). The Townsville City Council has been consulted regarding the operation of the program prior to authorisation.

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\(^2\) The Act defines an **occupier**, of a place, generally to include the person who apparently occupies the place (or, if more than 1 person apparently occupies the place, any of the persons); any person at the place who is apparently acting with the authority of a person who apparently occupies the place; or if no-one apparently occupies the place, any person who is an owner of the place.

\(^3\) See section 270 (Entry of place under sections 261 and 262) of the Act.
3 Authorisation of a surveillance program in the State of Queensland

I, Dr Elizabeth Woods, the Chief Executive of the Department of Agriculture and Fisheries (the Department) acting pursuant to section 235 of the Biosecurity Act 2014 (the Act), authorise the Surveillance Program for varroa mite (Varroa jacobsoni) under the Biosecurity Act 2014 – 2019 Incident, (the Surveillance Program) in Queensland, on the basis that:

- I am satisfied that there is varroa mite which is prohibited matter, in the Townsville area.
- I am satisfied that varroa mite in the Townsville area poses a significant biosecurity risk to the Queensland bee industry.
- I am satisfied that measures are required to:
  - monitor the geographic distribution of varroa mite in Asian honey bees; and
  - monitor European honey bees to determine whether varroa mite becomes present in EHB within the area of the Program.

Dr Elizabeth Woods
Director-General
Department of Agriculture and Fisheries

Authorised on 26/10/2019

3.1 Biosecurity matter
The prohibited biosecurity matter to which the Surveillance Program relates is varroa mite (Varroa jacobsoni).

3.2 Purpose of the Program
The objectives of the Surveillance Program are to:

i. delimit the geographic distribution of varroa mite in AHB

ii. monitor the feral population of EHB and managed hives to determine whether the varroa mite is present in EHB.

3.3 Area affected by the Program
The Surveillance Program will apply to the area within the boundary of the Townsville City Council (refer to Figure 1). Any reference to the "Townsville area" in the program is a reference to the area within the boundary of the Townsville City Council.

Surveillance activities targeted at managed hives will only apply to places within the area to which the program refers, where managed hives are kept.
Figure 1: Varroa mite area of interest – Area within the boundary of the Townsville City Council
3.4 Powers of authorised officers

An authorised officer of the Program appointed under the Biosecurity Act 2014, may enter a place—other than a residence—without a warrant and without the occupier’s consent within the State of Queensland under the Program. An authorised officer appointed under the Biosecurity Act 2014 will also have the power to enter a place under the Program.

An authorised officer can exercise the powers of an authorised officer under the Act in relation to the Program, if the authorised officer is appointed by the chief executive. An authorised officer has general powers after entering a place to do any of the following, subject to any appointment conditions and limits imposed on the authorised officer:

<table>
<thead>
<tr>
<th>Powers under the Act</th>
<th>Measures an authorised officer may take under the Surveillance Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powers of entry</td>
<td></td>
</tr>
<tr>
<td>Search any part of the place</td>
<td>Enter a place under s 261 of the Act to conduct surveillance activities under the program, e.g. enter the back yard of a private property to follow flying bees that are being surveyed using the bee lining method.</td>
</tr>
<tr>
<td>Inspect(^{10}), examine(^{11}) or film(^{12}) any part of the place or anything at the place</td>
<td></td>
</tr>
<tr>
<td>Take for examination a thing, or a sample of or from a thing, at the place</td>
<td>Take a person (e.g. a pest control contractor) or equipment onto the place for a purpose consistent with the program, e.g. to identify bees or to collect a sample.</td>
</tr>
<tr>
<td>Place an identifying mark in or on anything at the place</td>
<td>Search a place to check for the presence or absence of a varroa mite or a varroa mite carrier.</td>
</tr>
<tr>
<td>Place a sign or notice at the place</td>
<td>Inspect, examine or film a varroa mite or a varroa mite carrier at a place to assist with tracing of carriers to and from a place.</td>
</tr>
<tr>
<td>Produce an image or writing at the place from an electronic document or, to the extent it is not practicable, take a thing containing an electronic document to another place to produce an image or writing</td>
<td>Collect a sample from a place of a varroa mite or a varroa mite carrier for the purpose of diagnostic analysis, to ascertain the presence or absence of varroa mite.</td>
</tr>
<tr>
<td>Take to, into or onto the place and use any person, detection animal, equipment and materials the authorised officer reasonably requires for exercising the authorised officer’s powers under this division</td>
<td></td>
</tr>
<tr>
<td>Destroy biosecurity matter or a carrier if the authorised officer believes on reasonable grounds the biosecurity matter or carrier presents a significant threat</td>
<td></td>
</tr>
</tbody>
</table>

\(^{4}\) The Act defines a residence to mean a premises or a part of a premises that is a residence with the meaning of section 259(2) and 259(3).
\(^{5}\) See section 259 (General powers to enter places) of the Act.
\(^{6}\) See section 261 (Power to enter a place under biosecurity program) of the Act.
\(^{7}\) See section 255 (3) (Powers of particular authorised officers limited) of the Act.
\(^{8}\) See section 296 (General powers) of the Act.
\(^{9}\) See section 243 and section 247 (Appointment conditions and limit on powers) of the Act.
\(^{10}\) Section 296(5) defines inspect, a thing, to include open the thing and examine its contents.
\(^{11}\) Section 296(5) defines examine to include analyse, test, account, measure, weigh, grade, gauge and identify.
\(^{12}\) Section 296(5) defines film to include photograph, videotape and record an image in another way.
Identify a varroa mite carrier such as a tree that contains or has contained bees with tags, notices, flags or signs for any purpose consistent with the program.

Produce a written and/or electronic note(s) to support program activities.

Take GPS coordinates to ensure accuracy of location details of varroa mite or varroa mite carriers.

Take a document such as a document detailing the movement of a varroa mite carrier that is relevant to the objectives of the program.

An authorised officer may make a requirement (a help requirement) of an occupier of the place or a person at the place to give the authorised officer reasonable help to exercise a general power.

### 3.5 Obligations imposed on a person under the Program

The following obligations may be imposed on a person who is an occupier of a place to which the Surveillance Program relates:

- move or remove any thing at a place that would obstruct an authorised officer undertaking the activities required to take action under the Surveillance Program, e.g. moving outdoor furniture to allow access to the location of a nest; restraining an animal that may interfere with the authorised officer undertaking their duties under the program

- help the authorised officer in the execution of their powers.

These obligations are additional to any legislative requirements under the Act. These include:

- a person has a general biosecurity obligation (GBO) to take all reasonable and practical measures to prevent or minimise the biosecurity risk associated with biosecurity matter
- a person must report the presence of prohibited matter and must not deal with prohibited matter. Varroa mites are prohibited matter.
- a person must report the presence of restricted matter (category 1); and must not take any action to exacerbate, and must take action to minimise, the biosecurity risk associated with the restricted matter (category 1). AHB (Apis cerana javana) is restricted matter (category 1).

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13 See section 297 (Power to require reasonable help) of the Act.
14 See section 236(1)(h) (What program authorisation must state) of the Act.
15 A person of whom a help requirement has been made must comply with the requirement unless the person has a reasonable excuse.
16 See section 23 (What is a general biosecurity obligation) of the Act.
17 See section 36 (Reporting presence of prohibited matter) of the Act.
18 See section 37 (Dealing with prohibited matter) of the Act.
19 See Schedule 1, Part 2 (Animal diseases, parasites and viruses) of the Act.
20 See section 42 (Reporting presence of category 1 or 2 restricted matter) of the Act.
3.6 Commencement and duration of the Program

The Surveillance Program will begin on 1 September 2019 and will continue until 30 April 2021. Program amendments are detailed in the Revision Register. The duration of the program is considered to be reasonably necessary to achieve the Program's purpose.

3.7 Consultation with relevant parties

As required by the Act\textsuperscript{22}, I have consulted, prior to the authorisation of the Surveillance Program, with the following local government, which is the local government for the area to which the program applies:

- Townsville City Council.

3.8 Notification of relevant parties of requirements

As required by the Act\textsuperscript{23}, I will give public notice of the Surveillance Program 14 days before the program starts by:

- giving the notice, by way of letter, to each government department or government owned corporation responsible for land in the area to which the Program relates

- publishing the notice on the Department's website.

A copy of the Surveillance Program (including its Authorisation) is available for inspection at the Department of Agriculture and Fisheries head office at 80 Ann Street Brisbane and regional offices. A copy of the Surveillance Program is also available to view and print at no cost on the Department of Agriculture and Fisheries website at www.daf.qld.gov.au. A copy of the Program Authorisation will be provided on request by contacting the Department of Agriculture and Fisheries Customer Service Centre on 13 25 23.

\textsuperscript{22} See section 239 (Consultation about proposed biosecurity program) of the Act.

\textsuperscript{23} See section 240 (Notice of proposed biosecurity program) of the Act.