



# PRE-HARVEST FIELD CONTROL AND INSPECTION OF STRAWBERRIES

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	<b>PRE-HARVEST FIELD CONTROL AND INSPECTION OF STRAWBERRIES</b>	

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**PRE-HARVEST FIELD CONTROL AND INSPECTION OF  
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## 1. PURPOSE

The purpose of this procedure is to describe -

- (a) the principles of operation, design features and standards required for pre-harvest field control;
- (b) the principles of operation, design features and standards required for inspection; and
- (c) the responsibilities and practices of personnel;

that apply to the certification of pre-harvest field control and inspection of strawberries for fruit fly under an Interstate Certification Assurance (ICA) arrangement.

## 2. SCOPE

This procedure covers all certification of pre-harvest field control and inspection of strawberries for Queensland fruit fly from a business operating under an ICA arrangement within Queensland.

This procedure is applicable only to the following -

- (a) **Pests** – Queensland fruit fly (*Bactrocera tryoni*) and lesser Queensland fruit fly (*B. neohumeralis*);
- (b) **Production areas** – South East Queensland;
- (c) **Production** – In ground production only.

***Certification of pre-harvest field control and inspection of strawberries under this Operational Procedure may not be an accepted quarantine entry condition for all intrastate or interstate markets.***

***Some intrastate or interstate markets may require additional plant quarantine certification for pests and diseases other than Queensland fruit fly as a condition of entry.***

***It is the responsibility of the Business consigning the produce to ensure compliance with all applicable quarantine requirements.***

***Information on intrastate and interstate quarantine requirements can be obtained from the plant quarantine service in the destination state or territory.***

## 3. REFERENCES

ICA-WI-02

*Guidelines for Completion of Plant Health Assurance Certificates*

Broadley R H

*“Protect Your Strawberries”, 2<sup>nd</sup> Edition 1992, Queensland Department of Primary Industries*

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#### 4. DEFINITIONS

<b>accredit</b>	means to accredit persons to give a Biosecurity Certificates in accordance with Section 415 of the Biosecurity Act 2014.
<b>Accredited Certifier</b>	means a person who holds accreditation under chapter 15 of the Biosecurity Act 2014 to give biosecurity certificates.
<b>Accrediting Authority</b>	means the Department of Agriculture and Fisheries Queensland (DAF Queensland).
<b>Application for Accreditation</b>	means an Application for accreditation of an accredited certifier for an Interstate Certification Assurance (ICA) arrangement [CAF-47].
<b>Approved Taxonomist</b>	means a person who is approved by DAF Queensland and is listed on the DAF Queensland Register of Approved Taxonomists.
<b>APVMA</b>	means the Australian Pesticides and Veterinary Medicines Authority.
<b>Assurance Certificate</b>	means a <i>Plant Health Assurance Certificate</i> [CAF-16].
<b>Authorised Signatory</b>	means a person whose name and specimen signature is included as an Authorised Signatory on the Business's Application for Accreditation.
<b>block</b>	means an identifiable area of land on which strawberries are grown, and that is detailed on the Business's property plan submitted as part of the Application for Accreditation. A block may include a number of smaller contiguous divisions of land under strawberry production that are within eight metres of each other.
<b>Business</b>	means the legal entity responsible for the operation of the facility and ICA arrangement detailed in the Business's Application for Accreditation.
<b>Certification Assurance</b>	means a voluntary arrangement between DAF Queensland and a business that demonstrates effective in-house quality management and provides assurance through documented procedures and records that produce meets specified requirements.
<b>certified/certification</b>	means covered by a valid <i>Plant Health Assurance Certificate</i> [CAF-16].
<b>consignment</b>	Means a quantity of product presented on one Plant Health Assurance Certificate. A consignment may contain a number of lots.
<b>facility</b>	means the location where the pre-harvest and post-harvest operations covered by the ICA arrangement are carried out.

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<b>fruit fly</b>	means Queensland fruit fly ( <i>Bactrocera tryoni</i> ) and lesser Queensland fruit fly ( <i>B. neohumeralis</i> ).
<b>fruit fly resting site</b>	means both cultivated and naturally occurring vegetation, e.g. shrubs, trees and other suitable vegetation, which could include an annual crop specifically planted (i.e. forage sorghum), on the boundary of the strawberry block. Fruit fly resting site – in relation to strawberry production only – <b>does not include</b> : strawberry plants; artificial or man-made structures (including non-vegetative windbreaks); or farm infrastructure, such as fences, posts, netting or plastic mulch.
<b>Inspector</b>	means an Inspector appointed under the <i>Biosecurity Act 2014</i> .
<b>ICA</b>	means Interstate Certification Assurance.
<b>Interstate Certification Assurance</b>	means a system of Certification Assurance developed to meet the requirements of State and Territory governments for the certification of produce for interstate and intrastate quarantine purposes.
<b>Lot</b>	Means a quantity of homogeneous product assembled for inspection at one place at one time. A lot could consist of product from one or more growers/blocks/properties.
<b>MAT</b>	means Male Annihilation Technique.
<b>Non-conformance</b>	means a nonfulfilment of a specified requirement.
<b>Package</b>	means the complete outer covering or container used to transport and market the produce.
<b>product/produce</b>	means strawberry fruit or strawberries.
<b>ratoon crop</b>	means the second and later crops taken from the regrowth of a crop after it has been harvested once.
<b>strawberry</b>	means fruit of the genus <i>Fragaria</i> spp.
<b>source property</b>	means a property on which strawberries are subject to field control for fruit fly and inspected prior to certification under this procedure.
<b>South-East Queensland</b>	means that part of Queensland south from Pomona to the state border with New South Wales (south of latitude 26.349° and west to longitude -152.283°).
<b>treated fruit / strawberries</b>	means strawberries that have been grown under the conditions of the pre-harvest field control program.

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*These position titles have been used to reflect the responsibilities of staff under the ICA arrangement. These positions may not be present in all businesses, or different titles may be used for staff that carry out these responsibilities. In some businesses one person may carry out the responsibilities of more than one position.*

The **Certification Controller** is responsible for -

- representing the Business during audits and other matters relevant to ICA accreditation;
- training staff in their duties and responsibilities under this Operational Procedure;
- ensuring the Business and its staff comply with their responsibilities and duties under this Operational Procedure;

**under PART A** (covering pre-harvest field control and harvest inspection)

- ensuring the Business has current accreditation for an ICA arrangement under Part A of this Operational Procedure (refer [7.1](#));
- maintaining a property plan for each source property on which strawberries are grown for certification under this Operational Procedure (refer [7.2](#));
- ensuring a program using Male Annihilation Technique (MAT) devices is undertaken on the source property (refer [7.3](#));
- ensuring all pre-harvest cover sprays and perimeter bait sprays are carried out in accordance with this Operational Procedure (refer [7.4](#));
- ensuring a program of field hygiene is maintained during the harvest period (refer [7.5](#));
- overseeing the harvesting of all strawberries for certification under this Operational Procedure (refer [7.6](#));
- conducting an inspection on any fruit suspected of being infested with fruit fly each day strawberries are harvested for certification under this Operational Procedure (refer [7.7](#));
- maintaining Suspect Fruit Inspection Records (refer [7.7.2](#));
- collecting and packaging suspect fruit fly eggs or larvae (refer [7.7.3](#));
- forwarding samples of suspect fruit fly to an Approved Taxonomist for identification (refer [7.7.3](#));
- instigating action following detection of live fruit fly in strawberries which have undergone pre-harvest field control under this Operational Procedure (refer [7.7.4](#));
- instigating corrective action following rejection of product (refer [7.7.5](#));

**under PART B** (covering fruit receival, grading and packing, inspection and certification)

- ensuring the Business has current accreditation for an ICA arrangement under Part B of this Operational Procedure (refer [7.1](#));
- ensuring a declaration is received with each delivery of strawberries from another business for certification under this Operational Procedure (refer [7.9.1](#));
- ensuring that fruit identification and traceability is maintained from receival through to packing (refer [7.9.2](#));
- overseeing and supervising the grading and packing of all strawberries for certification under this Operational Procedure (refer [7.10](#));



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- conducting an inspection on any fruit suspected of being infested with fruit fly each day strawberries are graded and packed for certification under this Operational Procedure (refer [7.11](#));
- maintaining Suspect Fruit Inspection Records (refer [7.11.2](#));
- collecting and packaging suspect fruit fly eggs or larvae (refer [7.11.3](#));
- forwarding samples of suspect fruit fly to an Approved Taxonomist for identification (refer [7.11.3](#));
- instigating action following detection of live fruit fly in strawberries which have undergone pre-harvest field controls under this Operational Procedure (refer [7.11.4](#));
- instigating corrective action following rejection of product (refer [7.11.5](#)).

The **Spray Operator** is responsible for -

**Male Annihilation Technique (MAT)**

- ensuring MAT devices are placed on the perimeter of the source property at not more than 20 metres apart (refer [7.3.1](#));
- ensuring that the MAT devices are renewed every three months (refer [7.3.2](#));
- maintaining MAT program records (refer [7.3.3](#));

**Pre-harvest bait and cover spraying**

- maintaining a tank calibration certificate for each sprayer used for pre-harvest spraying under this Operational Procedure (refer [7.4.1](#));
- conducting spray equipment calibration tests to ensure that sprays are applied as per label or APVMA permit instructions (refer [7.4.1](#));
- maintaining spray equipment calibration test records (refer [7.4.1](#));
- applying pre-harvest perimeter bait sprays and cover sprays as per the requirements of this Operational Procedure (refer [7.4.3](#));
- preparation of pre-harvest bait and cover spray mixtures (refer [7.4.2](#) and [7.4.3](#));
- maintaining spray equipment (refer [7.4.3](#));
- maintaining bait spray and cover spray mixture preparation and treatment records (refer [7.4.3](#)).

The **Field Hygiene Officer** is responsible for –

- ensuring non-conforming strawberries are removed from the blocks during the harvest period for disposal (refer [7.5](#));
- ensuring that abandoned or spent strawberry blocks receive a chemical cover spray treatment or all fruit from these blocks are removed within four (4) days of ceasing harvest (refer [7.5](#));
- maintaining field hygiene program records (refer [7.5.1](#)).

The **Pickers** are responsible for -

- observing for evidence of fruit fly in treated fruit during harvesting (refer [7.6](#));
- placing fruit suspected of being infested with fruit fly in a suitably marked container and forwarding it to the Certification Controller with each load of fruit picked from the field (refer [7.6](#)).

The **Grader/Packer** is responsible for -

- inspecting for evidence of fruit fly in treated fruit during grading and packing (refer [7.10](#));

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- placing fruit suspected of being infested with fruit fly in a suitably marked container for collection by the Certification Controller (refer [7.10](#)).

The **Authorised Dispatcher** is responsible for -

- ensuring all packages containing fruit covered by an Assurance Certificate issued by the Business under this Operational Procedure are identified (refer [7.12.1](#));
- maintaining copies of all Assurance Certificates issued by the Business under the ICA arrangement (refer [7.12.3](#)).

The **Authorised Signatories** are responsible for -

- ensuring, prior to signing and issuing an Assurance Certificate, that produce covered by the certificate has been prepared in accordance with the Business's ICA arrangement and that the details on the certificate are true and correct in every particular (refer [7.12.2](#));
- if applicable, the completion of the Grower Declaration (refer [7.8](#)).

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## 6. REQUIREMENT

Strawberries certified for **pre-harvest field control and inspection** under this Operational Procedure must comply with all of the following requirements.

1. The **pre-harvest field control program** shall consist of:

- (a) A program of **Male Annihilation Technique** (MAT) devices consisting of -
  - (i) MAT devices being placed on the **perimeter of the source property**;
  - (ii) from the time of planting and renewed every three months until all plants are removed;
  - (iii) at **20 metre** intervals; and
  - (iv) attached to available **vegetation** (for example, trees and woody shrubs) or **artificial structures**.
- (b) A **perimeter bait spray** program consisting of -
  - (i) **Naturalure™** Fruit Fly Bait Concentrate:
    - 1. shall be applied to the perimeter of all strawberry blocks at a rate of 1 L per hectare. The bait spray mixture can be applied as either -
      - a strip spray with a diluted solution (1 part Naturalure™ mixed with 6.5 parts water); or
      - a spot spray with a diluted solution (1 part Naturalure™ mixed with 6.5 parts water) applied as coarse spots of 50 mL per spot of 1 m<sup>2</sup> with 150 spots per hectare; or
      - a spot spray with a concentrated solution (1 part Naturalure™ mixed with 1.5 parts water) applied as coarse spots of 20 mL per spot of 1 m<sup>2</sup> with 125 spots per hectare;
    - 2. applied to the fruit fly resting sites on the **perimeter of all strawberry blocks** on the source property;
    - 3. at a maximum interval of **every seven days**, reapplying sooner if rain washes off the deposit;
    - 4. from the time of planting, or **1 May** for ratoon crops;

OR

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(ii) **Maldison** bait spray:

1. A program of bait sprays consisting of –
  - 700 mL of a 440 g/L product per 100 L of water; or
2. applied in combination with a product containing either hydrolysate or a yeast autolysate protein lure and in accordance with manufacturers label instruction;
3. apply as a low pressure course foliar, spot or strip spray;
4. for foliar and strip spraying, apply in a volume of 5-20 L/ha of bait solution;
5. For spot spraying, apply 100-150 spots/ha at 50-100ml/spot of bait solution;
6. at intervals of (7) days, reapplying sooner if rain washes off the deposit;
7. commencing at least six (6) weeks prior to harvest.

The bait sprays must be continued until either:

- the **completion of harvest** of all fruit for certification from the source property; or
- **all fruit has been removed** from the block; or
- the **plants have been sprayed out or removed** from the block; or
- the **pre-harvest cover spray program** has commenced.

(c) A **pre-harvest cover spray** program, commencing prior to 10 August, to allow for certification of strawberries from 10 August and consisting of either -

(i) A **trichlorfon** mixture applied:

1. in a high volume application containing 250 mL of a 500 g/L product per 100 L of spray mixture;
2. thoroughly to the fruit to the point of run-off;
3. for a maximum of three (3) applications per crop per season with a minimum treatment interval of 7 days between applications.

OR

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- (ii) A **maldison** mixture applied:
1. in a high volume application containing -
    - 140-230 mL of a 440 g/L product per 100 L water;
  2. apply thoroughly to the point of run-off;
  3. for a maximum of six (6) applications per crop per season with a minimum treatment interval of 7 days between applications.

**OR**

- (iii) A **spinetoram** mixture applied:
1. as a thorough foliar cover spray after flower set applied at a maximum rate of 400 mL of a 120 g/L product per hectare in 250 to 1000 L of water;
  2. not exceeding a maximum of four (4) applications per season with a minimum of 7 - 14 days between consecutive (repeat) sprays; and
  3. in conjunction with a continued perimeter bait spray program listed in 6 (b) above.
- (iv) The pre-harvest cover spray program must be applied:
1. to each block of strawberries grown on the property intended for certification from 10 August (a cover spray must have been applied prior to 10 August for certification to occur from 10 August);
  2. following APVMA permit and label directions; and
  3. ending at the completion of harvest.

- (d) A field hygiene program whereby -
- (i) during the harvest period, nonconforming fruit will be disposed of in an approved manner; and
  - (ii) abandoned or spent strawberry blocks must receive either a chemical cover spray treatment (including a combination of herbicide and insecticide according to the approved use instructions), or have all fruit removed from the block.

2. **Inspection** of suspect fruit during harvest and during the grading and packing process, and found free of live fruit fly infestation.

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***DAF Queensland and interstate quarantine authorities maintain the right to inspect certified produce at any time and to refuse to accept a certificate where produce is found not to comply with specified requirements.***

***Some produce may be damaged by chemical treatments. Businesses applying chemical treatments should check with experienced persons such as departmental officers for any available information. Testing of small quantities is recommended.***

***The Business must use products registered under the Agvet Code in accordance with the instructions included on the product's approved label or an applicable APVMA permit, and follow any first aid, safety, protection, storage and disposal directions on the product label or permit. Treatment facilities must comply with the requirements of the local government, environmental and workplace health and safety authorities.***

***Following the required treatments in this procedure does not absolve the Business from the responsibility of ensuring that treated produce does not contain a pesticide residue above the Maximum Residue Level (MRL).***

## **7. PROCEDURE**

### **7.1 Accreditation**

#### **7.1.1 Application for Accreditation**

An Accredited Certifier seeking accreditation for an Interstate Certification Assurance arrangement must make application for accreditation by lodging the *Application for Accreditation of an Accredited Certifier for an Interstate Certification Assurance (ICA) Arrangement* [CAF-47] (refer [Attachment 1](#)) at least 10 working days prior to the intended date of commencement of certification of operation under the ICA arrangement.

If the Accredited Certifier grows the strawberries and applies pre-harvest field control for packing and certification by another business, then Part A is to be indicated on the application and a property plan attached (refer [7.2 Property Plan](#)).

If the Accredited Certifier only packs and certifies fruit, then Part B is indicated on the application. A business seeking accreditation under Part B must lodge their application at least 10 days prior to commencing fruit receipt.

If the Accredited Certifier grows, performs the pre-harvest field controls, packs and certifies the fruit, then Part A and Part B are to be indicated on the application and a property plan attached.

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The application may be lodged online at:-

<https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/land-management/certification-moving-plants/accreditation>

### **7.1.2 Audit Process**

#### ***Initial Audit***

Prior to an Accredited Certifier becoming accredited an initial audit of the Business is carried out to verify the ICA system is implemented and capable of operating in accordance with the requirements of the Operational Procedure, and the system is effective in ensuring compliance with the specified requirements of the ICA arrangement.

On completion of a successful initial audit, accreditation is granted to cover the current season, up to a maximum of twelve months from the date of initial accreditation and a Certificate of Accreditation is issued (refer [7.1.3 Certificate of Accreditation](#)).

#### ***Compliance Audits***

Compliance audits are conducted to verify that the ICA system continues to operate in accordance with the requirements of the Operational Procedure.

Compliance audits are, wherever practical, conducted when the ICA system is operating.

A compliance audit is conducted within four weeks of the initial accreditation or 12 weeks of the annual renewal accreditation of the ICA arrangement.

An additional compliance audit is conducted between six and nine months after the date of accreditation for an ICA arrangement that operates for more than six months of each year.

Random audits are conducted on a selected number of ICA arrangements each year. Random audits may take the form of full compliance audit, or audits of limited scope to sample treatment mixtures, certified produce, ICA system records or ICA system documentation.

Unscheduled compliance audits may be conducted at any time to investigate reported or suspected non-conformances.

#### ***Re-Accreditation***

Accredited Certifiers are required to re-apply for accreditation each year the Accredited Certifier seeks to operate under the ICA arrangement. Accredited Certifiers seeking re-accreditation must lodge a renewal application prior to accreditation lapsing, or if accreditation has lapsed, prior to commencing further certification of produce under the ICA arrangement.

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A compliance audit is conducted within twelve weeks of the date of re-accreditation for an Accredited Certifier applying for annual re-accreditation.

### **7.1.3 Certificate of Accreditation**

An Accredited Certifier will receive a *Certificate of Accreditation for an Interstate Certification Assurance Arrangement* detailing the scope of the arrangement including –

- the facility location;
- the Operational Procedure;
- any restrictions on the accreditation such as –
  - the type of produce covered,
  - the chemicals covered; and
- the period of accreditation.

The Accredited Certifier must maintain a current Certificate of Accreditation and make this available on request by an Inspector.

**An Accredited Certifier may not commence or continue certification of produce under the ICA arrangement unless it is in possession of a valid and current Certificate of Accreditation for the facility, procedure, produce type and chemical covered by the Assurance Certificate.**



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The Certification Controller shall maintain a property plan for each property on which fruit is grown and subject to pre-harvest field controls for certification under this Operational Procedure.

The property plan shall include the following details -

- (a) the location of all blocks on which strawberries are grown;
- (b) for each block on which strawberries are grown, the Block Reference Code or Number, or other identification, used to identify the block;
- (c) the area of each block;
- (d) whether or not it is intended to certify fruit harvested from each strawberry block under the ICA arrangement;
- (e) the intended scope of the arrangement, including the chemicals to be used in the pre-harvest treatments to be applied;
- (f) road access including street name/s;
- (g) internal roadways within the property;
- (h) the location and identification of buildings on the property (e.g. house, packing shed, equipment sheds etc).

A copy of the Business's property plan(s) shall be included with the Business's Application for Accreditation (refer [7.1.1 Application for Accreditation](#)) where accreditation for Part A is required.

If any changes occur to the property plan information, a new property plan must be submitted to the ICA District Co-ordinator within 10 working days of the change occurring.

A blank *Property Plan* [CAF-162] is included as [Attachment 3](#) and may be copied for completion and inclusion with the Business's Application for Accreditation.

**7.3 Male Annihilation Technique (MAT) Program**

Each property on which strawberries are grown for certification under this Operational Procedure shall have a MAT program in place.

**7.3.1 MAT Device Placement**

MAT devices shall be placed on the perimeter of the source property at not more than **20 metres** apart, using available vegetation (for example, trees and woody shrubs) or artificial structures.

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### 7.3.2 MAT Device Placement Frequency

The MAT devices shall be placed at the time of planting and renewed every three months.

### 7.3.3 MAT Program Records

The Spray Operator must record details of the MAT program on the *Male Annihilation Technique Program Record* [CAF-163] (refer [Attachment 4](#)) or records which capture the same information.

The MAT program records must include –

- (a) the date of placement of MAT devices;
- (b) the distance of the perimeter of the source property treated;
- (c) the number of devices placed around the source property;
- (d) how the devices have been placed (i.e. vegetation or artificial structures);
- (e) proposed date/s of renewal of MAT devices;
- (f) the name and signature of the Spray Operator.

## 7.4 Pre-Harvest Spraying

A bait spray program must be applied to the perimeter of every strawberry block until 10 August. From 10 August, a cover spray program shall be implemented in accordance with [6. Requirement](#).

### 7.4.1 Spray Equipment Calibration

#### *Spray Tank Volume and Calibration*

Permanent volume indicator marks shall be made on the side of the spray tank, on a sight tube or sight panel on the outside of the tank, or by some other method which clearly and accurately indicates the **maximum mixture level** and any **incremental volumes** used.

Volume indicator marks shall include the volume in litres required to fill the tank to that level.

Each of the volume indicator marks shall be calibrated with the tank at the normal filling position using a calibrated flow meter, or by some other method which accurately measures any volumes used. The person conducting the calibration test shall issue a certificate of calibration of the spray tank which must be available to the auditor at the initial audit and all compliance audits.

An example *Chemical Mixture Tank Calibration Certificate* [CAF-03] is shown as [Attachment 5](#).

A Tank Calibration Certificate is not required for hand held equipment such as hand held misters or knapsack sprayers, where the capacity of the spray tank is less than 25 litres.

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The Spray Operator shall carry out spray application rate calibration tests on spraying equipment for applications which require the spray mixture to be applied at a specified rate per hectare. The spray application rate calibration tests shall be performed prior to commencement of the season each year and again within four weeks after the commencement of treatment.

Water without concentrate may be used in these calibration tests. The tables below give examples of how to perform calibration tests for bait spraying and cover spraying.

***Bait Spray application rate calibration tests may be carried out by using the following method -***

**Bait Spot Spraying**

***Application rate calibration tests may be carried out by using the following method -***

- 1. Fill the spray tank with water. With pump operating at the pressure selected to produce a coarse spray, collect and record the output from the equipment using an accurate timer and measuring cylinder.***
- 2. Measure the time (seconds) required to discharge 100 mL from the spray equipment.***
- 3. Divide this figure by 2 to give the time required to apply 50 mL of bait spray mixture or by 5 to give the time required to apply 20 mL of bait spray mixture.***
- 4. Record these times as a guide to the time required to apply the recommended quantity of bait spray to each fruit fly resting site.***

**Continuous Spray**

- 1. Fill the spray tank with water. With pump operating at the pressure selected to produce a coarse spray, collect and record the output from the equipment using an accurate timer and measuring cylinder.***
- 2. Measure the time (seconds) required to discharge 100 mL from the spray equipment.***
- 3. Calculate the area of the block (Ha) and the perimeter distance of the block (metres).***
- 4. Calculate the total volume of spray mixture to be applied on the perimeter distance (at the rate of 1 L concentrate / Ha – or 7.5 L spray mixture / Ha).***

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***For Example –***

***Area of Block = 8 Ha***

***Perimeter Distance = 1200 metres***

***Total Volume of Spray Mixture =***

***8 Ha x 7.5 L/Ha applied to 1200 m***

***OR 60 L applied to the 1200 m***

***OR 1 L applied every 20 m***

***Cover Spray application rate calibration tests may be carried out by using the following method -***

***Dynamic Calibration***

***1. Fill the spray tank with water. With pump operating at normal speed, check all nozzles. Collect and record the output of every nozzle for a given time, say one minute, using an accurate measuring cylinder.***

***Replace any nozzle with more than 10% variation from the manufacturer's output specification.***

***2. Calculate the effective spraying width of the boom in metres:***

- For broadcast spraying, use number of nozzles x nozzle spacing;***
- For band spraying, add the band widths;***
- For bed spraying, add the bed widths.***

***3. Divide effective spraying width into 100 for the distance in metres to travel in the calibration run (100 m<sup>2</sup>).***

***For example -***

***effective spray width = 2 metres***

***length of calibration run =  $\frac{100}{2}$  = 50 metres***

***4. Accurately mark out this distance in the field, using stakes or pegs.***

***5. Refill spray tank with water to the maximum mixture level mark or an incremental volume mark.***

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- 6. Mark the position of the tractor so that you can return to exactly the same position after the calibration run, ensuring the spray tank has the same level of alignment for accurate measurement of the spray volume used.**
- 7. Spray out over the measured distance at the same pressure, same engine RPM and gear and the same ground surface as in your field spraying.**
- 8. Return to the exact starting position and refill tank to the same mark, measuring the volume of water required.**
- 9. Multiply the number of litres to refill the tank by 100 to give the number of litres your sprayer will apply per hectare.**

**For example -**

**volume to refill tank = 3.75 litres**

**application rate (L/Ha) = 3.75 X 100 = 375 L/Ha**

**Spot-checking (Quick Check Method)**

- Divide the volume of spray used (in litres) by the area treated (in hectares) in a given application.**

**For example -**

**volume of spray applied = 300 litres**

**area treated = 0.8 hectares**

**application rate (L/Ha) =  $\frac{300}{0.8}$  = 375 L/Ha**

- If the actual application rate varies by more than 10% from the calculated application rate the spray equipment must be re-calibrated.**

**Further information on calibration of pre-harvest spray equipment can be obtained from the publication "Protect Your Strawberries" 2nd edition 1992, edited by Broadley, Roger H.**

### **Spray Equipment Calibration Records**

Records of each spray equipment calibration test shall be maintained by the Spray Operator and record the name of the person conducting the test, the identification of the spray equipment, the date of testing and the results achieved during the tests.

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An example *Bait Spray Equipment Calibration Test Record* [CAF-164] is included as [Attachment 6](#) and a *Cover Spray Equipment Calibration Test Record* [CAF-165] is included as [Attachment 7](#).

#### 7.4.2 Calculating the Quantity of Concentrate to Add to the Spray Mixture

##### ***Bait Spray***

Calculate –

- (a) For Naturalure™ Fruit Fly Bait Concentrate to be applied:
  - a. in a **diluted** solution, add 1 litre of product for every 6.5 litres of water in the spray tank (i.e. 13.3 L of product for 100 L of spray mixture); or
  - b. in a **concentrated** solution, add 1 litre of product for every 1.5 litres of water in the spray tank (i.e. 40 L of product for 100 L of spray mixture); or
- (b) For Maldison mixture:
  - a. add 7.0 mL of a concentrate containing 440 g/L;

for **every litre of mixture** in the spray tank, in combination with a suitable product containing either hydrolysate or a yeast autolysate protein lure.

##### ***Cover Spray***

Calculate -

- (a) 2.5 mL of a concentrate containing 500 g/L **trichlorfon**; or
- (b) 1.4-2.3 mL of a concentrate containing 440 g/L **maldison**; or
- (c) 0.4 mL of a concentrate containing 120 g/L **spinetoram**;

for **every litre of mixture** in the spray tank.

Calculate the volumes of concentrate for the **maximum mixture level** and each of the **incremental volumes** marked on the spray tank and record these on the Spray Mixture Preparation and Treatment Record [CAF-168] (refer [7.4.2 Spray Mixture Preparation Charts](#)).

##### ***Spray Mixture Preparation Charts***

The Business shall maintain a *Bait Spray Mixture Preparation Chart* [CAF-166] (refer [Attachment 8](#) and [Attachment 9](#)) and a *Cover Spray Mixture Preparation Chart* [CAF-167] (refer [Attachment 10](#) and [Attachment 11](#)), or similar records, in close proximity to the spray mixture preparation area at the time of making up the spray mixture.

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The charts shall be prepared for each spray unit and chemical used by the Business for bait spraying and cover spraying under this Operational Procedure.

The *Bait Spray Mixture Preparation Chart* shall provide the following details -

- (a) the identification of the spray equipment and if applicable, the tractor to which the chart applies;
- (b) if applicable, the gear and engine RPM at which the tractor shall be operated;
- (c) the time in seconds required to apply either 20 mL, 50 mL or 100 mL of bait spray mixture (refer [7.4.1 Spray Equipment Calibration](#));
- (d) the trade name of the concentrate to which the chart applies;
- (e) the name and concentration of the active ingredient in the concentrate;
- (f) the application rate (strip or spot spraying; diluted or concentrated solution);
- (g) the quantity of concentrate required per litre of spray mixture in millilitre per litre;
- (h) the total volume in litres of the spray tank when filled to the **maximum mixture level** mark;
- (i) the volume of concentrate required to achieve the required bait spray mixture when filled to the **maximum mixture level** mark;
- (j) the volume of concentrate required to achieve the required bait spray mixture for any **incremental volumes** used;
- (k) the printed name and signature of the person responsible for the chart's preparation and the date of preparation.

An example of a completed *Bait Spray Mixture Preparation Chart* [CAF-166] is shown as [Attachment 9](#).

The *Cover Spray Mixture Preparation Chart* shall provide the following details -

- (a) the identification of the spray equipment and if applicable, the tractor to which the chart applies;
- (b) if applicable, the gear and engine RPM at which the tractor shall be operated;
- (c) the trade name of the concentrate to which the chart applies;
- (d) the name and concentration of the active ingredient in the concentrate;
- (e) if applicable, the mixture application rate per hectare (refer [7.4.1 Spray Equipment Calibration](#));
- (f) the total volume in litres of the spray tank when filled to the **maximum mixture level** mark;
- (g) the volume in millilitres (mL) of concentrate required in the mixture when filled to the **maximum mixture level** mark;
- (h) the volume in millilitres (mL) of concentrate required in the mixture for any known **incremental volumes** used;

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- (i) the printed name and signature of the person responsible for the chart's preparation and the date of preparation.

An example of a completed *Cover Spray Mixture Preparation Chart* [CAF-167] is shown as [Attachment 11](#).

### 7.4.3 Pre-Harvest Bait Spray and Cover Spray Treatment

#### *Pre-Harvest Bait Spray*

The perimeter bait sprays must be applied to the fruit fly resting sites on the perimeter of all strawberry blocks on the source property. The bait sprays **must not** be applied to strawberry plants.

***The effectiveness of perimeter bait spraying is improved if applied to areas attractive to fruit flies. Fruit flies generally do not forage low to the ground and therefore the Business should consider applying bait sprays to likely fruit fly resting sites located at, or above, 1 metre in height.***

For bait sprays containing **Naturalure™** Fruit Fly Bait Concentrate, applications shall commence from the time of planting for new season crops, or from 1 May for ratoon crops, and at a maximum interval of every seven (7) days (plus 1 day when necessary).

The bait spray shall be applied as a low pressure coarse spray in a strip or spot on the fruit fly resting site.

Naturalure™ shall be applied at a rate of 1 litre of product per hectare. The treatment area shall be determined as the area within the perimeter of the bait spray treatment. The bait spray mixture must be applied as either -

- (a) a strip spray with a diluted solution (1 part Naturalure™ mixed with 6.5 parts water); or
- (b) a spot spray with a diluted solution (1 part Naturalure™ mixed with 6.5 parts water) applied as coarse spots of 50 mL per spot of 1 m<sup>2</sup> with 150 spots per hectare; or
- (c) a spot spray with a concentrated solution (1 part Naturalure™ mixed with 1.5 parts water) applied as coarse spots of 20 mL per spot of 1 m<sup>2</sup> with 125 spots per hectare.

For bait sprays containing **Maldison**, applications shall commence at least six (6) weeks prior to harvest, and at intervals of (7) days.

The bait spray shall be applied as a low pressure coarse spray in a strip or as spots of 50 – 100 mL, not exceeding a total volume of 5 – 20 L per hectare. The treatment area shall be determined as the area within the perimeter of the bait spray treatment.

The perimeter bait spray program must continue until -



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- (a) the completion of harvest of all fruit for certification from the source property; or
- (b) the block has all fruit removed; or
- (c) the block has been removed (for example, plants slashed off or ploughed out); or
- (d) **10 August**, when the pre-harvest cover spray program must have already commenced.

**If the pre-harvest cover spray program includes the use of spinetoram, then the perimeter bait spray program must also continue to be applied.**

Pre-harvest bait sprays must be reapplied after a rain event where there has been sufficient rain to cause run-off from the leaves. Where prolonged periods of rainfall inhibit the application of sprays, pre-harvest bait sprays must be reapplied immediately following the rainfall event.

***Pre-Harvest Cover Spray***

The pre-harvest **cover spray** program shall commence prior to 10 August, to allow for certification of strawberries from 10 August, and consist of either -

- (a) A trichlorfon mixture applied in a high volume application containing 250 mL of a 500 g/L product per 100 L of spray mixture; or
- (b) A maldison mixture applied in a high volume application containing:
  - 140-230 mL of a 440 g/L product per 100 L water; or
- (c) A spinetoram mixture applied in a high volume spray containing 40 mL of a 120 g/L product per 100 L of spray mixture, applied at a maximum rate of 400 mL of concentrate per hectare of plants, **in conjunction with a continued perimeter bait spray program.**

The cover spray program must be continued until completion of harvest of all fruit for certification from the source property.

Pre-harvest cover sprays must be reapplied if rain sufficient to cause run-off from the leaves occurs within two hours of spraying. Where prolonged periods of rainfall inhibit the application of sprays, pre-harvest cover sprays must be reapplied immediately following the rainfall event.

***Spray Mixture Preparation***

The Spray Operator shall prepare the chemical mixture within 24 hours of application, or more frequently as required.

Using a clean graduated measuring vessel, measure the required amount of product for the required volume of water.

Suitable measuring vessels include graduated plastic or glass measuring cylinders.

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For Naturalure™ bait spray, first add water (a volume equivalent to the volume of Naturalure™ concentrate to be mixed) to the tank and start the agitation system. Then add the full amount of Naturalure™ concentrate followed by the remaining amount of water. Allow the agitation system to operate for at least five minutes before applying the mixture. Once mixed, constant agitation of the spray solution is recommended to ensure uniformity of spray mixture. Once prepared, the spray solution shall be used within 24 hours.

For Maldison bait spray mixtures, add the required amount of concentrate to the spray tank in accordance with the manufacturer's directions on the label. Repeat this process for the yeast autolysate. Fill the spray tank with clean water to the incremental volume mark or maximum mixture level mark. Ensure that the chemicals are completely diluted in all of the water by mixing the tank for a minimum of two minutes before commencing the spray operation. Some equipment may require extended periods of mixing to fully dilute the chemical and yeast autolysate in the water.

For the cover spray treatments, measure the required amount of concentrate for the required volume of mixture. Add the concentrate to the spray tank in accordance with the manufacturer's directions on the label. Fill the spray supply tank with clean water to the incremental volume mark or maximum mixture level mark. Ensure that the chemical is completely diluted in all of the water by mixing the tank for a minimum of two minutes before commencing the spray operation. Some equipment may require extended periods of mixing to fully dilute the chemical in the water.

Spray equipment, other than hand held equipment such as knapsack or backpack sprayers, must have a means of continuous agitation of the spray mixture in the spray tank throughout the spray operation to avoid settling or separation of the product. This can be achieved by mechanical mixing devices in the spray tank, or agitation from spray mixture returned via a by-pass from the spray pump. Businesses should seek advice from their treatment equipment manufacturer to ensure there is adequate agitation of the treatment mixture.

***The cover spray mixture may contain a fungicide or other chemical provided it is approved for use and known to be compatible with the insecticide concentrate being used.***

***Spray Equipment Maintenance***

The Spray Operator shall carry out regular checks of spraying equipment to ensure it continues to operate effectively and remains free from malfunction, blockages, damage or excessive wear.

***Spray Mixture Preparation and Treatment Records***

The Spray Operator must record details of all bait spray and cover spray mixture preparation and treatments using a *Spray Mixture Preparation and Treatment Record* [CAF-168] (refer [Attachment 12](#)) or record which captures the same information.

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The Business's spray mixture preparation and treatment records must identify -

- (a) the date of spray mixture preparation;
- (b) the time of spray mixture preparation;
- (c) the total volume (litres) of the made up spray mixture;
- (d) volume of product used (litres) in the spray mixture;
- (e) the trade name of the concentrate used;
- (f) the date of application;
- (g) the spray equipment used;
- (h) the block/s treated;
- (i) the area sprayed (Ha);
- (j) the name and signature of the Spray Operator.

## 7.5 Field Hygiene

All strawberries certified under this Operational Procedure must have been grown in blocks that have been maintained under a field hygiene program.

The Field Hygiene Officer shall ensure that the field hygiene program is maintained and consists of –

- (a) **during the harvest period**, any strawberries that are split, discoloured, deformed or deteriorated shall be placed in reject bins or other containers which are clearly identified to prevent mixing with conforming strawberries. These **nonconforming** strawberries shall be **disposed** of by either:
  - consigning to non-quarantine markets; or
  - an agreed destruction method such as deep burial or removal by a commercial waste operator; and
- (b) any abandoned or spent strawberry block must either:
  - receive a chemical cover spray treatment, which includes a combination of insecticides and herbicides; or
  - have all fruit removed from the block;within four (4) days of ceasing harvest from that block.

### 7.5.1 Field Hygiene Records

The Field Hygiene Officer must record details of the field hygiene program in place for each strawberry block. These records shall be in the form of a *Field Hygiene Program Record* [CAF-169] (refer [Attachment 13](#)) or records which capture the same information.

The field hygiene program records must include –

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- (a) the date of commencement of harvest from the block;
- (b) the Block Reference Code or Number identification;
- (c) the method of disposal of nonconforming fruit;
- (d) the date of disposal;
- (e) the date of final harvest from the block;
- (f) the date of chemical cover spray or total fruit removal from the block;
- (g) the name and signature of the Field Hygiene Officer.

## **7.6 Harvesting**

The Certification Controller shall oversee the harvest process to ensure only conforming strawberries are harvested for certification under this Operational Procedure.

Pickers shall remain alert for evidence of fruit fly infestation in strawberries harvested for certification under this Operational Procedure.

Any fruit with isolated, soft water soaked areas typical of fruit fly stings shall be placed in clearly identified containers used only for suspect fruit (refer [Attachment 14](#)).

Suspect fruit shall be forwarded to the Certification Controller with each load of fruit picked from the field.

### **7.6.1 Identification of Treated and Untreated Strawberries in the Field**

A business which maintains treated and untreated blocks of strawberries shall identify the treatment status of field blocks to prevent mixing of treated and untreated strawberries.

Examples of acceptable methods of identifying treated and untreated blocks include -

- (a) using signs in treated and untreated blocks;
- (b) using colour markers in treated and untreated blocks.

Other methods may be used provided they clearly and accurately identify to pickers the treated and untreated blocks.

### **7.6.2 Identification of Treated and Untreated Strawberries at Harvest**

A business which maintains treated and untreated blocks of strawberries shall identify the treatment status of harvested strawberries to prevent mixing of treated and untreated fruit.

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Examples of acceptable methods of identifying treated and untreated strawberries include -

- (a) using picking boxes which differ in colour for treated and untreated strawberries;
- (b) using picking boxes which differ significantly in appearance for treated and untreated strawberries.

Other methods may be used provided they clearly and accurately identify treated and untreated strawberries.

## 7.7 Harvest Inspection

The Certification Controller shall carry out an inspection of all suspect fruit collected by pickers for infestation by fruit fly each day during the period strawberries are harvested for certification under this Operational Procedure.

Suspect fruit shall be cut across any damaged areas showing symptoms of fruit fly infestation and examined with X10 or greater magnification. This inspection must be performed at an inspection bench with a minimum of 600 lux lighting. The Business must maintain inspection equipment as described in [7.7.1 Inspection Equipment](#).

The presence of moving white larvae in the flesh shall indicate fruit fly infestation (refer [Attachment 15](#)). If suspect fruit fly eggs or larvae are found, the Business can elect to -

- (a) segregate the harvested product and discontinue harvesting fruit remaining in the source block for certification until a negative identification has been received from an approved taxonomist (refer [7.7.3 Fruit Fly Identification](#)); or
- (b) consider the source block as rejected and discontinue harvesting fruit from the source block for certification under this Operational Procedure.

Harvest inspection shall be completed -

- (a) **in the case of a business that is a different business to the packer**, prior to completion of the *Grower Declaration* and delivery to the packer (refer [7.9.1 Receival of Strawberries Grown by Another Business](#));
- (b) **in the case of a business which both grows and packs the fruit**, each day prior to dispatch and certification of strawberries under this Operational Procedure.

***A business which both grows and packs the strawberries for certification under this Operational Procedure can conduct the harvest inspection in conjunction with the final inspection (refer [7.11 Final Inspection](#)).***

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### 7.7.1 Inspection Equipment

Businesses accredited under this Operational Procedure shall maintain the following inspection equipment –

- (a) a designated inspection facility that provides illumination to a minimum of 600 lux;
- (b) a hand lens, microscope or other device that provides at least X10 magnification;
- (c) reference illustrations and photographs for identification of fruit fly (refer [Attachment 14](#) and [Attachment 15](#));
- (d) sealable plastic bags and labels for collecting specimens of infested produce;
- (e) specimen bottles and a fine paint brush for collecting insect specimens;
- (f) methylated spirits;
- (g) a pocket knife or similar to cut produce to further investigate for the presence of fruit fly.

### 7.7.2 Harvest Inspection Records

The Certification Controller shall maintain records of suspect fruit inspections. Suspect fruit inspection records shall be in the form of a *Suspect Fruit Inspection Record* [CAF-170] (refer [Attachment 16](#)) or a record which captures the same information.

Suspect fruit inspection records must include -

- (a) the Interstate Produce (IP) number of the Business that grew/packed the produce;
- (b) the date of inspection;
- (c) the block/s from which the fruit was harvested;
- (d) the number of fruit examined;
- (e) the presence or absence of fruit fly;
- (f) the Certification Controller's name and signature.

### 7.7.3 Fruit Fly Identification

Samples of suspected fruit fly eggs or larvae shall be collected by the Certification Controller and placed in a specimen bottle filled with methylated spirits. Samples shall be labelled with the date of inspection, the Interstate Produce number (IP No.) of the accredited business and the address of the property or the facility number.

Where eggs or live larvae are suspected of being fruit fly, the suspects shall be submitted to an Approved Taxonomist. Samples shall be forwarded with a completed *Fruit Fly Sample Submission Form* [CAF-121] (refer [Attachment 18](#)).

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Taxonomists shall be registered on the DAF Queensland Register of Approved Taxonomists and must meet the following criteria –

- (a) A tertiary qualification in entomology, agricultural science, applied science, or a field relevant to insect taxonomy; and
- (b) Demonstrated experience in fruit fly taxonomy.

**7.7.4 Action Following Identification of Nonconforming Product at Harvest**

If any strawberry is found to be infested with fruit fly at harvest the Certification Controller shall take the following actions -

- (a) all strawberries harvested from the source block on the day of the detection, including any strawberries which have been packed for certification but which remain on the premises, shall be rejected for certification under this Operational Procedure; and
- (b) all strawberries from the source block shall be rejected for certification under this Operational Procedure until a pre-harvest cover spray treatment of either trichlorfon or maldison has been applied in accordance with the requirements of [7.4.3 Pre-Harvest Bait Spray and Cover Spray Treatment](#); and
- (c) as soon as practical and not more than one (1) working day from the time of the detection, it shall be reported to the Accrediting Authority so an investigation may be carried out to determine the cause and rectify any problems.

**7.7.5 Rejected Product**

All harvested product that is rejected for live fruit fly shall be isolated and clearly identified to prevent mixing with conforming product.

Rejected product shall be either -

- (a) treated and certified in accordance with an alternative quarantine entry condition; or
- (b) consigned to markets that do not require certification of pre-harvest field control and inspection for fruit fly.

**7.8 Grower Declaration**

A business which grows strawberries and applies pre-harvest field control for packing and certification by another business must be accredited under Part A of this Operational Procedure.

The accredited business shall provide a *Grower Declaration* [CAF-171] (refer [Attachment 17](#)) with each delivery of strawberries supplied to the packing business for certification.

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***A grower declaration is not required where the Business that grows the strawberries subject to the pre-harvest field control programs is the same business that packs, inspects and certifies the strawberries under this Operational Procedure.***

The *Grower Declaration* must identify -

- (a) the name and Interstate Produce (IP) Number of the accredited business that grew the strawberries;
- (b) a statement that the Business is accredited for Part A of this Operational Procedure;
- (c) the Block Reference Code or Number identification of the source block/s;
- (d) the number and type of containers of fruit supplied from that block on that day;
- (e) the identifier on the packages;
- (f) the date and type of the last pre-harvest bait spray or cover spray to the source block;
- (g) the date of the last MAT device placement;
- (h) the date of harvest of the source block;
- (i) confirmation that a field hygiene program has been maintained;
- (j) that the fruit have been inspected at harvest and found free from live fruit fly eggs or larvae;
- (k) the name and signature of the Authorised Signatory from the accredited business supplying the strawberries.



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**PART B** - (Covers the packer activities of fruit receival, grading and packing, inspection and certification)

**7.9 Fruit Receival**

The Certification Controller shall ensure that the treatment status of strawberries is clearly identified at receival at the packing facility to prevent mixing of treated and untreated strawberries.

Any strawberries received which are not clearly identified shall be regarded as untreated for the purpose of this Operational Procedure.

**7.9.1 Receival of Strawberries Grown by Another Business**

A business which packs strawberries grown by another business shall ensure –

- (a) the treated strawberries are supplied by a grower accredited under Part A of this Operational Procedure;
- (b) each delivery of strawberries supplied by another business for certification under this Operational Procedure is accompanied by a *Grower Declaration* [CAF-171] (refer [Attachment 17](#));
- (c) fruit supplied for certification has undergone a pre-harvest field control program and harvest inspection;
- (d) grower identification details are maintained for all fruit received and certified under this Operational Procedure from receival to certification and dispatch (refer [7.9.2 Fruit Identification](#)).

The Business shall maintain copies of all declarations received from growers whose produce they pack and certify under this Operational Procedure.

**7.9.2 Fruit Identification**

Where the Business packs fruit grown by more than one business, the grower must be identified on each bin from receival until the produce is packed to allow for traceback of any fruit fly infestation detected.

***Additional identification on bins and packed product (refer [7.12.1 Package Identification](#)) to allow fruit to be traced back to a specific block is at the discretion of the Business.***

**7.10 Grading and Packing**

All strawberry fruit graded and packed for certification under this Operational Procedure shall be inspected for evidence of fruit fly infestation during the normal grading and packing process.

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Each piece of fruit shall be examined during the grading and packing process to identify any that have isolated, soft water soaked areas typical of fruit fly stings (refer [Attachment 14](#)). Any nonconforming fruit shall be placed in clearly identified containers for suspect fruit. The grading and packing process shall be performed in an area with a minimum of 600 lux lighting.

The Certification Controller shall oversee the grading and packing process to ensure only conforming strawberries are packed for certification under this Operational Procedure.

**7.10.1 Identification of Treated and Untreated Strawberries During Grading and Packing**

A business which grades and packs treated and untreated strawberries shall implement systems to identify the status of the fruit during grading and packing to prevent mixing of treated and untreated fruit.

Examples of acceptable methods of identifying and segregating treated and untreated fruit during grading and packing include –

- (a) packing treated fruit at different times to untreated fruit and clearing the lines before changing over; or
- (b) packing treated and untreated fruit on separate packing lines.

Other methods may be used provided they clearly and accurately identify and segregate treated and untreated fruit during the grading and packing process.

**7.10.2 Identification of Treated and Untreated Strawberries After Packing**

A business which grades and packs treated and untreated strawberries shall implement systems to identify the status of the fruit after packing to prevent mixing of treated and untreated fruit.

Examples of acceptable methods of identifying and segregating treated and untreated fruit after packing include –

- (a) using packaging which clearly differs in appearance; or
- (b) marking each package of conforming fruit in a manner that identifies the fruit as meeting the conditions of this Operational Procedure.

Other methods may be used provided they clearly identify and segregate conforming and nonconforming fruit.

**7.11 Final Inspection**

The Certification Controller shall carry out an inspection of all suspect fruit collected by graders and packers for infestation by fruit fly each day during the period strawberries are packed and certified under this Operational Procedure.

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Suspect fruit shall be cut across any damaged areas showing symptoms of fruit fly infestation and examined with X10 or greater magnification. This inspection must be performed at an inspection bench with a minimum of 600 lux lighting.

The presence of moving white larvae in the flesh shall indicate fruit fly infestation (refer [Attachment 15](#)). If suspect fruit fly eggs or larvae are found, no certification of the harvested product or fruit remaining in the source block can occur until a negative identification has been received from an approved taxonomist. Refer to [7.11.3 Fruit Fly Identification](#) for the process of collecting and submitting samples for identification.

Final inspection shall be completed each day prior to dispatch and certification of strawberries under this Operational Procedure.

***A business which both grows and packs the strawberries for certification under this Operational Procedure can conduct the harvest inspection in conjunction with the final inspection (refer [7.7 Harvest Inspection](#)).***

#### **7.11.1 Inspection Equipment**

Businesses accredited under this Operational Procedure shall maintain the following inspection equipment –

- (a) a designated inspection facility that provides illumination to a minimum of 600 lux;
- (b) a hand lens, microscope or other device that provides at least X10 magnification;
- (c) reference illustrations and photographs for identification of fruit fly (refer [Attachment 14](#) and [Attachment 15](#));
- (d) sealable plastic bags and labels for collecting specimens of infested produce;
- (e) specimen bottles and a fine paint brush for collecting insect specimens;
- (f) methylated spirits;
- (g) a pocket knife or similar to cut produce to further investigate for the presence of fruit fly.

#### **7.11.2 Final Inspection Records**

The Certification Controller shall maintain records of suspect fruit inspection.

Suspect fruit inspection records shall be in the form of a *Suspect Fruit Inspection Record* [CAF-170] (refer [Attachment 16](#)) or a record which captures the same information.

Suspect fruit inspection records must include -

- (a) the Interstate Produce (IP) number of the Business that grew/packed the produce;

PRE-HARVEST FIELD CONTROL AND INSPECTION OF  
STRAWBERRIES

- (b) the date of inspection;
- (c) the block/s from which the fruit was harvested;
- (d) the number of fruit examined;
- (e) the presence or absence of fruit fly;
- (f) the Certification Controller's name and signature.

### 7.11.3 Fruit Fly Identification

Samples of suspected fruit fly eggs or larvae shall be collected by the Certification Controller and placed in a specimen bottle filled with methylated spirits. Samples shall be labelled with the date of inspection, the Interstate Produce number (IP No.) of the accredited business and the address of the property or the facility number.

Where eggs or live larvae are suspected of being fruit fly, the suspects shall be submitted to an Approved Taxonomist. Samples shall be forwarded with a completed *Fruit Fly Sample Submission Form* [CAF-121] (refer [Attachment 18](#)).

Taxonomists shall be registered on the DAF Queensland Register of Approved Taxonomists and must meet the following criteria –

- (a) a tertiary qualification in entomology, agricultural science, applied science, or a field relevant to insect taxonomy; and
- (b) demonstrated experience in fruit fly taxonomy.

### 7.11.4 Action Following Identification of Nonconforming Packed Product

If any strawberry is found to be infested with live fruit fly, all the following actions shall be taken –

- (a) **all** fruit harvested from the **source block/s**, including any fruit which has been packed for certification but which remains at the facility shall be **rejected for certification** under this Operational Procedure. If the Business is unable to identify the source block for the strawberries infested with fruit fly, all strawberries from the source property shall be rejected for certification, including product that is already harvested and packed; **and**
- (b) all fruit from the identified source block shall be rejected for certification under this Operational Procedure until a pre-harvest cover spray treatment of either trichlorfon or maldison has been applied in accordance with the requirements of [7.4.3 Pre-Harvest Bait Spray and Cover Spray Treatment](#); **and**
- (c) as soon as practical and not more than one (1) working day from the time of the detection, the detection shall be reported to the Accrediting Authority so an investigation may be carried out to determine the cause and rectify any problems.

PRE-HARVEST FIELD CONTROL AND INSPECTION OF  
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### 7.11.5 Rejected Product

All rejected packages shall be isolated and clearly identified to prevent mixing with conforming packages.

Packages rejected for live fruit fly eggs or larvae must be –

- (a) treated and certified in accordance with an alternative post-harvest quarantine entry condition; or
- (b) consigned to markets that do not require certification of pre-harvest field control and inspection for fruit fly.

### 7.12 Post Treatment Security (Tasmania only)

Packing shall commence as soon as practicable after grading and inspection.

Fruit shall be held for the minimum practical period after grading and packing before it must be secured against reinfestation.

Any fruit which is stored after grading and packing and prior to dispatch must be held under secure conditions.

Any fruit which remains unpacked at the end of the day must be held in secure conditions until packed.

Completed pallets shall be held for the minimum practical period before placing in secure conditions.

Certified fruit must be stored at and transported from the facility in secure conditions which prevent infestation by fruit fly.

Secure conditions include -

- (a) unvented packages;
- (b) vented packages with the vents secured with gauze/mesh with a maximum aperture of 1.6mm;
- (c) fully enclosed under tarpaulins, hessian, shade cloth, mesh or other covering which provides a maximum aperture of 1.6mm;
- (d) shrinkwrapped and sealed as a palletised unit;
- (e) fully enclosed or screened buildings, coldrooms, vehicles or other facilities free from gaps or other entry points greater than 1.6mm.

***Fruit consigned to Tasmania must be transported in full container lots sealed prior to transport, or as lesser container lots in accordance with the requirements of (a), (b) or (d) above.***

**PRE-HARVEST FIELD CONTROL AND INSPECTION OF  
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***Where consignments are transported to Tasmania as full container lots, the seal number must be included in the Brand Name or Identifying Marks section of the Assurance Certificate covering the consignment ([refer Attachment 2](#)).***

***Where consignments are transported in vented packages that are sealed as a palletised unit in accordance with (d) above, the Business must secure the top layer of the pallet by applying a row of tape over the shrinkwrap and have applied to the tape in waterproof ink the signature of an Authorised Signatory, the number of the Plant Health Assurance Certificate covering the consignment and the date.***

The Business shall have adequate procedures in place which prevent mixing of treated and untreated fruit at the facility.

## **7.13 Dispatch**

### **7.13.1 Package Identification**

The Authorised Dispatcher shall ensure that, after grading and packing, each conforming package is marked in indelible and legible characters of at least 5 mm, with -

- (a) the Interstate Produce (IP) number of the accredited business that packed the strawberries;
- (b) the words “MEETS ICA-34”;
- (c) the date (or date code) on which the strawberries were packed; and
- (d) the Interstate Produce (IP) number of the grower of the strawberries where the grower is a different business to the packer;

prior to the issuance of an Assurance Certificate by the Business under this Operational Procedure.

Where the packer uses a different identifier to the IP number of the grower, the packer must maintain a Grower Identification Record that matches the grower identifiers used with the grower's name or IP number so the grower can be easily identified if required.

**Any packages containing fruit that has not been subjected to a pre-harvest field control program and inspected in accordance with the requirements of this Operational Procedure shall not be marked as stated above.**

### **7.13.2 Assurance Certificates**

The Authorised Dispatcher shall ensure an Assurance Certificate is completed and signed by an Authorised Signatory of the Business prior to dispatch of the consignment from the facility to a market requiring certification of pre-harvest field control and inspection of strawberries for fruit fly.

**PRE-HARVEST FIELD CONTROL AND INSPECTION OF  
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Assurance Certificates shall be in the form of a *Plant Health Assurance Certificate* [CAF-16].

Assurance Certificates shall include -

- (a) in the “Accredited Business that Prepared the Produce” section -
  - the name and address of the Accredited Business that packed the strawberries;
- (b) in the “Grower or Packer” section -
  - the name and address of the Accredited Business that was responsible for **pre-harvest field control program** of the strawberries. Where the consignment contains fruit grown by a number of growers the word “VARIOUS” shall be used;
- (c) in the “IP No. of Acc. Business” section -
  - the IP No. of the Accredited Business that **packed** the strawberries;
- (d) in the “Treatment” section -

the **pre-harvest bait spraying** details including:

- in the Date column, the **most recent date** or dates of pre-harvest perimeter bait spraying of the source block/s;
- in the Treatment column, the words “Bait Spray”;
- in the Chemical (Active Ingredient) column, the concentration and name of the active ingredient in the concentrate used (e.g. “440 g/L Maldison”);
- in the Concentration column, the mixing rate of the concentrate in the bait mixture (e.g. “at 700 mL/100 L”); and
- in the Duration and Temperature column indicate the type of application (for example, “strip spray”);

or

the **pre-harvest cover spraying** details including:

- in the Date column, the **most recent date** or dates of pre-harvest cover spraying of the source block/s;
- in the Treatment column, the words “Cover Spray”;
- in the Chemical (Active Ingredient) column, the concentration and name of the active ingredient in the concentrate used (e.g. “440 g/L maldison”); and
- in the Concentration column, the mixing rate of the concentrate in the spray mixture (e.g. “at 1.4 mL/L”).

- (e) in the “Additional Certification” section the words -
  - **“Meets ICA-34”**

A completed example is shown as [Attachment 2](#).

Individual Assurance Certificates shall be issued to cover each consignment (i.e. a discrete quantity of product transported to a single consignee at one time) to avoid splitting of consignments.



**PRE-HARVEST FIELD CONTROL AND INSPECTION OF  
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Assurance Certificates shall be completed, issued and distributed in accordance with the Work Instruction *Guidelines for Completion of Plant Health Assurance Certificates* [ICA-WI-02].

**7.13.3 Assurance Certificate Distribution**

The **original** (yellow copy) must accompany the consignment.

The **duplicate** (white copy) copy must be retained by the Business.

**7.14 ICA System Records**

The Business shall maintain the following records -

**PART A**

- (a) Property Plan for each property (refer [7.2](#));
- (b) Male Annihilation Technique Program Record (refer [7.3.3](#));
- (c) Chemical Mixture Tank Calibration Certificate (refer [7.4.1](#));
- (d) Bait Spray Equipment Calibration Test Record (refer [7.4.1](#));
- (e) Bait Spray Mixture Preparation Chart (refer [7.4.2](#));
- (f) Cover Spray Equipment Calibration Test Record (if applicable) (refer [7.4.1](#));
- (g) Cover Spray Mixture Preparation Chart (refer [7.4.2](#));
- (h) Spray Mixture Preparation and Treatment Record (refer [7.4.3](#));
- (i) Field Hygiene Program Record (refer [7.5.1](#));
- (j) Suspect Fruit Inspection Record (refer [7.7.2](#));
- (k) Fruit Fly Sample Submission Form (refer [7.7.3](#));
- (l) Grower Declaration (if applicable) (refer [7.8](#));

**PART B**

- (a) a copy of each Grower Declaration received (if applicable) (refer [7.9.1](#));
- (b) Suspect Fruit Inspection Record (refer [7.11.2](#));
- (c) Fruit Fly Sample Submission Form (refer [7.11.3](#));
- (d) Grower Identification Record (if applicable) (refer [7.12.1](#));
- (e) a copy of each *Plant Health Assurance Certificate* [CAF-16] issued by the Business (refer [7.12.2](#)).

ICA system records shall be retained for a period of at least 12 months from completion, or until the next compliance audit of the ICA arrangement, whichever is the later.



## PRE-HARVEST FIELD CONTROL AND INSPECTION OF STRAWBERRIES

***An accredited business must hold a minimum of 12 months ICA system records at the time of any compliance audit. If the compliance audit is conducted more than 12 months from the last compliance audit, the Business must maintain all records completed since the previous compliance audit.***

ICA system records shall be made available on request by an Inspector.

### 7.15 ICA System Documentation

The Business shall maintain the following documentation -

- (a) a copy of the Business's current *Application for Accreditation* [CAF-47] (refer [Attachment 1](#));
- (b) a current copy of this Operational Procedure;
- (c) a current *Certificate of Accreditation for an Interstate Certification Assurance (ICA) Arrangement*;
- (d) a current copy of the *Work Instruction Guidelines for Completion of Plant Health Assurance Certificates* [ICA-WI-02].

ICA system documentation shall be made available on request by an Inspector.

## 8. ATTACHMENTS

<a href="#">Attachment 1</a>	<i>Application for Accreditation of a Business for an Interstate Certification Assurance (ICA) Arrangement</i>	CAF-47 <b>(FRONT 2 PAGES)</b>
<a href="#">Attachment 2</a>	<i>Plant Health Assurance Certificate</i>	CAF-16 <b>(COMPLETED EXAMPLE)</b>
<a href="#">Attachment 3</a>	Property Plan	CAF-162 <b>(BLANK)</b>
<a href="#">Attachment 4</a>	Male Annihilation Technique Program Record	CAF-163 <b>(BLANK)</b>
<a href="#">Attachment 5</a>	<i>Chemical Mixture Tank Calibration Certificate</i>	CAF-03 <b>(BLANK)</b>
<a href="#">Attachment 6</a>	Bait Spray Equipment Calibration Test Record	CAF-164 <b>(BLANK)</b>
<a href="#">Attachment 7</a>	Cover Spray Equipment Calibration Test Record	CAF165 <b>(BLANK)</b>
<a href="#">Attachment 8</a>	Bait Spray Mixture Preparation Chart	CAF-166 <b>(BLANK)</b>

**PRE-HARVEST FIELD CONTROL AND INSPECTION OF  
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<a href="#">Attachment 9</a>	Bait Spray Mixture Preparation Chart	CAF-166 <b>(COMPLETED EXAMPLE)</b>
<a href="#">Attachment 10</a>	Cover Spray Mixture Preparation Chart	CAF-167 <b>(BLANK)</b>
<a href="#">Attachment 11</a>	Cover Spray Mixture Preparation Chart	CAF-167 <b>(COMPLETED EXAMPLE)</b>
<a href="#">Attachment 12</a>	Spray Mixture Preparation and Treatment Record	CAF-168 <b>(BLANK)</b>
<a href="#">Attachment 13</a>	Field Hygiene Program Record	CAF-169 <b>(BLANK)</b>
<a href="#">Attachment 14</a>	Queensland Fruit Fly in Strawberries	
<a href="#">Attachment 15</a>	Identification of Fruit Flies and Other Common Flies on Fruit and Vegetables	
<a href="#">Attachment 16</a>	Suspect Fruit Inspection Record	CAF-170 <b>(BLANK)</b>
<a href="#">Attachment 17</a>	Grower Declaration	CAF-171 <b>(BLANK)</b>
<a href="#">Attachment 18</a>	Fruit Fly Sample Submission Form	CAF-121 <b>(BLANK)</b>

## Application for accreditation of an accredited certifier for an Interstate Certification Assurance (ICA) arrangement

Pursuant to section 420 of the *Biosecurity Act 2014*

**OFFICE USE ONLY**

DATE RECEIVED:
FMS NUMBER:
DATE APPROVED OR REFUSED:
FURTHER INFORMATION REQUEST DATE:
DATE FURTHER INFORMATION RECEIVED:
PAYMENT PROCESSED DATE:
PAYMENT AMOUNT RECEIVED:
RECEIPT NUMBER:

**Important Information for applicants**

This form is to be used to apply as an accredited certifier for an Interstate Certification Assurance (ICA) arrangement.

Information requested will enable your application to be processed as prescribed by the *Biosecurity Act 2014*. Your application must be assessed and granted by the chief executive before you can proceed with the proposed activity.

Before lodging this application you should be familiar with the requirements of the *Biosecurity Act 2014* available on the Office of the Queensland Parliamentary Counsel website [www.legislation.qld.gov.au](http://www.legislation.qld.gov.au).

**How to complete form for a new application**

- Must complete entire form.

**How to complete form for an amendment or renewal**

- Update any areas that require amendments;
- Must complete part A section 1, part B sections 2-4 and part C.

**How to submit this form**

- In person to:  
Any [Department of Agriculture and Fisheries regional office](#); or
- Via post to:  
Department of Agriculture and Fisheries  
PO Box 5083  
Nambour Qld 4560

**Prescribed fee**

- For the current fees visit [www.daf.qld.gov.au/biosecurity-fees](http://www.daf.qld.gov.au/biosecurity-fees)
- Fees are applicable until the end of the financial year.
- The prescribed fee must be paid at the time the application is submitted for it to be processed.

**Term of accreditation**

The term of this accreditation shall be one (1) year unless sooner cancelled or suspended from the date of your application being approved.

**Notification**

The applicant will be notified of the outcome within thirty (30) days of receipt of the application. The applicant will be notified by post to the applicant's postal address.

The application is deemed to have been received when the [District Co-ordinator \(Certification and Accreditation Services\)](#) in your district is in receipt of an accurate and complete application and payment of the prescribed fee has been received, processed and cleared.

**Contact us**

For more information please contact the District Co-ordinator (Certification and Accreditation Services), Plant Biosecurity & Product Integrity, Biosecurity Queensland, Department of Agriculture and Fisheries in your district or the Department of Agriculture and Fisheries Customer Service Centre on 13 25 23.

**Type of application** (select one only)

☐ New application    ☐ Amendment    ☐ Renewal

**Part A – Accredited certifier application**

**1. Applicant details**

Please supply ACN or ARBN (if applicable)

--	--	--	--	--	--	--	--	--	--

Please supply Interstate Produce Number (IPN) (if known)

Q					
---	--	--	--	--	--

Applicant is: (select one only)

☐ an individual    ☐ a partnership    ☐ an incorporated company    ☐ a co-operative association

☐ other (please specify)

--

If applicant is an individual, please complete the following Supply full legal name including first name, surname and any other names.

First name

Last name

--

--

Other name/s

--

If applicant is a partnership, please complete the following Supply the full legal name of each partner in their normal order.

First name

Last name

--

--

First name

Last name

--

--

First name

Last name

--

--

If applicant is an incorporated company, co-operative association or other type of legal entity, please complete the following

Supply the full legal name.

--

Trading name/s of the applicant Supply any business names or brand names used by the applicant on packages of certified items.

--

**2. Address details**

Street address

--

Suburb/Town/Locality

Country

State

Postcode

--

--

--

--

Postal address (if different to street address)

--

Suburb/Town/Locality

Country

State

Postcode

--

--

--

--

**3. Contact details**

Phone

Fax (if applicable)

Mobile (if applicable)

--

--

--

E-mail address

--

Preferred method of contact

☐ Any    ☐ E-mail    ☐ Phone    ☐ Mail

# Plant Health Assurance Certificate

Pursuant to Sections 412 and 413 of the Biosecurity Act 2014  
(Means a biosecurity certificate issued in accordance with Chapter 15 of the Biosecurity Act 2014.)

## Consignment Details (Please print)

Certificate Number **9999999**

Consignor

Name <b>John's Strawberries Pty Ltd</b>
Address <b>Plantation Road</b>
<b>Beerwah QLD 4519</b>

Consignee

Name <b>Strawberry Agents</b>
Address <b>South Australian Produce Market.</b>
<b>Burma Road, Poorooka SA 5095</b>

Reconsigned To (Splitting consignments or reconsigning whole consignments) Method of Transport (Provide details where known)

Name	<input checked="" type="checkbox"/> Road Truck/Trailer Registration
Address	<input type="checkbox"/> Rail Consignment
	<input type="checkbox"/> Air Airline/Flight no.
	<input type="checkbox"/> Sea Vessel Name & Voyage no.

## Certification Details (Please print)

Accredited Certifier Carrier of Biosecurity Matter

Grower or Packer

Name <b>John's Strawberries Pty Ltd</b>
Address <b>Plantation Road</b>
<b>Beerwah QLD 4519</b>

Name <b>G&amp;R Grower</b>
Address <b>Farm Road</b>
<b>Beerwah QLD 4519</b>

IP No. of Acc. Certifier Brand Name or Identifying Marks (as marked on packages) Date Code (as marked on packages)

<b>Q 9999</b>	<b>John's Strawberries</b>	<b>17/07/2020</b>
---------------	----------------------------	-------------------

Facility No.	Procedure Code	Expiry Date	Facility No.	Procedure Code	Expiry Date
<b>01</b>	<b>ICA-34</b>	<b>1/08/20</b>			/ /

Number of Packages	Type of Packages (e.g. trays, cartons)	Type of Carrier of Biosecurity Matter	Authorisation for Split Consignment
<b>2000</b>	<b>Trays</b>	<b>Strawberries</b>	
<hr/>			
<hr/>			
<hr/>			

Date	Treatment	Chemical (Active Ingredient)	Concentration	Duration and Temperature
/ /	<input type="checkbox"/> Dipping	Dimethoate	400ppm	<input type="checkbox"/> One min. <input type="checkbox"/> 10 sec. then wet for 60 sec.
/ /	<input type="checkbox"/> Flood Spraying	Dimethoate	400ppm	10 seconds then wet for 60 seconds
/ /	<input type="checkbox"/> Fumigation	Methyl Bromide	g/m <sup>3</sup>	Two hours @ °C
/ /	<input type="checkbox"/> Grown and packed on a property free from red imported fire ant			
/ /	<input type="checkbox"/> Sourced from a property located more than 5km from a known infestation of red imported fire ant			
/ /	<input type="checkbox"/> Mature green condition at packing			
/ /	<input type="checkbox"/> Bananas in a hard green condition with unbroken skin			
/ /	<input type="checkbox"/> Inspected and found free of melon thrips			
<b>14 / 07 / 20</b>	<b>Bait Spray 0.24 g/L Spinosad at 40 L/100L Concentrate spot spray</b>			

Additional Certification

<b>Meets ICA-34</b>
<hr/>

## Declaration

I, an Authorised Signatory of the accredited certifier that prepared the Carrier of Biosecurity Matter described above, hereby declare that the Carrier of Biosecurity Matter have been prepared in the accredited certifier's approved facilities in accordance with the accreditation(s) granted to the accredited certifier under the Biosecurity Act 2014 and that the details shown above are true and correct in every particular.

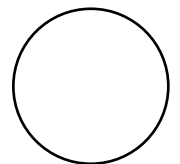
Authorised Signatory's Name (Please print)

Signature

Date

<b>Arthur John Signatory</b>	<i>Art Signatory</i>	<b>17 / 07 / 20</b>
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# PROPERTY PLAN



INDICATE NORTH

# PROPERTY PLAN

## PROPERTY PLAN DETAILS

The property plan (overleaf) is to include the following-

1. the location of blocks on which strawberries are grown;
2. the Block Reference Code or Number used to identify each block identified on the plan;
3. road access including street name/s;
4. internal roadways within the property;
5. the location and identification of buildings on the property (house, packing shed, equipment sheds etc).

### COMPLETE THE FOLLOWING DETAILS FOR EACH BLOCK SHOWN ON THE PROPERTY PLAN

Block Reference Code or No.	Name Used on Farm for the Block	Area of Block (Ha)	Fruit to be Certified?
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO
			YES/NO

## ARRANGEMENT DETAILS

Applicant's Name (as shown on the application form)

Street Address of Facility (as shown on the application form)

Postcode

## SCOPE OF ARRANGEMENT

Application is made for accreditation under Part A of ICA-34 *Pre-Harvest Field Control and Inspection of Strawberries* for the following -

**Chemical/s to be covered** (☒ one or more boxes as applicable) –

☐

Naturalure™

☐

Maldison (bait spray)

☐

Spinetoram

☐

Trichlorfon

☐

Maldison (cover spray)

I ..... (full printed name) the

..... (position in business) am authorised to sign on behalf of the business and I understand that-

- (a) accreditation will only be granted for the scope outlined above;
- (b) following accreditation, certification can only be issued in accordance with scope of accreditation detailed in the *Certificate of Accreditation for an Interstate Certification Assurance (ICA) Arrangement* covering the arrangement;
- (c) application must be made to amend any of the current details in the *Application for Accreditation of a Business for an Interstate Certification Assurance Arrangement* [CAF-47] or this Property Plan.

.....

Signature

/ /

Date

# MALE ANNIHILATION TECHNIQUE PROGRAM RECORD

Source Property Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Interstate Produce (IP) No.    Q

--	--	--	--

Source Property Perimeter Distance: \_\_\_\_\_

Number of MAT Devices Placed: \_\_\_\_\_

Type of Placement (Artificial / Vegetation): \_\_\_\_\_

Date of Device Placement / Renewal	Proposed Date of Next Renewal	Spray Operator's Name	Spray Operator's Signature
1.			
2.			
3.			
4.			



# CHEMICAL MIXTURE TANK CALIBRATION CERTIFICATE

## EQUIPMENT CALIBRATED

Name and Address of  
Owner of Equipment:

Type of equipment  
(e.g. boom spray, mister):

Brand:

Model:

Serial No.:

Other Identification:

## TESTING DETAILS

Name and Address of the  
Business Conducting the  
Test:

Date of Testing:

Type of Flow Meter Used:  
Date of Latest Calibration  
of Flow Meter:

## CALIBRATION RESULTS

Maximum Mixture Level Volume (litres)

Incremental Volumes (litres)  
(as marked on the spray tank):

## CERTIFICATION

The spray mixture tank on the equipment described above has been calibrated in the normal filling position using a calibrated flow meter. Volume indicator marks have been clearly marked on the tank with the volume in litres required to fill the tank to that level.

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Signature

\_\_\_\_ / \_\_\_\_ / \_\_\_\_  
Date

# BAIT SPRAY EQUIPMENT CALIBRATION TEST RECORD

**Brand and Model Unit:**

Block Reference Code or No.	Planting Date	Date of Test	Area of Block (Ha)	Perimeter Distance of Block (metres)	Time Required to Discharge 100 mL (seconds)	Application Rate (volume/ distance)	Testing Officer's Name	Testing Officer's Signature
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						
	/ /	/ /						

## NOTE

1. Bait Spray Equipment Calibration tests must be carried out prior to commencement of the season each year and again within four weeks after the commencement of treatment.
2. Use clean water in the equipment to avoid exposure to chemicals.
3. Record the time taken to discharge 100 mL of water at normal operating conditions.
4. Naturalure™ applied at 1 L concentrate per hectare (or 7.5 L spray mixture per hectare).
5. Maldison application must not exceed 15 – 20 L total volume per hectare.
6. Spraying calculations can be done as volume per distance –  $\text{Area Block (Ha)} \times \text{Vol. Spray Mixture} / \text{Ha} = \text{Total Vol. Spray Mixture to be applied around Perimeter Distance.}$

## COVER SPRAY EQUIPMENT CALIBRATION TEST RECORD

Date of Test	No. of Nozzles	Output for Individual Nozzles (Litres/minute/nozzle)	Effective Spray Width (metres)	Calibration Run (metres)	Litres Used in Run	Application Rate (L/ha)	Testing Officer's Name
/ /							
/ /							
/ /							
/ /							
/ /							
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/ /							
/ /							

### NOTES

1. Pre-Harvest Spray Equipment Calibration Tests must be carried out prior to commencement of treatment each year and again within four weeks after the commencement of treatment.
2. Check the output from each nozzle to ensure uniformity. Replace any having > 10% variation.
3. Measure effective spray width. For example, sum of width of beds covered by the boom.
4. Work out the distance for a calibration run covering 100 m<sup>2</sup> ( $100 \div \text{effective spray width determined in step \#3} = \text{calibration run distance in metres}$ ).
5. With a known volume of water, spray the test area at normal operating speed. Measure the volume of water required to refill the tank to the same level as when starting the test.
6. Multiply the amount from step #5 above by 100 to get the number of litres per hectare that your sprayer will apply.

# BAIT SPRAY MIXTURE PREPARATION CHART

Spray Unit \_\_\_\_\_

Tractor \_\_\_\_\_

Operating Gear \_\_\_\_\_ Engine RPM \_\_\_\_\_

Application Rate - applies \_\_\_\_\_ mL in \_\_\_\_\_ seconds

Application Rate - \_\_\_\_\_

Concentrate (*Trade Name*) \_\_\_\_\_

Concentrate Mixing Rate \_\_\_\_\_ mL/litre of mixture

## Full Tank

Full Spray Tank Volume = \_\_\_\_\_ Litres

Volume of Concentrate = \_\_\_\_\_ Litres

## Part Fill

\_\_\_\_\_ L Concentrate / \_\_\_\_\_ Litres Mixture

\_\_\_\_\_ L Concentrate / \_\_\_\_\_ Litres Mixture

\_\_\_\_\_ L Concentrate / \_\_\_\_\_ Litres Mixture

\_\_\_\_\_ L Concentrate / \_\_\_\_\_ Litres Mixture

Prepared by: \_\_\_\_\_ / /  
Printed Name Signature Date

# BAIT SPRAY MIXTURE PREPARATION CHART

Spray Unit Silvan 400

Tractor Ford 5000

Operating Gear 2 (high) Engine RPM 2,500

Application Rate - applies 20 mL in 5 seconds

Application Rate - Strip Spray

Concentrate (Trade Name) Naturalure

Concentrate Mixing Rate 133 mL/litre of mixture

## Full Tank

Full Spray Tank Volume = 400 Litres

Volume of Concentrate = 160 Litres

## Part Fill

80 L Concentrate / 200 Litres Mixture

40 L Concentrate / 100 Litres Mixture

20 L Concentrate / 50 Litres Mixture

           L Concentrate /            Litres Mixture

Prepared by: S Operator S Operator 15/02/20  
Printed Name Signature Date

# COVER SPRAY MIXTURE PREPARATION CHART

Spray Unit \_\_\_\_\_

Tractor \_\_\_\_\_

Operating Gear \_\_\_\_\_ Engine RPM \_\_\_\_\_

Concentrate (*Trade Name*) \_\_\_\_\_

Active Ingredient \_\_\_\_\_ Conc. \_\_\_\_\_ g/L

Mixture Application Rate (*if Applic*) \_\_\_\_\_ L/Ha

Concentrate Mixing Rate \_\_\_\_\_ mL/L of mixture

## Full Tank

Full Spray Tank Volume = \_\_\_\_\_ Litres

Volume of Concentrate = \_\_\_\_\_ millilitres

## Part Fill

\_\_\_\_\_ mL Concentrate / \_\_\_\_\_ Litres Mixture

\_\_\_\_\_ mL Concentrate / \_\_\_\_\_ Litres Mixture

\_\_\_\_\_ mL Concentrate / \_\_\_\_\_ Litres Mixture

Prepared by: \_\_\_\_\_ / /  
Printed Name Signature Date

# COVER SPRAY MIXTURE PREPARATION CHART

Spray Unit Hardi Mini-Variant 600

Tractor Ford 5000

Operating Gear 3 (high) Engine RPM 2500

Concentrate (Trade Name) Success Neo

Active Ingredient Spinetoram Conc. 120 g/L

Mixture Application Rate (if Applic) 1000 L/Ha

Concentrate Mixing Rate 0.4 mL/L of mixture

## Full Tank

Full Spray Tank Volume = 600 Litres

Volume of Concentrate = 840 millilitres

## Part Fill

140 mL Concentrate / 100 Litres Mixture

420 mL Concentrate / 300 Litres Mixture

560 mL Concentrate / 400 Litres Mixture

Prepared by: S Operator S Operator 15 /02 20  
Printed Name Signature Date

## SPRAY MIXTURE PREPARATION AND TREATMENT RECORD

[illegible]



## FIELD HYGIENE PROGRAM RECORD

[illegible]

# QUEENSLAND FRUIT FLY IN STRAWBERRIES



**Above:** Strawberry showing isolated, soft, water-soaked area typical of fruit fly infestation



**Above:** Cutaway of water-soaked area showing large well developed larvae of Queensland fruit fly



**Left:** Infested strawberry with large well developed larvae placed on the fruit surface




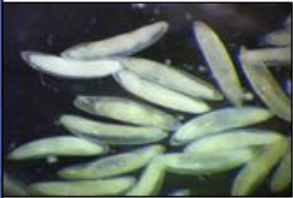
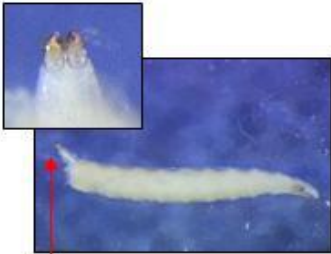
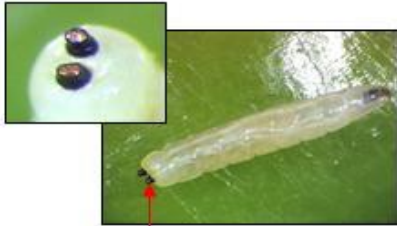
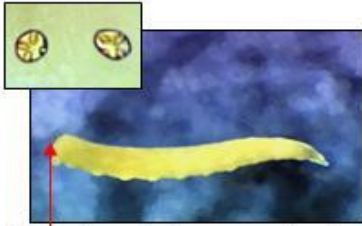
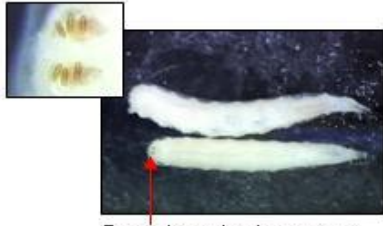










**Above:** Magnified section showing larvae of Queensland fruit fly



**Left:** Adult Queensland fruit fly

# IDENTIFICATION OF FRUIT FLIES AND OTHER COMMON FLIES ON FRUIT AND VEGETABLES

	<i>Drosophila</i>	<i>Atherigona</i>	<i>Lamprolonchaea</i>	<i>Bactrocera</i>
<b>Eggs</b>	 Obvious filaments present	 Reticulate pattern on eggs	 No obvious pattern on eggs (not usually beneath skin of host). Approx. 0.6mm long	 No obvious pattern on eggs (usually beneath skin of host). Approx. 0.9mm long
<b>Larvae</b> [3 <sup>rd</sup> instar]	 Posterior spiracles on tube-like prominences	 Posterior spiracles usually on dark prominences	 Posterior spiracles not on raised prominences & with internal slits in a Y formation	 Posterior spiracles not on raised prominences & with <b>parallel</b> internal slits
<b>Pupae</b>				
<b>Adults</b>	 vinegar flies	 atherigona	 metallic green tomato fly	 true fruit flies

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# SUSPECT FRUIT INSPECTION RECORD

**IP No.**

**Q**

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[illegible]

# GROWER DECLARATION

I \_\_\_\_\_ (full printed name)

an Authorised Signatory of - \_\_\_\_\_ (Business name),

Interstate Produce (IP) No. **Q**

--	--	--	--

hereby declare that the \_\_\_\_\_ (no. of packages) \_\_\_\_\_ (type of packages – bins/crates)

of strawberries identified by \_\_\_\_\_ (package identification)

delivered to \_\_\_\_\_ (Business name)

Interstate Produce (IP) No. **Q**

--	--	--	--

 on-        /        /        (date)

for packing, inspection and certification under ICA Operational Procedure ICA-34, declare-

1. Grown by a business which is accredited for an ICA arrangement under Part A of Operational Procedure ICA-34;
2. Last pre-harvest treatment applied (☒ as appropriate)- \_\_\_\_\_

## Bait Spray

<input type="checkbox"/> <b>Naturalure™</b> strip spray, diluted solution, at 1L/Ha	<input type="checkbox"/> <b>Naturalure™</b> spot spray, diluted solution, at 1L/Ha
<input type="checkbox"/> <b>Naturalure™</b> spot spray, concentrated solution, at 1L/Ha	<input type="checkbox"/> 7 mL/L of a 440g/L <b>maldison</b> concentrate

## Cover Spray

<input type="checkbox"/> 2.5mL/L of 500g/L <b>trichlorfon</b> concentrate;	<input type="checkbox"/> 1.4 - 2.3 mL/L of 440g/L <b>maldison</b> concentrate;
<input type="checkbox"/> 0.4mL of 120g/L <b>spinetoram</b> concentrate, at 400mL/Ha with perimeter bait spraying	

Reference Code or Number of Block	Harvest Date	Date of Last MAT Renewal Placement	Date of Last Pre-harvest Treatment	Field Hygiene Program Maintained (Y/N)

3. The strawberries were inspected during harvest and found free from live fruit fly.

I am authorised to sign on behalf of the business and the information given above is to the best of my knowledge true and correct in every particular.

\_\_\_\_\_  
Signature

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
Date

**ATTACHMENT 17**



# FRUIT FLY SAMPLE SUBMISSION FORM

*This form should accompany each sample submitted to an Approved Taxonomist for identification.  
An Approved Taxonomist must be registered on DAF Queensland's Register of Approved Taxonomists.*

Name of business submitting sample:

IP Number:

Q				
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Postal address for response:

Telephone number:

Facsimile number:

Mobile number:

( )

( )

Name of person who collected sample:

Time and date collected:

: AM / /  
PM

Street address of property where specimen collected:

Maturity of Sample:

☐

Eggs

☐

Larvae

☐

Adults

☐

Other (specify)

Level of Infestation:

☐

High (>10)

☐

Medium (5-10)

☐

Low (<5)

Street address of Source Block:

Source Block IP Number:

Q

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Source Block Reference Code or Number (as per Property Plan):

Printed Name

Signature

Date

/ /

## OFFICE USE ONLY

Sample number:

Time and date received:

: AM / /  
PM

Identification:

Identified by:

Printed Name

Signature

Date

/ /

Business advised by:

☐

Post

☐

Facsimile

Time and date sent:

: AM / /  
PM

Printed Name

Signature

Date

/ /