FLOOD SPRAYING WITH DIMETHOATE

REVISION REGISTER

Version	Date of Issue	Amendment Details
5	07/08/2017	Version 5 issued, replaces version 4.
6	19/03/2019	Version 6 issued, revised in response to the Dimethoate review undertaken by the APVMA. Plant Health Assurance Certificate updated.

Authorised:

Biosecurity Queensland

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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 flood spraying equipment; and

(b) the responsibilities and actions of personnel;

that apply to flood spraying produce with Dimethoate for fruit fly under an Interstate Certification Assurance (ICA) arrangement.

2. SCOPE

This procedure covers all certification of flood spraying with Dimethoate by a Business operating under an Interstate Certification Assurance arrangement in Queensland.

Flood spraying with Dimethoate may be used for citrus fruit (excluding all edible skin species and mandarins that have received pre-harvest treatment with Dimethoate), tropical and sub-tropical fruit with inedible peel, melons (including watermelons).

Flood spraying with Dimethoate under this Operational Procedure may not be an accepted quarantine entry condition for all fruits to all intrastate or interstate markets.

Some intrastate or interstate markets may require additional quarantine certification for pests and diseases other than 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 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.*

4. DEFINITIONS

Accredited Certifier	means the legal entity responsible for the operation of the ICA arrangement detailed on the Accredited Certifier's Application for Accreditation.
Accrediting Authority	means the Department of Agriculture and Fisheries Queensland (DAF Queensland).
Agvet Code	means the *Agvet Code of Queensland*.

Application for Accreditation	Application for accreditation of an accredited certifier for an Interstate Certification Assurance (ICA) arrangement [CAF-47].
Approved laboratory	means a laboratory approved by the National Association of Testing Authorities (NATA) or DAF Queensland.
APVMA	means Australian Pesticides and Veterinary Medicines Authority.
Assurance Certificate	means a *Plant Health Assurance Certificate* [CAF-16].
Authorised Signatory	means a person whose name and specimen signature is provided as an Authorised Signatory on the Business's Application for Accreditation.
banana fruit fly	means all stages of the species *Bactrocera musae*.
Business	means the legal entity responsible for the operation of the flood spraying facility and an Interstate Certification Assurance arrangement detailed on the Business's Application for Accreditation. See accredited certifier
Certification Assurance	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 the specified requirements.
Certified Produce	means produce/items certified under this protocol covered by a valid Assurance Certificate or Plant Health Certificate.
citrus	means as defined in *Codex Alimentarius* and includes fresh fruit of grapefruit, lemon, lime, mandarin, orange, pomelo, tangelo, tangerine and tangor. Excludes all edible skin species (e.g. kumquats) and mandarins that have received pre-harvest treatment with Dimethoate.
DAF Queensland	means the Department of Agriculture and Fisheries Queensland.
defective flower end-type papaws	means fruit from plants of the Solo family of cultivars, or from plants that contain significant Solo parentage, or from plants that are hermaphrodite, or from any cultivar which has a tendency to produce fruit with an invaginated flower end.
facility	means the location of the flood spraying operation covered by the Interstate Certification Assurance arrangement.

flood spraying	means flooding with a high volume application which applies the specified minimum quantity of chemical mixture per square metre of the area being flood sprayed.
fruit fly	means Queensland Fruit Fly and Banana Fruit Fly.
ICA	means Interstate Certification Assurance.
Interstate Certification Assurance	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.
Inspector	means an inspector appointed under *the Biosecurity Act 2014.*
melon	means as defined in *Codex Alimentarius*, several varieties and cultivars of *Cucumis melo* L.
papaw/papaya	means fruit of the species *Carica papaya.*
Queensland fruit fly	means all stages of the species *Bactrocera tryoni*, and related species *B. aquilonis* and *B. neohumeralis*.
tropical and sub-tropical fruits with inedible peel	includes but is not limited to avocado, banana, breadfruit, custard apple, durians, feijoa, guava (inedible peel varieties only), jackfruit, kiwifruit (inedible peel varieties only), lychee, longan, mango, mangosteen, passionfruit, pawpaw, pomegranate, rambutan, sapodilla and sapote.
watermelon	means fruit of the species *Citrullus lanatus*.

5. RESPONSIBILITY

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 who 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;
- ensuring the Business has current accreditation for an ICA arrangement under this Operational Procedure;
- training staff in their duties and responsibilities under this Operational Procedure;
- ensuring the Business and its staff comply with their responsibilities under this Operational Procedure;
- ensuring that all Dimethoate flood spraying certified under the Business's ICA arrangement is carried out in accordance with this Operational Procedure.

The **Treatment Operator** is responsible for -

- preparing and maintaining flood spray mixtures and top-up mixtures (refer 7.2);
- maintaining spray mixture preparation, top-up and treatment records (refer 7.5);
- maintaining spray mixture concentration testing analysis records (refer 7.6.4);
- calibrating flood spray equipment to ensure -
  - the fruit is sprayed in a single layer,
  - the fruit is completely covered by the flood spray and maintained wet after flood spraying for the minimum specified time period (refer 7.8.1), and
  - the application rate is at least the minimum specified rate (refer 7.8.3);
- maintaining spray coverage and spray application rate test records (refer 7.8.2 and 7.8.4);
- maintaining flood spraying equipment (refer 7.9).

The **Authorised Dispatcher** is responsible for -

- ensuring all packages covered by an Assurance Certificate issued by the Business under this Operational Procedure are identified (refer 7.11.1);
- maintaining copies of all Assurance Certificates issued by the Business under the ICA arrangement (refer 7.12).

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 7.11.2).

6. REQUIREMENT

6.1 Dimethoate

All fruit must be treated by –

Flood spraying the fruit in a single layer with a mixture containing **400 mg/L Dimethoate** in a high volume application of at least **16 L/minute per** each **square metre** of the area being sprayed, which provides complete coverage of the fruit for a **minimum of 10 seconds**, after which the fruit must remain wet for not less than **60 seconds**.

Flood spraying must be the last treatment before packing, except that a non-recovery gloss coating ("wax") may be applied to citrus not less than 60 seconds after treatment.

Citrus fruit may be washed, treated with a fungicide and/or a gloss coating applied a minimum of 24 hours after flood spraying.

One hundred percent control of fruit fly eggs and larvae in treated fruit cannot be guaranteed with these treatments. Accredited businesses should not treat or certify fruit that is known to be infested with fruit fly under the ICA arrangement.

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

The Australian Pesticides and Veterinary Medicines Authority (APVMA) have suspended certain use patterns for Dimethoate. Dipping of some host fruits previously eligible for treatment are no longer permitted. Check the APVMA website at https://apvma.gov.au/ for further details.

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 form 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 operation under the ICA arrangement.

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 7.1.2 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 commencement of accreditation under 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 the year.

Random audits are conducted on a selected number of ICA arrangements each year. Random audits may take the form of a 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.

A compliance audit is conducted within twelve weeks of the date of re-accreditation for a Buinsness applying for annual re-accreditation.

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

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 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.

7.2 Flood Spray Preparation

The Treatment Operator shall prepare the spray mixture at a minimum of every 48 hours or more frequently as required.

Unused spray mixture may be held overnight for use the next day, however the mixture must be thoroughly mixed for at least two minutes prior to further use.

Periods longer than 48 hours may be considered where a Business can demonstrate by analysis of the chemical mixture (refer 7.6 Spray Concentration Testing) the ability to control and maintain concentration for a specified longer period.

7.2.1 Volume Of The Spray Tank

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

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

7.2.2 Calculating the Quantity Of Concentrate to Add to the Flood Spray Mixture

Dimethoate

Using the calibrated volume of the flood spray tank, calculate 1 mL of a concentrate containing 400 gm/L Dimethoate for every litre of mixture in the spray tank.

A similar calculation may be used when part filling the tank to a known incremental volume.

7.2.3 Spray Mixture Preparation Chart

The Business shall maintain a Spray Mixture Preparation Chart (refer Spray Mixture Preparation Chart - Attachment 4 and Attachment 5) or similar record in close proximity to the flood spraying equipment.

The chart shall provide the following details -

(a) the total volume in litres of the spray tank when filled to the **maximum mixture level** mark;

(b) the volume in millilitres (mL) of concentrate required to achieve 400 mg/L Dimethoate in a full tank of the made up spray mixture;

(c) the volume in millilitres (mL) of concentrate required to achieve 400 mg/L Dimethoate in a made up spray mixture for known **incremental volumes** or top-up volumes used (refer 7.4.1 Topping Up);

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

7.2.4 Ensuring Correct pH

Dimethoate flood sprays shall be maintained at a pH below 7.0 to prevent breakdown of the pesticide.

The Treatment Operator shall check the water to be used to prepare the spray mixture and regularly monitor the flood spray mixture to ensure correct pH by testing with a pH tester. Spray mixture pH checks shall be recorded by the Treatment Operator.

After measuring the pH, the Treatment Operator shall determine if a pH buffer is required.

An acidifying buffer may be used to achieve and maintain an acceptable pH level.

7.2.5 Preparing The Spray Mixture

If a buffer is required, add it to the empty spray tank or during filling.

Using a clean graduated measuring vessel, measure the required amount of chemical to achieve either 400 mg/L of Dimethoate for the required volume of mixture.

Suitable measuring vessels include graduated plastic or glass measuring cylinders or syringes.

Add the required amount of 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 appropriate **incremental volume** mark or **maximum mixture level** mark.

> ***Other ingredients may only be added to the mixture if they are known to be compatible with the chemical used to control fruit flies.***

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 facilities may require extended periods of mixing to fully dilute the chemical in the water.

The flood spraying facility must have a means of mixing the spray mixture in the spray tank throughout the spray operation to avoid settling or separation of the concentrate. 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.

7.2.6 Pre-Flood Spraying Treatments

Fruit can be treated with water or other chemical treatments prior to flood spraying with Dimethoate provided there is enough time for the majority of the water to drain off and minimise the dilution of the spray mixture.

The direct addition of chemicals to the wash water, or carriage of chemicals on fruit, that raise pH or otherwise destroy the pesticide must be avoided.

Where fruit has undergone pre-flood spraying washing or chemical treatments a spray mixture top-up program may be required to maintain the spray mixture concentration within the required tolerance (refer 7.4 Maintaining Spray Concentration and Volume).

7.2.7 Flood Spray Preparation Records

Records of spray mixture preparation shall be maintained by the Treatment Operator which record the date, time and volumes of concentrate and water used to prepare the spray mixture (refer 7.5 Treatment Records).

7.3 Flood Spraying

Fruit should be clean before spray treatment is applied to avoid fouling the spray mixture and restricting or reducing contact of the chemical with the fruit surface.

7.3.1 Method of Flood Spraying

The Treatment Operator shall ensure that flood spraying equipment is designed and operated to ensure fruit passes under the spray in a single layer and the entire surface of the fruit is completely covered for at least ten (10) seconds.

All surfaces of the fruit must be in contact with the spray mixture either by rotating the fruit as it passes under the spray, or through designing the spray system to ensure complete coverage of the fruit as it passes through the spray.

Fruit feed mechanisms must be designed in a manner that prevents fruit from passing through the spray before it has been completely covered with spray for the required time period, or allows hand-operated processes to be accurately timed.

Operation of equipment and volume of fruit feeding through the spray shall be carefully monitored by the Treatment Operator to ensure fruit is prevented from being pushed or carried through the spray in less than the required time.

Fruit must be allowed to remain wet with the chemical mixture for at least a further sixty (60) seconds after spraying.

7.3.2 Last Treatment Before Packing

Flood spraying must be the last treatment before packing.

The Treatment Operator shall ensure that no other treatments, such as fungicide treatment or washing, are applied to fruit between flood spraying and packing. However, other processes may be approved provided they do not affect the efficacy of the flood spray treatment.

Citrus fruits only may -

(a) have a non-recovery gloss coating (wax) applied at least (60) seconds after flood spraying with Dimethoate; or

(b) be washed, fungicide treated and/or have a gloss coating applied a minimum of 24 hours after flood spraying with Dimethoate.

7.4 Maintaining Spray Concentration and Volume

Concentration of the chemical mixture must be maintained within ± 15 % of the required concentration at all times (refer 6. Requirement).

7.4.1 Topping Up

During the spraying process it may be necessary for the Treatment Operator to top-up the spray mixture to maintain the required concentration and/or volume. This is done by adding the required quantity of water with the required amount of concentrate to the spray mixture as determined by the facility's top-up program (refer 7.4.2 Top-Up Program).

Calculate the required amount of concentrate and water by first determining the required volume of spray mixture to be added during the top-up procedure. Calculate the quantity of concentrate required for every litre of **mixture** added in the top-up procedure (refer 7.2.2 Calculating The Quantity Of Concentrate To Add To The Flood Spray Mixture).

Refer to the facility's Spray Mixture Preparation Chart.

Add the required amount of concentrate to the spray tank prior to topping-up with water (if required) to assist mixing of the chemical and the water.

Add the required volume of water (if required) to the spray tank using a graduated measuring vessel or a liquid metering device, or use **incremental volume** marks marked on the side of the spray tank.

Ensure that the chemical is completely diluted in all of the water by mixing the tank for a minimum of two minutes before recommencing flood spraying.

7.4.2 Top-Up Program

A facility which uses topping-up as a means of maintaining spray volume and/or concentration must develop and document a top-up program for maintaining spray mixture concentration.

The top-up program shall state -

(a) the frequency of topping-up based on the quantity of fruit treated or time; and

(b) the quantity of concentrate and water required to be added.

The Business shall provide evidence that the spray top-up program is effective in achieving and maintaining spray mixture concentration within ± 15 % of the required concentration (refer 7.6 Spray Concentration Testing).

7.4.3 Top-Up Preparation Records

Records of spray top-up preparation shall be maintained by the Treatment Operator which record the date, time and volumes of concentrate and water added to the spray mixture (refer 7.5 Treatment Records).

7.5 Treatment Records

The Treatment Operator must record all spray mixture preparation, top-up mixture preparation and fruit treatment using a Spray Mixture Preparation, Top-Up and Treatment Record (refer Attachment 3) or records which capture the same information.

The Business's treatment records must record -

- the date of flood spray mixture or top-up mixture preparation;
- the time of flood spray mixture or top-up mixture preparation;
- the volume of concentrate used (millilitres);
- the volume of the made-up spray mixture or top-up mixture (litres);
- the trade name of the concentrate used;
- the date the spray mixture was discarded;
- the date of treatment;
- treatment commencement time;
- treatment completion time;
- the type of fruit treated;
- approximate quantity of fruit treated;
- the identification of the Treatment Operator.

7.6 Spray Concentration Testing

The Business must verify the ability to achieve and maintain spray concentrations by providing the results of analysis of samples of a spray mixture from an approved laboratory.

7.6.1 Frequency of Sampling

Samples shall be gathered and tested -

(a) once prior to initial approval of the facility (so an analysis result is available for the Inspector carrying out the initial audit of the Business's facility and operating procedures); and

(b) at least annually during each season thereafter.

Annual sampling is required during the season for each fruit species being treated where there is a difference -

(a) in the method of processing the fruit (ie one species is sprayed wet and the other dry); or

(b) in chemicals or other treatments applied to the fruit prior to flood spraying (ie one species is treated with a fungicide and one is not);

where either of these may materially affect the maintenance of the spray mixture concentration.

Spray mixture samples shall be collected at a minimum of -

(a) immediately following preparation of the spray mixture; and

(b) at cessation of treatment after the chemical mixture has been used to treat the **maximum quantity of fruit** that will be treated in the facility before a spray mixture is discarded.

Businesses are exempted from the requirement for a second dip sample at the cessation of treatment when:

(a) treating less than 500 kg of fruit with each batch of a made-up chemical mixture; and

(b) holding and using the chemical mixture for less than 12 hours.

Additional spray mixture samples required for a facility using a top-up program shall include a sample of a spray mixture taken immediately prior to topping-up the mixture according to the facility's documented top-up program.

7.6.2 Collection of the Sample

The contents of the spray tank shall be thoroughly mixed prior to sampling. Samples of a minimum of 200 mL shall be taken from the centre of the spray tank, or if this is not practical, from a spray nozzle after the spray has run for a minimum of five minutes, and placed in a clean glass sample bottle with a secure water tight lid.

7.6.3 Storing and Packaging the Sample

Samples should be stored under refrigeration and dispatched within 24 hours of collection to minimise losses in chemical concentration.

Samples must be carefully packaged to prevent damage in transit and comply with any hazardous chemical packaging and transport requirements.

Samples shall be accompanied by a completed *Fruit Fly Chemical Treatment Sample for Analysis* [CAF-23] form and a duplicate copy of the completed form kept on file. A copy of the form is included as (refer Attachment 6).

7.6.4 Chemical Mixture Analysis Records

Results of the analysis must be retained by the Business for a minimum of 12 months from receipt and be made available when requested by an Inspector (refer 7.12 ICA System Records).

Details of chemical mixture analysis results shall be maintained using a Chemical Mixture Analysis Record (refer Attachment 7) or records which capture the same information.

The Business's chemical mixture analysis records must include -

- the date and time of collection of the sample;
- the full trade name and batch number of the concentrate used;
- the total volume of concentrate added to the spray mixture;
- the total volume of the prepared spray mixture from which the sample was taken.

Additional data that should be recorded by the Business includes -

- the name and quantity of any detergents, fungicides or other additives added to the spray mixture;
- type and quantity of fruit treated prior to collection of the sample;
- whether the fruit was dry, moist or wet when it entered the spray mixture.

Once accredited, any deficiency in an analysis result (refer 7.4 Maintaining Spray Concentration and Volume) **must**, as soon as practical, be reported to the **Accrediting Authority** so an investigation may be carried out to determine the cause and rectify any problems.

7.7 Disposal of the Spray Mixture

Spray mixture is to be disposed of in a manner consistent with the requirements of the relevant State Government and Local Authorities (Shire or City Councils etc).

7.8 Flood Spray Equipment Calibration

The Treatment Operator shall carry out calibration tests on flood spray equipment at regular intervals to verify spray coverage and spray application rates are in accordance with requirements (refer 6. Requirement).

Spray coverage and spray application rate calibration tests shall be carried out at a minimum of -

(a) once immediately prior to commencement of treatment and certification of produce each season for each fruit type being treated; and

(b) within four weeks of commencement of treatment each season, or prior to the compliance audit, whichever is the earlier; and

(c) once a month during each fruit season.

7.8.1 Spray Coverage Calibration

The Treatment Operator shall ensure fruit is completely covered by the flood spray for the minimum required time period of at least ten (10) seconds.

The Treatment Operator shall ensure that the fruit remains wet and does not undergo any drying process (e.g. fans, blowers or heaters) for at least a further sixty (60) seconds after the flood spray treatment.

Calibration tests may be carried out by placing an identifiable piece of fruit (e.g. marked with a waterproof ink) on the feed mechanism with a normal flow rate of other fruit. The Treatment Operator times the period that the marked piece of fruit achieves complete coverage under the spray.

This process is repeated three times and on each occasion the fruit must remain completely covered with the spray mixture for at least ten (10) seconds and must remain wet for a further sixty seconds (60) after flood spraying.

If any of the tests reveal that fruit is not remaining fully under the spray for the required time period, or fruit is undergoing a drying process within sixty (60) seconds, the equipment shall be adjusted and the procedure repeated until a satisfactory result is achieved.

7.8.2 Spray Coverage Calibration Records

Records of spray coverage calibration tests shall be maintained by the Treatment Operator which record -

(a) the name of the person conducting the test;

(b) the date of testing; and

(c) the results achieved during the tests.

An example Spray Coverage Test Record is included as Attachment 8.

7.8.3 Spray Application Rate Calibration

The Treatment Operator shall ensure that the application rate of the flood spray equipment is at least the required minimum of 16 L/minute per each square metre of the area being flood sprayed.

Calibration tests may be carried out by calculating the size of the spray area in square metres. The boundary being the line at which a fruit's surface is fully wetted in ten seconds.

For example:- spray area width = 1.5 metres
spray area length = 2.0 metres
Total spray area = 1.5 x 2.0= 3.0 m^2

Place a collection vessel under each of the spray nozzles for a measured time period and determine the volume of output from each nozzle over a one minute period.

For example:- Spray equipment with 16 spray nozzles gives the following Total output volumes over a one minute period -

3.05 L + 3.07 L + 3.08 L + 3.03 L + 3.04 L + 3.08 L + 3.05 L + 3.06 L + 3.05 L + 3.06 L + 3.07 L+ 3.04 L + 3.05 L + 3.04 L + 3.06 L + 3.07 L = 48.9 L/min Total output.

Calculate the application rate per square metre over the spray area using the following calculation -

Total output (L/min) ÷ Total spray area (m^2) = Application Rate (L/min/m^2).

For example:- 48.9 L/min ÷ 3.0 m^2 = 16.3 L/minute/m^2.

If any test reveals that the application rate is below the required rate per square metre, the equipment shall be adjusted by increasing the output volume or decreasing the spray area (provided the fruit remains under the spray for the minimum period) and the procedure repeated until a satisfactory result is achieved.

7.8.4 Spray Application Rate Calibration Records

Records of spray application rate calibration tests shall be maintained by the Treatment Operator which record -

(a) the name of the person conducting the test;

(b) the date of testing; and

(c) the results achieved during the tests.

Results of testing shall include the full calculations used to determine the spray equipment's application rate.

An example Spray Application Rate Test Record is included as Attachment 9.

7.9 Flood Spray Equipment Maintenance

The Treatment Operator shall carry out regular checks of flood spraying equipment to ensure it continues to operate effectively according to the required standards and remains free from soiling, malfunction, blockages, damage or excessive wear.

7.10 Post Treatment Security (Tasmania only)

Packing shall commence as soon as practicable after treatment. Fruit may be allowed to dry adequately prior to packing.

Treated fruit shall be held for the minimum practical period after treatment before it must be secured against reinfestation.

Any fruit which is stored outside the treatment facility after treatment and prior to dispatch must be held under secure conditions.

Any treated 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.

Certification Assurance Certificates must state that fruit was; "Packed in such a way as to prevent infestation of fruit fly".

Secure conditions include -

(a) unvented packages;

(b) vented packages with the vents secured with gauze/mesh with a maximum aperture of 1.6 mm;

(c) fully enclosed under tarpaulins, hessian, shade cloth, mesh or other covering which provides a maximum aperture of 1.6 mm;

(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 1.6 mm.

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.

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.

7.11 Dispatch

7.11.1 Package Identification

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

- the Interstate Produce number of the Business that operates the approved facility in which the produce was treated; and
- the words “MEETS ICA-02”; and
- the date (or date code) on which the fruit was treated;

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

Any packages containing fruit that has not been treated in accordance with the requirements of this Operational Procedure shall not be marked as stated above.

7.11.2 Assurance Certificates

The Authorised Dispatcher shall ensure an Assurance Certificate is completed and signed by an Authorised Signatory of the Business prior to consignment to a market requiring certification of Dimethoate flood spray treatment.

Assurance Certificates shall be in the form of a *Plant Health Assurance Certificate* [CAF-16]. A completed example is shown as Attachment 2.

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

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].

7.11.3 Assurance Certificate Distribution

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

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

7.12 ICA System Records

The Business shall maintain the following records -

(a) Spray Mixture Preparation Chart (refer 7.2.3);

(b) Spray Mixture Top-Up Program (if spray mixture is topped-up) (refer 7.4.2);

(c) Spray Mixture Preparation, Top-Up and Treatment Record (refer 7.5);

(d) The duplicate copy of each *Fruit Fly Chemical Treatment Sample for Analysis* [CAF-23] form completed by the Business (refer 7.6.3);

(e) Chemical Mixture Analysis Record (refer 7.6.4);

(f) Spray Coverage Test Record (refer 7.8.2);

(g) Spray Application Rate Test Record (refer 7.8.4);

(h) the duplicate copy of each *Plant Health Assurance Certificate* [CAF-16] issued by the Business (refer 7.11.3).

ICA system records shall be retained for a period of not less than 12 months from completion or until the next compliance audit of the business, whichever is the later.

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.

7.13 ICA System Documentation

The Business shall maintain the following documentation -

(a) a copy of the Business's current Application for Accreditation (refer Attachment 1);

(b) a current copy of this Operational Procedure;

(c) a current *Certificate of Accreditation for an Interstate Certification Assurance 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

Attachment 1	*Application for Accreditation of a Business for an Interstate Certification Assurance (ICA) Arrangement*	**CAF-47 (BLANK)**
Attachment 2	*Plant Health Assurance Certificate*	**CAF-16 (COMPLETED EXAMPLE)**
Attachment 3	Spray Mixture Preparation, Top-Up and Treatment Record	**CAF-107 (BLANK)**
Attachment 4	Spray Mixture Preparation Chart	**CAF-108 (BLANK)**
Attachment 5	Spray Mixture Preparation Chart	**CAF-108 (COMPLETED EXAMPLE)**
Attachment 6	*Fruit Fly Chemical Treatment Sample for Analysis*	**CAF-23 (BLANK)**
Attachment 7	Chemical Mixture Analysis Record	**CAF-95 (BLANK)**
Attachment 8	Spray Coverage Test Record	**CAF-109 (BLANK)**
Attachment 9	Spray Application Rate Test Record	**CAF-110 (BLANK)**

Queensland Government

Department of Agriculture and Fisheries

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:
PHIS 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.

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
- 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.

ATTACHMENT 1

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 name/s.*

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

ATTACHMENT 1

Queensland Government

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: Joe's Avocadoes Pty Ltd

Address: Orchard Road, Bundaberg Qld 4670

Consignee

Name: F & V Wholesalers Pty Ltd

Address: South Australian Produce Market, Burma Road, Pooraka SA 5095

Reconsigned To (Splitting consignments or reconsigning whole consignments)

Name:

Address:

Method of Transport (Provide details where known)

- ☒ Road — Truck/Trailer Registration
- ☐ Rail — Consignment
- ☐ Air — Airline/Flight no.
- ☐ Sea — Vessel Name & Voyage no.

Certification Details (Please print)

Accredited Certifier Carrier of Biosecurity Matter

Name: Central Packing Co Pty Ltd

Address: Childers Road, Bundaberg Qld 4670

Grower or Packer

Name: Joe's Avocadoes Pty Ltd

Address: Orchard Road, Bundaberg Qld 4670

IP No. of Acc. Certifier	Brand Name or Identifying Marks (as marked on packages)	Date Code (as marked on packages)
Q 9999	Joe's Avocadoes Pty Ltd	6/01/2019

Facility No.	Procedure Code	Expiry Date
01	ICA-02	01/01/19

Facility No.	Procedure Code	Expiry Date
		/ /

Number of Packages	Type of Packages (e.g. trays, cartons)	Type of Carrier of Biosecurity Matter	Authorisation for Split Consignment
2000	Cartons	Avocadoes	

Date	Treatment	Chemical (Active Ingredient)	Concentration	Duration and Temperature
/ /	☐ Dipping	Dimethoate	400ppm	☐ One min. ☐ 10 sec. then wet for 60 sec.
06 / 01 /2019	☒ Flood Spraying	Dimethoate	400ppm	10 seconds then wet for 60 seconds
/ /	☐ Fumigation	Methyl Bromide	g/m³	Two hours @ °C
/ /	☐ Grown and packed on a property free from red imported fire ant			
/ /	☐ Sourced from a property located more than 5km from a known infestation of red imported fire ant			
/ /	☐ Mature green condition at packing			
/ /	☐ Bananas in a hard green condition with unbroken skin			
/ /	☐ Inspected and found free of melon thrips			
/ /				

Additional Certification

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
Arthur John Signatory	A J Signatory	6/01/2019

Yellow copy: Consignment copy (original) White copy: Accredited Certifier's copy (duplicate copy)

CAP-118 (03/18) V4

ATTACHMENT 2

SPRAY MIXTURE PREPARATION, TOP-UP AND TREATMENT RECORD

SPRAY MIXTURE PREPARATION & TOP-UP PREPARATION								FRUIT TREATMENT						
Date	Time	Top-Up (✓)	pH check (✓)	Volume of Concentrate (Millilitres)	Volume of Mixture (Litres)	Trade Name of Concentrate	Date Mixture Discarded	Date of Treatment	Start Time	Finish Time	Type of Fruit Treated	Quantity of Fruit Treated (kg or packages)	Treatment Operator's Name	Signature

ATTACHMENT 3

SPRAY MIXTURE PREPARATION CHART

Chemical Concentrate = _____

Target Mixture Concentration = _____ ppm

Full Dip Tank Volume = _____ Litres

Concentrate to Full Tank = _____millilitres

Part Fill or Top-Up (Concentrate [mL]/Mixture [L])

_____mL Concentrate /_____Litres Mixture

_____mL Concentrate /_____Litres Mixture

_____mL Concentrate /_____Litres Mixture

_____mL Concentrate /_____Litres Mixture

_____mL Concentrate /_____Litres Mixture

_____mL Concentrate /_____Litres Mixture

_____mL Concentrate /_____Litres Mixture

Prepared by: _____ _____ / /

Printed Name Signature Date

SPRAY MIXTURE PREPARATION CHART

Chemical Concentrate = Dimethoate

Target Mixture Concentration = 400 ppm

Full Dip Tank Volume = 1,400 Litres

Concentrate to Full Tank = 1400 millilitres

Part Fill or Top-Up (Concentrate [mL]/Mixture [L])

50	mL Concentrate /	50	Litres Mixture
100	mL Concentrate /	100	Litres Mixture
250	mL Concentrate /	250	Litres Mixture
400	mL Concentrate /	400	Litres Mixture
500	mL Concentrate /	500	Litres Mixture
750	mL Concentrate /	750	Litres Mixture
1000	mL Concentrate /	1000	Litres Mixture

Prepared by: T Operator (Printed Name) T Operator (Signature) 12/10/16 (Date)

FRUIT FLY CHEMICAL TREATMENT SAMPLE FOR ANALYSIS

(Only one sample to be submitted per form)

SAMPLE DETAILS

Client's Name: | IP Number: **Q**

Postal Address: | Street Address:

Telephone No: | Fax No:

Crop Treated:

Chemical used (tick one): ☐ Dimethoate

Chemical Brand Name: | Batch Number:

Total Volume of Mixture: litres | Volume of concentrate added: ml

Name and Amount of other chemicals added:

Date of Mixing: | Time of Mixing: AM PM

Method of Application (tick one): ☐ Dip ☐ Flood Spray ☐ Non-recirculating Spray

Fruit Wetness immediately prior to Treatment (tick one): ☐ Dry ☐ Moist ☐ Dripping

Sample Number as marked on sample bottle:

Date sample collected: | Time sample collected: AM PM

Fruit volume treated up until sample collected: cartons.

Total volume of chemical mixture **at time of sampling**: litres.

Other information on sample:

ANALYSIS DETAILS - For Laboratory Use Only

Laboratory Identification:
(Apply stamp)

Laboratory Number: | Date Received: | Date Analysed:

Analysis Method:

Result: Chemical: | Concentration: mg/L | Date Reported:

Comments:

Analyst Name: | Signature: | Date:

Forward one copy with the sample to be analysed and retain a duplicate copy.
Laboratory to complete Analysis section and return a copy to the client.

CHEMICAL MIXTURE ANALYSIS RECORD

SAMPLE DETAILS	CHEMICAL MIXTURE DETAILS		FRUIT DETAILS	ANALYSIS DETAILS
Date of Sampling- _____ Time of Sampling- _____ Sample No.- _____	Trade Name of Concentrate- _____ Batch No.- _____ Volume of Concentrate- _____mL	Other Additive/s- _____ Volume of Additive/s- _____ mL Total Volume of Mixture- _____ Litres	Fruit Treated- _____ Quantity Treated- _____ Condition ☑- ❒ Dry ❒ Moist ❒ Wet	Laboratory- _____ Analysis No.- _____ Analysis Result- _____
Date of Sampling- _____ Time of Sampling- _____ Sample No.- _____	Trade Name of Concentrate- _____ Batch No.- _____ Volume of Concentrate- _____mL	Other Additive/s- _____ Volume of Additive/s- _____ mL Total Volume of Mixture- _____ Litres	Fruit Treated- _____ Quantity Treated- _____ Condition ☑- ❒ Dry ❒ Moist ❒ Wet	Laboratory- _____ Analysis No.- _____ Analysis Result- _____
Date of Sampling- _____ Time of Sampling- _____ Sample No.- _____	Trade Name of Concentrate- _____ Batch No.- _____ Volume of Concentrate- _____mL	Other Additive/s _____ Volume of Additive/s- _____ mL Total Volume of Mixture- _____ Litres	Fruit Treated- _____ Quantity Treated- _____ Condition ☑- ❒ Dry ❒ Moist ❒ Wet	Laboratory- _____ Analysis No.- _____ Analysis Result- _____
Date of Sampling- _____ Time of Sampling- _____ Sample No.- _____	Trade Name of Concentrate- _____ Batch No.- _____ Volume of Concentrate _____mL	Other Additive/s- _____ Volume of Additive/s- _____ mL Total Volume of Mixture- _____ Litres	Fruit Treated- _____ Quantity Treated- _____ Condition ☑- ❒ Dry ❒ Moist ❒ Wet	Laboratory- _____ Analysis No.- _____ Analysis Result- _____

SPRAY COVERAGE TEST RECORD

Date of Test	Fruit Type	Time Under Spray (seconds)			Time to Drying Process (seconds)	Name of Testing Officer	Comments
		Test 1	Test 2	Test 3			
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NOTES

1. Spray coverage calibration tests must be carried out immediately prior to commencement of treatment and certification of produce, within four weeks of commencement of treatment or prior to the Business's compliance audit, and once a month during the season for each fruit type being treated.
2. Three tests must be carried out. For each test, record the number of seconds an identifiable piece of fruit is completely covered with the spray mixture in the normal flow of fruit.
3. Record the minimum time period between complete coverage of the fruit for ten seconds and any drying process (eg fans, blowers or heaters) is applied to the fruit. Where no drying process is applied show not applicable (N/A).
4. **Adjust the equipment and repeat the test if any of the three tests are below the minimum specified time period for spray coverage or drying.**

SPRAY APPLICATION RATE TEST RECORD

Date of Test	Application Rate Required	No. of Nozzles	Output for Individual Nozzles (Litres /minute/nozzle)	Total Output (L/min)	Total Spray Area (m^2)	Application Rate	Testing Officer's Name
/ /	$L/m^2/min$					$L/m^2/min$	
/ /	$L/m^2/min$					$L/m^2/min$	
/ /	$L/m^2/min$					$L/m^2/min$	
/ /	$L/m^2/min$					$L/m^2/min$	
/ /	$L/m^2/min$					$L/m^2/min$	
/ /	$L/m^2/min$					$L/m^2/min$	
/ /	$L/m^2/min$					$L/m^2/min$	
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/ /	$L/m^2/min$					$L/m^2/min$	
/ /	$L/m^2/min$					$L/m^2/min$	
/ /	$L/m^2/min$					$L/m^2/min$	

NOTES

1. Spray application rate calibration tests must be carried out immediately prior to commencement of treatment and certification of produce, within four weeks of commencement of treatment or prior to the Business's compliance audit, and once a month during the season for each fruit type being treated.
2. Calculate the Total Output of the spray equipment by placing a collection vessel under each spray nozzle for a measured time period and determine the volume of output from each nozzle over a one minute period. Total the output (L/min) from each of the nozzles to give the Total Output (L/min).
3. Calculate the Total Spray Area (m^2) by multiplying the spray area width by the spray area length, the boundary being the line at which the fruit's surface is fully wetted.
4. Divide the Total Output (L/min) by the Total Spray Area (m^2) to give the Application Rate ($L/min/m^2$) -

   Total Output (L/min) ÷ Total Spray Area (m^2) = Application Rate ($L/min/m^2$)
5. **Adjust the equipment and repeat the test if the test shows a spray application rate below the minimum specified requirement.**