CONDITION AND TREATMENT OF MANGOES

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1 PURPOSE

The purpose of this procedure is to describe –

(a) the principles of operation and standards required; and
(b) the responsibilities and practices of personnel;

that apply to certification of mangoes for fruit fly under a Certification Assurance Accreditation (CAA) arrangement.

2 SCOPE

This Procedure covers the certification of class 1 quality mangoes that have been pre-harvest or post-harvest treated, inspected to meet hard mature condition, as defined below, and inspected for fruit fly following packing for consignment to South Australia from a business operating under this CAA arrangement.

This Operational Procedure covers ALL mango fruit varieties.

Certification of mangoes that meet hard mature condition and have been pre-harvest or post-harvest treated and inspected under this Operational Procedure is not a quarantine requirement for entry of mangoes into all interstate markets other than South Australia.

Some intrastate and interstate markets may require additional 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.

3 REFERENCES

WI-02	*Guidelines for Completion of Plant Health Assurance Certificates*.

4 DEFINITIONS

Accredit	means to accredit persons to give a Biosecurity Certificate in accordance with Section 430 of the *Biosecurity Act 2014*.
Accredited Certifier	means the legal entity responsible for the operation of the CAA arrangement detailed on the Accredited Certifier's Application for Accreditation.
Accrediting authority	means the Government Department responsible for accrediting a certifier under this procedure.
Act	means the Biosecurity Act 2016.
Application for Accreditation	means an Application for Accreditation of an Accredited Certifier for a Certification Assurance Accreditation (CAA) Arrangement [CAF-71].

APMVA	means the Australian Pesticides and Veterinary Medicines Authority.
Assurance Certificate	means a Plant Health Assurance Certificate.
Authorised Signatory	means person whose name and specimen signature is provided as an authorised signatory with the Accredited Certifiers Application for Accreditation.
Business	means the Accredited Certifier responsible for the operation of the facility and Certification Assurance Accreditation arrangement detailed in the Business's Application for Accreditation.
CAA	means Certification Assurance Accreditation.
Certification Assurance Accreditation	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.
End-point inspection	means the process by which a representative sample is drawn and inspected from the finalised consignment prior to certification.
Fruit fly	means Queensland fruit fly (*Bactrocera tryoni*), Lesser Queensland fruit fly (*Bactrocera neohumeralis*) and Northern Territory fruit fly (*Bactrocera aquilonis*).
Hard mature condition	means fruit that has reached the stage of ripeness at the time of picking that will allow completion of the ripening process as described in the 2016 Mango Industry Quality Standard for class 1 fruit, with a softness rating scale of "0".
Homogeneous	means produce that is all of the same or similar kind or nature.
Inspector	means an Inspector appointed under the *Biosecurity Act 2014.*
In-line inspection	means the process by which a representative sample of packed product is drawn from a lot and inspected during the processing and packing of the produce.
Lot	means a quantity of homogeneous produce assembled for inspection at one place at one time. A lot could consist of produce from one or more growers/blocks/properties.

nonconformance	means a nonfulfilment of a specified requirement.
Operational Procedure	means this approved CAA Operational Procedure.
package	means the complete outer covering or container used to transport and market the product.
Packed Product	means fruit in packages following grading and packing and ready for marketing.
Plant Health Assurance Certificate	means a biosecurity certificate approved by the Accrediting Authority for the ICA Scheme [CAF-16].

5 RESPONSIBILITY

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

The **Certification Controller** is responsible for –

- representing the business during audits and other matters relevant to CAA accreditation;
- ensuring the business has current accreditation for a CAA 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 and duties under this Operational Procedure;
- ensuring all preparation of fruit for certification is carried out in accordance with this Operational Procedure;
- ensuring sorters, graders and packers are able to identify hard mature condition and symptoms of fruit fly infestation;
- overseeing and supervising the sorting, inspection and packing process;
- investigating and rectifying any problems following the detection of nonconformity in packed product by the Packed Product Controller;
- instigating corrective action taken following rejection of packed product.

The **Cover Spray Operator** is responsible for –

- maintaining a tank calibration certificate for each sprayer used for cover spray treatment of mangoes under this Procedure;
- applying cover sprays to all source blocks of mangoes certified under this Operational Procedure prior to packing;
- preparing cover spray mixtures;
- maintaining cover spray equipment;
- maintaining cover spray mixture preparation and treatment records.

The **Harvest Supervisor** is responsible for –

- overseeing the harvest of mangoes for certification under this Operational Procedure;
- inspecting a minimum of 10 mangoes from each 500kg of fruit harvested for certification for hard mature condition;
- rejecting, cutting and examining any fruit displaying symptoms of infestation for evidence of fruit fly;
- immediately advising the Certification Controller on detection of live fruit fly at harvest;
- maintaining harvest inspection records.

The **Fruit Receival Officer** is responsible for –

- ensuring mangoes grown by another business are accompanied by a Harvest Inspection Declaration;
- inspecting a minimum of 10 mangoes from each 500kg of fruit received for certification for hard mature condition
- rejecting, cutting and examining any fruit displaying symptoms of infestation for evidence of fruit fly
- immediately advising the Certification Controller on detection of live fruit fly at fruit receival);
- maintaining fruit receival inspection records.

The **Sorters/Graders/Packers** are responsible for –

- ensuring all fruit is inspected for hard mature condition and freedom of fruit fly ;
- ensuring nonconforming fruit are identified, removed from the packing line and controlled to prevent mixing with conforming fruit.

The **Packed Product Controller** is responsible for –

- randomly selecting and inspecting 2% or 600 units, whichever is greater of packed product for compliance with hard mature condition, as defined above, and Class 1 Quality Standard;
- identifying all sample packages;
- taking corrective action following identification of nonconforming fruit in any sample package;
- maintaining records of the results of all packed product inspections;

The **Authorised Dispatcher** is responsible for –

- ensuring all packages containing fruit covered by an Assurance Certificate issued by the business are identified;
- maintaining copies of all Assurance Certificates issued by the business under the CAA arrangement.

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' CAA arrangement and that the details on the certificate are true and correct in every particular.

These position titles have been used to reflect the responsibilities of staff under the CAA 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.

6 REQUIREMENT

All mango fruit, certified under this Operational Procedure must comply with the following requirements: pre or post-harvest treated, hard mature condition and packed product inspected.

6.1 Pre/Post - Harvest Treatment

All mango fruit certified must receive either a pre **or** post-harvest treatment.

6.1.1 Pre-harvest Treatment

1. Pre-harvest treated means a bait spray or cover spray, prior to harvest in accordance with the APMVA Approved Label directions:

(a) A program of bait sprays consisting of -

- A bait spray mixture of either -
  - 435 mL of a concentrate containing 1150 g/L **maldison**, and
  - 2 litres yeast autolysate protein lure,

  per 100 litres of water, or
  - a bait spray concentrate containing 0.24 g/L **spinosad** at label rate (e.g. 1 part Naturalure® concentrate mixed with 6.5 parts of water);
- applied to -
  - all **mango trees** on the **property**, and
  - all other fruit fly hosts trees on the property,

  with fruit at a susceptible stage (unless receiving a program of dimethoate cover sprays);
- applied to the leaves at a rate of not less than **100 mL per tree**;
- at a maximum interval of **every seven days**;
- from **six weeks** prior to commencing harvest to the completion of harvest.

or

(b) A program of cover sprays consisting of –

- a cover spray mixture of –
  - 75mL of a concentrate containing 400g/L **dimethoate**, per 100 litres of spray mixture;
- applied to **all mango trees** in the block for any **block** in which mangoes are grown for certification under this Operational Procedure;
- applied **thoroughly** to the fruit;
- at a maximum interval of **every fourteen days**;
- from **five weeks** prior to commencing harvest to the completion of harvest.

or

(c) A combined program of bait sprays and cover sprays applied in accordance with (a) and (b) above, at intervals determined by the type of spray in the most recent application.

OR

6.1.2 Post-harvest Treatment

4. Post-harvest treatment which means treated by either –

(a) full immersion of the fruit in a mixture containing 400mg/L dimethoate for a period of not less than 60 seconds; or

(b) flood spraying the fruit in a single layer with a mixture containing 400mg/L dimethoate in a high volume application of at least 16L/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.

All mango fruit is required to undergo post-harvest treatment by a business accredited for ICA arrangement ICA-01 or ICA-02.

Post-harvest treatment **must** be the last treatment before packing.

6.2 Hard Mature Condition

All mango fruit certified must be in a hard mature condition.

This means that the fruit at picking has reached such a stage of development as to ensure a proper completion of the ripening process and is in a hard condition, as described in the 2016 Mango Industry Quality Standards with a softness/ripeness rating scale of “0” (refer Appendix 12).

6.2.1 Harvest Inspection

All mango fruit certified must be harvest inspected which means from a sample of fruit that was inspected after harvest and found to be in a hard mature condition and free of live fruit fly infestation.

6.3 Packed Product Inspection

All mango fruit certified must be inspected after packing which means from a 2% or 600 unit, whichever is greater a sample of fruit that was inspected following sorting, grading and packing and found to be in a hard mature condition and free of live fruit fly infestation.

The Queensland Department of Agriculture and Fisheries and interstate quarantine authorities maintain the right to inspect at any time certified produce and to refuse to accept a Plant Health Assurance Certificate where produce is found not to conform to specified requirements.

7 PROCEDURE

7.1 Accreditation

7.1.1 Application for Accreditation

An Accredited Certifier seeking accreditation for an Certification Assurance Accreditation arrangement must make application for accreditation by lodging the form Application for Accreditation of an Accredited Certifier for a Certification Assurance Accreditation (CAA) Arrangement [CAF-71] (refer Attachment 1) at least 10 working days prior to the intended date of commencement of certification of produce.

This application may be lodged online at:-

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

7.2 Audit Process

7.2.1.1 Initial Audit

Prior to an Accredited Certifier becoming accredited an initial audit of the business is carried out to verify the CAA 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 CAA 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.

7.2.1.2 Compliance Audits

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

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

A compliance audit is conducted within four weeks of the commencement of accreditation under the CAA arrangement.

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

Random audits are conducted on a selected number of CAA 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, CAA system records or CAA system documentation.

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

7.2.1.3 Re-Accreditation

Accredited Certifiers are required to re-apply for accreditation each year the Accredited Certifier seeks to operate under the CAA 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 CAA arrangement.

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

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

7.2.2 Certificate of Accreditation

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

- the facility location;
- the Operational Procedure covered;
- type of produce; 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 CAA arrangement unless it is in possession of a valid and current Certificate of Accreditation for the facility, procedure and produce type covered by the Plant Health Assurance Certificate.***

PART A – (Covers the grower activities of cover sprays and harvest inspection for hard mature condition).

7.3 Property Plan

The Certification Controller shall maintain a property plan for each property on which mangoes are grown, treated and harvest inspected for certification under this Operational Procedure.

The property plan shall include the following details –

(a) the location of all blocks on which mangoes are grown;
(b) the reference number, code or other identification used to identify the block;
(c) the cultivar and the number of mango trees planted in the block;
(d) the name (if any) used on-farm to identify the block or group of blocks;
(e) road access including street name/s;
(f) internal roadways within the property;
(g) 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. A blank Property Plan is included as Attachment 3 and may be copied for inclusion with the business's Application for Accreditation.

7.4 Pre or Post-Harvest Treatment

All mango fruit, certified under this Operational Procedure must either have been pre or post-harvest treated for fruit fly.

7.4.1 Pre-harvest Treatment

Pre-harvest treated must undergo treatment means the application of either an approved program of bait sprays and/or cover sprays.

When both bait sprays and cover sprays are used in the same season, the maximum interval that can elapse before the next spray is applied, is determined by the type of spray in the most recent application (e.g. 7 days for baits sprays and 14 days for cover sprays)

7.4.1.1 Pre-Harvest Bait Spraying

7.4.1.1.1 Bait 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. 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 is shown as Attachment 4.

Bait Spray Equipment Calibration

The Spray Operator shall carry out application rate calibration tests on bait spraying equipment prior to commencement of the season each year and within four weeks of commencement of treatment. Application rate calibration tests may be carried out by using one of the following methods-

1. ***Fill the spray tank with water. With pump operating at normal speed, collect and record the output from the equipment, using an accurate measuring cylinder.***
2. ***Calculate the time required to apply at least 100 mL from the spray equipment.***
3. ***Record this duration as a guide to the time required to apply the correct quantity of bait spray to each tree.***

OR

1. ***Fill the spray tank with water. With pump operating at normal speed, determine how many squirts it takes to fill a 1 litre measuring cylinder.***
2. ***Adjust the equipment to output sufficient volume to require 10 squirts to fill the 1 litre container.***
3. ***Repeat the calibration test until you can consistently fill the 1 litre container with 10 squirts when operating at normal operating speed.***
4. ***One squirt is then equivalent to 100mLs of bait spray.***
5. ***Apply bait spray at the rate of one squirt to each tree.***

7.4.1.1.2 Bait Spraying Equipment Calibration Records

Records of spray equipment calibration tests which 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, shall be maintained by the Spray Operator

An example Bait Spray Equipment Application Rate Calibration Test Record is included as Attachment 5.

7.4.1.1.3 Calculating the Quantity of Concentrate to Add to the Bait Spray Mixture

Calculate 4.35 mL of a concentrate containing 1150 g/L maldison plus 20 mL yeast autolysate protein lure for every litre of water in the spray tank.

Calculate the volumes of maldison concentrate and yeast autolysate for the maximum mixture level and each of the incremental volumes marked on the spray tank and record these on the Bait Spray Mixture Preparation Chart.

7.4.1.1.4 Bait Spray Mixture Preparation Chart

The Business shall maintain a Bait Spray Mixture Preparation Chart (refer Attachments 6 and 7) or similar record in close proximity to the spray mixture preparation area at the time of making up the spray mixture.

A chart shall be prepared for each spray unit used by the business for bait spraying under this Operational Procedure.

The 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 must be operated;

(c) the time in seconds or the number of squirts required to apply 100 mL of bait spray mixture (refer Bait Spray Equipment Calibration);

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

(e) the trade name of the maldison concentrate to be used and the stated concentration of maldison as the active ingredient in the formulation;

(f) the volume in millilitres (mL) of -

- concentrate; and
- yeast autolysate; and
- water;
- required to achieve the required bait spray mixture when filled to the **maximum mixture level** mark;

(g) the volume in millilitres (mL) of -

- concentrate; and
- yeast autolysate; and
- water;
- required to achieve the required bait spray mixture for any **incremental volumes** used;

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

7.4.1.1.5 Bait Spray Treatment

The Spray Operator shall undertake bait spraying from six weeks prior to harvest until the completion of harvest of all certified fruit on the property.

The bait spray shall be applied at a maximum interval of every seven days to all mango trees and all other fruit fly host trees growing on the property with fruit at a susceptible stage (unless receiving a program of dimethoate cover sprays).

A minimum of six bait spray applications shall be carried out prior to commencing harvest of fruit from a block.

If fruit is still being harvested, bait or cover spraying should be continued for three weeks in blocks where picking has ceased to ensure fruit flies do not breed on residual fruit.

The bait spray shall be applied as a squirt of coarse droplets to the foliage, preferably in a shady part of the tree. Avoid spraying during the hottest part of the day and avoid spraying the fruit where possible.

Do not apply bait to the trunk or inter-row grass and weeds. The side of the tree that is sprayed should be alternated for each spray application to minimise phytotoxicity.

The mixture shall be applied at a rate of 100 mL prepared bait spray mixture per tree.

Pre-harvest bait sprays must be reapplied if rain sufficient to cause run-off occurs within two hours of spraying.

Fruit from treated trees should not be harvested until the specified withholding period has been complied with after the bait spray application.

7.4.1.1.6 Bait Spray Mixture Preparation

The Spray Operator shall prepare the chemical mixture at least daily or more frequently as required.

7.4.1.1.7 Making Up the Bait Spray Mixture

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

Suitable measuring vessels include graduated plastic or glass measuring cylinders.

Fill the spray supply tank with clean water to the incremental volume mark or maximum mixture level mark.

Add the required amount of maldison to the spray tank in accordance with the manufacturer's directions on the label.

Repeat this for the yeast autolysate.

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.

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 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.

7.4.1.1.8 Bait 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.

7.4.1.1.9 Bait Spray Mixture Preparation and Treatment Records

The Spray Operator must record details of all bait spray mixture preparation and bait spray treatment using a Bait Spray Mixture Preparation and Treatment Record (refer Attachment 8) or records which capture the same information.

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

- the date of bait spray mixture preparation;
- the time of bait spray mixture preparation;
- the total volume (litres) of water in the spray mixture;
- volume of yeast autolysate used (millilitres) in the spray mixture;
- volume of maldison concentrate used (millilitres) in the spray mixture;
- the trade name of the concentrate used;
- the date of application;
- the spray equipment used;
- the block/s treated;
- the number of trees sprayed;
- identification of the Spray Operator.

7.4.1.2 Pre-Harvest Cover Spraying

7.4.1.2.1 Cover 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 volume indicator marks shall be calibrated with the tank at the normal filling position using a calibrated flow meter. The person conducting the calibration test shall complete 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 is shown as Attachment 4.

7.4.1.2.2 Calculating the Quantity of Concentrate to Add to the Spray Mixture

Calculate 0.75mL of a concentrate containing 400g/L dimethoate for every litre of mixture in the spray tank.

The following calculation may be used to calculate the quantity of dimethoate concentrate required in a full spray tank –

No. of Litres required to fill tank X 0.75 = mL concentrate required.

For example –

350 litre spray tank X 0.75 = 262.5mL concentrate

A similar calculation may be used for incremental volumes.

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 Cover Spray Mixture Preparation Chart.

7.4.1.2.3 Cover Spray Mixture Preparation Chart

The business shall maintain a Cover Spray Mixture Preparation Chart (refer Attachments 9 & 10) or similar record in close proximity to the spray mixture preparation area at the time of making up the spray mixture. A chart shall be prepared for each spray unit used by the business for cover spraying under this Operational Procedure.

The chart shall provide the following details –

(a) the identification of the spray equipment to which the chart applies;
(b) if applicable, the gear and engine rpm at which the tractor must be operated;
(c) the total volume in litres of the spray tank when filled to the maximum mixture level mark;
(d) the volume in millilitres (mL) of a concentrate containing 400g/L dimethoate required to achieve a mixing rate of 75mL per 100 litres of spray mixture when filled to the maximum mixture level mark;
(e) the volume in millilitres (mL) of a concentrate containing 400g/L dimethoate required to achieve a mixing rate of 75mL per 100 litres of spray mixture for any known incremental volumes used;

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

7.4.1.2.4 Cover Spray Treatment

The Spray Operator shall undertake cover sprays commencing at least five weeks before harvest and continuing until the completion of harvest.

It is recommended that all other fruit fly host trees on the property with fruit at a susceptible stage are treated to control fruit fly.

The Spray Operator shall ensure that the spray mixture is applied with sufficient volume, and in a manner that provides sufficient penetration and distribution to ensure thorough coverage of all fruit.

Pre-harvest cover sprays must be reapplied if rain sufficient to cause run-off occurs within two hours of spraying.

Fruit from treated trees should not be harvested until the specified withholding period has been complied with after the cover spray application.

7.4.1.2.5 Cover Spray Mixture Preparation

The Spray Operator shall prepare the chemical mixture at least daily or more frequently as required.

7.4.1.2.6 Making Up the Cover Spray Mixture

Using a clean graduated measuring vessel, measure the amount of concentrate required to achieve 75mL per 100 litres of mixture of a 400g/L dimethoate concentrate for the required volume of mixture.

Suitable measuring vessels include graduated plastic or glass measuring cylinders.

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 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 2 minutes before commencing the spray operation. Some equipment may require extended periods of mixing to fully dilute the chemical in the water.

Spray equipment must have a means of continuous mixing of 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.

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

7.4.1.2.7 Cover 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.

7.4.1.2.8 Cover Spray Mixture Preparation and Treatment Records

The Spray Operator must record details of all cover spray mixture preparation and cover spray treatment using a Cover Spray Mixture Preparation and Treatment Record (refer Attachment 11) or records which capture the same information.

The business's cover spray treatment records must identify –

- the date of cover spray mixture preparation;
- the time of cover spray mixture preparation;
- volume of concentrate used (millilitres) in the spray mixture;
- the trade name of the concentrate used;
- the total volume (litres) of the made up spray mixture;
- any other pesticides or additives in the spray mixture;
- the date of application;
- the spray equipment used;
- the block/s treated;
- the number of trees/hectares sprayed;
- the identification of the Spray Operator.

7.5 Harvesting

The Harvest Supervisor shall oversee the harvest process to ensure only conforming mangoes are harvested for certification under this Operational Procedure.

7.5.1 Harvest Inspection

The Harvest Supervisor shall select a minimum of 10 fruit from every 500kg harvested. Fruit shall be checked for hard mature condition, as defined above and freedom of fruit fly infestation.

Fruit in the sample showing symptoms of fruit fly infestation (i.e. softening, spotted areas weeping with sap or showing bruising or breakdown) must be cut to expose the flesh and examined for the presence of live fruit fly larvae.

The Harvest Supervisor shall immediately advise the Certification Controller of the detection of live fruit fly larvae.

Harvest inspection shall be completed on mangoes that are to certified in accordance with this procedure, and –

(a) in the case of a business that is a different business from the packer - prior to completion of the Harvest Inspection Declaration and delivery to the packer;
(b) in the case of a business which both grows and packs the fruit - harvest inspection is not required and is carried out in conjunction with fruit receival inspection.

7.5.2 Harvest Inspection Equipment

The business shall maintain a copy of the mango industry fruit firmness standard (refer attachment 12) that shows how to determine ripeness of fruit and inspection equipment such as a hand lens, microscope or other device that provides X10 or greater magnification for examination of suspect fruit.

7.5.3 Harvest Inspection Records

The Harvest Supervisor shall maintain records of harvest inspection of fruit.

Harvest inspection records shall be in the form of a Harvest Inspection Record (refer Attachment 13) or a record which captures the same information.

Harvest inspection records must include –

- the Interstate Produce (IP) number of the business that grew the produce;
- the date of inspection;
- the block/s from which the fruit was harvested;
- the number of bins/crates harvested;
- the firmness scale;
- the number of fruit cut and examined;
- the presence or absence of fruit fly;
- the Certification Controller's name and signature.

7.5.4 Action Following Identification of Nonconforming Product at Harvest

If any fruit is found to be not of hard mature condition, as defined above, or infested with live fruit fly at harvest the Certification Controller shall take the following actions –

(a) all mangoes harvested from the source block on the day of the detection shall be rejected for certification under this Operational Procedure; and
(b) as soon as practical and not more than one business 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.

7.5.5 Rejected Product

Rejected product shall be isolated in an area that is clearly identified to prevent mixing with conforming product. Product may be consigned to another market whose requirements can be met.

7.5.6 Harvest Inspection Declaration

A business that grows mangoes must be accredited under Part A of this Operational Procedure and the business packing the mangoes must be accredited under Part B of this Operational Procedure.

The business growing the mangoes shall supply a Harvest Inspection Declaration (refer Attachment 14) with each delivery of mangoes supplied to the packing business for certification.

A declaration is not required where the business that grows the fruit is the same business that packs, post-harvest treats and certifies the fruit under this Operational Procedure.

The declaration must identify –

(a) the Interstate Produce (IP) Number of the accredited business that grew and conducted the harvest inspection on the mangoes;
(b) the identity of the block or blocks in which the mangoes were grown;
(c) results of harvest inspection for hard mature condition;
(d) that the mangoes were inspected at harvest and found free of live fruit fly infestation;
(e) details of any cover spray treatment that may have been applied.

PART B – (Covers the packer activities of fruit receival (verify hard mature condition), post-harvest treatment, sorting, grading and packing, inspection (verify hard mature condition and freedom from fruit fly) and certification).

7.6 Fruit Receival

The Fruit Receival Officer shall ensure that –

(a) all mangoes received for certification under this Operational Procedure are supplied by a grower accredited under Part A;
(b) all mangoes are in hard condition, as defined above;
(c) the hard mature condition status of mangoes is clearly identified at receival at the packing facility to prevent mixing of conforming and nonconforming mangoes.

Any mangoes received which are not in hard mature condition or clearly identified shall be regarded as nonconforming for the purpose of this Operational Procedure.

7.6.1 Receival of Mangoes Grown by another Business

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

(a) each delivery of mangoes supplied by another business for certification under this Operational Procedure is accompanied by a Harvest Inspection Declaration (refer Attachment 14);
(b) fruit supplied for certification has been inspected for hard mature condition and found free from live fruit fly infestation;
(c) details of any bait or cover spray that may have been applied shall be included on the Harvest Inspection Declaration;
(d) grower identification and maturity details are maintained for all fruit received and certified under this Operational Procedure from receival to certification and dispatch.

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

7.6.2 Fruit Receival Inspection

The Fruit Receival Officer shall carry out an inspection of all fruit received for certification under this Operational Procedure.

The Fruit Receival Officer shall select a minimum of 10 fruit from every 500kg of fruit received. Fruit shall be checked for hard mature condition, as defined above and freedom of fruit fly infestation.

Fruit shall be selected from any fruit showing the greatest level of colouring, and any fruit with softening, bruising or other damage which may be a potential site for fruit fly infestation.

Fruit in the sample showing symptoms of fruit fly infestation (i.e. softening, spotted areas weeping with sap or showing bruising or breakdown) must be cut to expose the flesh and examined for the presence of live fruit fly larvae.

The Certification Controller shall be immediately advised on detection of live fruit fly larvae.

A business which both grows and packs the mangoes, conducts the harvest inspection in conjunction with the fruit receival inspection.

7.6.3 Fruit Receival Inspection Equipment

The business shall maintain a copy of the industry standard that shows how to determine fruit firmness and inspection equipment such as a hand lens, microscope or other device that provides X10 or greater magnification for examination of suspect fruit.

7.6.4 Fruit Receival Inspection Records

The Fruit Receival Officer shall maintain records of fruit receival inspection.

Fruit receival inspection records shall be in the form of a Fruit Receival Inspection Record (refer Attachment 15) or a record which captures the same information.

Fruit receival inspection records must include –

- the name and Interstate Produce (IP) number of the business that grew the produce;
- the date of inspection;
- the block/s from which the fruit was harvested;
- number of bins/crates received;
- the maturity status of the fruit, as defined above;
- the number of fruit cut and examined;
- the presence or absence of fruit fly;
- the Fruit Receival Officer's name and signature.

7.7 Post-Harvest Treatment

Mangoes certified under this Operational Procedure must be post-harvest treated by an accredited business (pack- house).

Post-harvest treatment means treated by either –

(a) full immersion of the fruit in a mixture containing 400mg/L dimethoate for a period of not less than 60 seconds e.g. as per ICA-01;

OR

(b) flood spraying the fruit in a single layer with a mixture containing 400mg/L dimethoate in a high volume application of at least 16L/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 e.g. as per ICA-02.

The post-harvest treatment of all mango fruit must be undertaken by a business (pack-house) that holds a current accreditation for an ICA arrangement for either, Operational Procedure ICA-01 or ICA-02, and the arrangement must include mangoes in the produce types covered under the scope of the accreditation.

Post-harvest treatment must be the last treatment before packing.

7.8 Sorting, Grading and Packing

All mangoes sorted, graded and packed for certification under this Operational Procedure shall be inspected for evidence of hard mature condition, as defined above and fruit fly infestation during the normal sorting, grading and packing process.

Any fruit not in hard mature condition and/or showing symptoms of fruit fly infestation (i.e. softening, spotted areas weeping with sap or showing breakdown) must be rejected. Fruit showing symptoms of fruit fly infestation, shall be cut to expose the flesh and examined for the presence of live fruit fly larvae. The Certification Controller shall be immediately advised on detection of live fruit fly larvae.

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

7.8.1 Identification and Control of Nonconforming Product at Sorting, Grading and Packing

All fruit that are found to be nonconforming (i.e. found not to be in hard mature condition and/or showing symptoms of fruit fly infestation) shall be segregated to prevent mixing with conforming product during the sorting, grading and packing operation.

Examples of segregation of nonconforming fruit shall include –

(a) locating nonconforming fruit in a defined and separate area to conforming fruit and maintaining separation until the fruit is sorted, graded and packed;

OR

(b) placing nonconforming fruit in reject bins or other containers which are clearly marked or significantly different in appearance to distinguish them from conforming fruit.

Other methods may be used provided they clearly identify nonconforming product from conforming product.

7.9 Packing

A business which packs conforming (i.e. meets the requirements of this Operational Procedure) and nonconforming fruit shall implement systems to identify the condition status of fruit after packing to prevent mixing of conforming and nonconforming fruit.

7.9.1 Identification of Conforming and Nonconforming Fruit after Packing

Examples of acceptable methods of identifying the condition status of conforming and nonconforming fruit after packing include –

(a) using packaging that differs significantly in appearance;

OR

(b) immediately marking each package of conforming fruit in a manner that clearly identifies the fruit as conforming to the requirements specified under this Operational Procedure.

7.10 Packed Product Inspection

The Packed Product Controller shall randomly select 2% or 600 units, whichever is greater of packed product for inspection.

The Packed Product Controller shall advise the Certification Controller of any problems or potential problems detected so that corrective action can be implemented.

Packed Product Inspection may be carried out –

(a) as an in-line inspection during grading and packing of a consignment;

OR

(b) as an end-point inspection following assembly of a consignment.

The Packed Product Controller shall ensure that packed product is stacked in an orderly fashion so that produce packed since the last sample package can be easily identified.

7.10.1 Sampling for End-point inspection

End-point inspection must be conducted after the consignment has been consolidated but prior to certification and dispatch.

Each consignment of produce to be certified shall be sampled at the rate of either 2% or 600 units, whichever is greater. The sample shall be selected at random from packages i.e. trays containing final packed product. Sample packages shall be selected at random from within the consignment.

7.10.2 Sampling for In-Line Inspection

The in-line inspection method is only available at the first point of packing of the mangoes. For in-line inspections, the Packed Product Controller must be able to identify all fruit which has been packed in that time period since the previous inspection when the fruit had passed inspection.

The in-line inspection shall involve selection of a sample of packed product from a lot, packed on the one day for certification under this Operational Procedure. Packed fruit shall be sampled at the rate of either 2% or 600 units, whichever is greater. The sample shall be selected at random from the packages i.e. trays of final packed product as it leaves the packing line in the packing shed for consolidation.

7.10.3 Examination of the Sample

The Packed Product Controller shall carry out 100% inspection of the fruit from each sample package.

Each fruit in the sample package shall be removed and all surfaces examined for compliance with hard mature condition, as defined above (refer Attachment 12) and the 2016 Mango Industry Quality Standard for class one fruit (refer Attachment 16). Each fruit shall be inspected for the absence of broken skin or symptoms of fruit fly infestation, which include sting marks, splits, discolouring, deformities or blemishes:

Fruit fly 'sting marks' often appear to be pin pricks on the skin of the fruit.

Sting marks are a puncture mark caused by the female Fruit fly with its ovipositor as it positions eggs within the host produce. Once the eggs hatch the larvae burrow towards the centre of the host produce. Sting marks are often cause softness under the skin.

If a sting mark is found cut at the sight of the mark and investigate the flesh of the fruit for signs of Fruit fly larvae. If Fruit fly larvae is present the flesh will be discoloured and mushy.

Fruit fly larvae are creamy white and up to 9mm in length, with a slightly conical shaped body and 11 segments. When examined under a hand lens the larvae's thin head has small black mouth parts. There are 3 pairs of spiracles (small raised structures used for breathing) grouped together at the thick end of the larvae.

When the larvae is disturbed, and especially if exposed to sunlight, they can draw their body in to an 'n' shape and 'flick' themselves up to 10 cm in any direction. This is a dispersal mechanism of the mature QFF larvae and is diagnostic for the species

7.10.4 Identification of Sample Packages

Sample packages shall be sequentially numbered during the day of packing.

The Packed Product Controller shall identify each sample package with a Packed Product Sample (PPS) number by placing either a stamp or sticker bearing the lettering PPS No., on the exposed end of the package, then marking on or below the identifier the sequential sample number and their initials.

Where consignments are palletised, the sample packages examined by the Packed Product Controller shall be stacked on the pallet with the PPS No. visible on the outside of each pallet packed for certification under this Operational Procedure.

An example of a PPS No. stamp or sticker is shown as Attachment 17.

7.10.5 Action Following Identification of Nonconforming Packed Product

The Certification Controller shall be notified of any rejection. The Certification Controller shall advise the sorting, grading and packing staff of the non-conformance and conduct an investigation to identify the cause.

7.10.5.1 In-Line Inspection

If any sample package contains a fruit that is not in a hard mature condition, doesn't meet class one standard, or has symptoms of fruit fly infestation, the Packed Product Controller shall –

(a) reject the sample package;
(b) withdraw and isolate all product packed since the previous sample package was selected; and
(c) stop the packing line.

Once any problems have been identified and rectified, sorting, grading and packing may recommence.

The Packed Product Controller shall note in the 'Comments' section of the Packed Product Inspection Record next to the entry for the sample package which failed inspection, the reason for failure and the number of withdrawn packages.

Following resumption of sorting, grading and packing, the Packed Product Controller shall select an additional 3 sample packages from the withdrawn packages.

The Packed Product Controller shall carry out 100% inspection of the fruit in the additional sample packages to ensure the fruit is in a hard mature condition meets grade one standard.

Additional sample packages shall be given the next three Packed Product Sample (PPS) numbers after the package which initially failed inspection. The inspection results shall be entered on the inspection record.

If all 3 additional sample packages are found to conform, the withdrawn packages and the three sample packages may be passed for certification and returned to the product assembly point.

If any of the additional sample packages contain a nonconforming fruit, all withdrawn packages shall be rejected.

7.10.5.2 End-Point Inspection

If any sample package contains a fruit that is not in a hard mature condition, of class one standard or has symptoms of fruit fly infestation the entire consignment shall be rejected.

The Packed Product Controller shall note in the 'Comments' section of the Packed Product Inspection Record next to the entry for any sample package which failed inspection, the reason for failure and the number of packages in the rejected consignment.

7.10.6 Rejected Product

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

All rejected packages must be regraded, repacked and reinspected in accordance with this section prior to certification under this Operational Procedure.

Alternatively, rejected packages may be treated and certified in accordance with an alternative quarantine entry condition, or consigned to markets that do not require certification of hard mature condition, treatment and inspection for fruit fly.

7.10.7 Packed Product Inspection Records

The Packed Product Controller shall maintain records of the results of packed product inspection.

Packed product inspection records shall be in the form of a Packed Product Inspection Record (refer Attachment 18) or a record which captures the same information.

Packed product inspection records must include –

- the name and Interstate Produce (IP) Number of the business that operates the approved facility in which the fruit was packed;
- the date of inspection of the sample package;
- the sample package sequential number (PPS No.);
- the type of inspection, in-line or end-point;
- the inspection result for the sample package;
- details of defects or problems detected during inspection;
- the number of any withdrawn or rejected packages;
- the inspection results and follow-up action following rejection;
- the Packed Product Controller's name and signature.

An example of a completed Packed Product Inspection Record is shown as (Attachment 18).

7.11 Dispatch

7.11.1 Package Identification

The Authorised Dispatcher must ensure that, prior to consignment, each package is marked in indelible and legible characters of at least 5 mm, with-

- the Interstate Produce (IP) number of the accredited business that packed the fruit;
- the words 'MEETS CTM-01'; and
- the date or date code on which the produce was packed;

prior to the issuance of a Plant Health Assurance Certificate by the Business under this Operational Procedure.

7.11.2 Plant Health Assurance Certificates

The Authorised Dispatcher shall ensure a Plant Health Assurance Certificate is completed and signed by an Authorised Signatory of the business prior to dispatch of the consignment from the facility.

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 mangoes;

(b) in the "Grower or Packer" section -

- the name and address of the Accredited Business that was responsible for pre-harvest treatment, if applicable and ensuring hard mature condition of the mangoes. 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 post-harvest treated the mangoes, if applicable;

(d) in the "Treatment" section, where applicable -

- post-harvest treatment details in accordance with the Operational Procedure under which the treatment was applied; and
- pre-harvest treatment details including -

for bait spraying -

- in the Date column, the most recent date or dates of pre-harvest bait spraying of the source block/s;
- in the Treatment column, the words “Pre-Harvest Spray”;
- in the Chemical (Active Ingredient) column, the words “1150 g/L maldison” or “0.24 g/L Spinosad”;
- in the Concentration column, the words “at 435 mL/100 L” or “at 153.84 mL/100L; and
- in the Duration and Temperature column, the words “bait sprayed”;

for cover spraying -

- in the Date column, the most recent date or dates of pre-harvest treatment of the source block/s;
- in the Treatment column, the words “Pre-Harvest Spray”;
- in the Chemical (Active Ingredient) column, the words “400 g/L dimethoate”;
- in the Concentration column, the words “at 75 mL/100 L”; and
- in the Duration and Temperature column, the words “cover sprayed”;

Individual Plant Health Assurance Certificates must 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.

Plant Health Assurance Certificates must be completed, issued and distributed in accordance with the Work Instruction *Guidelines for Completion of Plant Health Assurance Certificates* [WI-02].

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

7.11.3 Plant Health Assurance Certificate Distribution

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

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

7.11.4 CAA System Records

The Business must maintain the following records –

PART A

(a) Property Plan for each property. Refer Attachment 3;
(b) Chemical Mixture Tank Calibration Certificate, were applicable. Refer Attachment 4;
(c) Cover Spray Mixture Preparation Chart, were applicable. Refer Attachments 0 and 10;
(d) Cover Spray Mixture Preparation and Treatment Record, were applicable. Refer Attachment 11;
(e) Harvest Inspection Record. Refer Attachment 13.

PART B

(a) A copy of each Harvest Inspection Declaration received. Refer Attachment 14;
(b) Fruit Receival Inspection Record. Refer Attachment 15;
(c) Packed Product Inspection Record. Refer Attachment 18;
(d) the duplicate copy of each Plant Health Assurance Certificate issued by the business. Refer Attachment 2.

ICA system records must 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.

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

7.12 CAA System Documentation

The Business must maintain the following documentation-

(a) a copy of the Business's current Application for Accreditation;
(b) a current copy of this Operational Procedure;
(c) a current Certificate of Accreditation for this Interstate Certification Assurance Arrangement.

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

8 ATTACHMENTS

Attachment 1	Accreditation of an Accredited Certifier for a Certification Assurance Accreditation (CAA) Arrangement [CAF-71]	Blank (Page 1 and 2)
Attachment 2	Plant Health Assurance Certificate [CAF-16]	Example
Attachment 3	Property Plan [CAF-144]	Blank
Attachment 4	Chemical Mixture Tank Calibration Certificate [CAF-03]	Blank
Attachment 5	Bait Spray Equipment Application Rate Calibration Test Record [CAF-145]	Blank
Attachment 6	Bait Spray Mixture Preparation Chart [CAF-100]	Blank
Attachment 7	Bait Spray Mixture Preparation Chart [CAF-100]	Example
Attachment 8	Bait Spray Mixture Preparation and Treatment Record [CAF-101]	Blank
Attachment 9	Cover Spray Mixture Preparation Chart [CAF-102]	Blank

Attachment 10	Cover Spray Mixture Preparation Chart [CAF-102]	Example
Attachment 11	Cover Spray Mixture Preparation and Treatment Record [CAF-103]	Blank
Attachment 12	Mango industry fruit firmness standard	N/A
Attachment 13	Harvest Inspection Record [CAF-146]	Blank
Attachment 14	Harvest Inspection Declaration [CAF-147]	Blank
Attachment 15	Fruit Receival Inspection Record [CAF-148]	Blank
Attachment 16	2016 Mango Industry Quality Standard for grade one fruit	N/A
Attachment 17	PPS No. stamp or sticker [CAF-149]	Blank/Example
Attachment 18	Packed Product Inspection Record [CAF-150]	Blank

Queensland Government

Application for accreditation of an accredited certifier for a Certification Assurance Accreditation (CAA) 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 a Certification Assurance Accreditation (CAA) 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 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 fee 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.

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*.)

Certificate Number: 9999999

Consignment Details (Please print)

Consignor	Consignee
Name: Joes Mangoes Pty Ltd	Name: F & V Wholesalers Pty Ltd
Address: Orchard Road, Mareeba QLD 4880	Address: South Australian Produce Market, Burma Road, Poorooka SA 5095

Reconsigned To (Splitting consignments or reconsigning whole consignments)	Method of Transport (Provide details where known)
Name	☒ Road — Truck/Trailer Registration
Address	☐ Rail — Consignment
	☐ Air — Airline/Flight no.
	☐ Sea — Vessel Name & Voyage no.

Certification Details (Please print)

Accredited Certifier that Prepared the Produce	Grower or Packer
Name: Central Packing Co Pty Ltd	Name: Joes Avocadoes Pty Ltd
Address: Kennedy Highway Walkmin QLD 4872	Address: Orchard Road, Mareeba QLD 4880

IP No. of Acc. Certifier	Brand Name or Identifying Marks (as marked on packages)	Date Code (as marked on packages)
Q 9999	Joe's Mangoes	8/11/2018

Facility No.	Procedure Code	Expiry Date	Facility No.	Procedure Code	Expiry Date
01	CTM-01	01/12/18			/ /

Number of Packages	Type of Packages (e.g. trays, cartons)	Type of Produce	Authorisation for Split Consignment
2000	Trays	Mangoes	

Date	Treatment	Chemical (Active Ingredient)	Concentration	Duration and Temperature
/ /	☐ Dipping	Dimethoate	400ppm	☐ One min. ☐ 10 sec. then wet for 60 sec.
/ /	☐ 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			
08/11/18	Pre-Harvest Spray, 400g/L dimethoate at 75mL/100L, cover sprayed			

Additional Certification: Meets CTM-01

Declaration

I, an Authorised Signatory of the accredited certifier that prepared the plants or plant produce described above, hereby declare that the plants or plant produce 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.

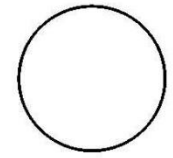
Authorised Signatory's Name (Please print)	Signature	Date
Arthur John Signatory	*A J Signatory*	8/11/18

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

CAF-16 (08/16) V3

Attachment 2

PROPERTY PLAN



CAF-144 (09/18) V1

Attachment 3

PROPERTY PLAN DETAILS

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

1. the location of blocks on which mangoes 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	Cultivar	Number of Mango Trees in Block	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
				YES/NO

CAF-144 (09/18) V1

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 CTM-01 *Condition and Treatment of Mangoes* for the following-

Pre-harvest treatment/s to be covered *(☑ tick one box only)*-

- ☐ Cover Spraying only
- ☐ Bait Spraying only
- ☐ Cover & Bait Spraying

Chemical/s to be covered *(☑ one or more boxes as applicable)*-

- ☐ Dimethoate (cover spraying)
- ☐ Maldison (bait spraying)

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 Certification Assurance Accreditation (CAA) Arrangement* covering the arrangement;
(c) application must be made to amend any of the current details in the *Application of an Accredited Certifier for a Certification Assurance Accreditation (CAA) Arrangement* [CAF-71] or this Property Plan.

..... / /
Signature Date

Attachment 3

CHEMICAL MIXTURE TANK CALIBRATION CERTIFICATE

EQUIPMENT CALIBRATED

Name and Address of Owner of Equipment: _____

_____

Type of equipment (eg 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 APPLICATION RATE CALIBRATION TEST RECORD

1. Bait Spray Equipment Calibration Tests must be carried out prior to commencement of the season each year and within four weeks of commencement of treatment.
2. Use clean water in the equipment during calibration tests to avoid operator exposure to chemicals.
3. Record the time taken to discharge 100 mL of water at normal operating conditions.

Date of Test	Time Required to Discharge 100 mL (seconds)	Testing Officer's Name	Testing Officer's Signature
/ /			
/ /			
/ /			
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BAIT SPRAY MIXTURE PREPARATION CHART

Spray Unit _____

Tractor (*if applicable*) _____ Gear ____

Engine RPM/Throttle Setting _____

Concentrate (*Trade Name*)_____

Active Ingredient _____ Conc. ____ /

Concentrate Mixing Rate ___ mL/litre of mixture

Full Tank

Volume of Water = _____ Litres

Volume of Yeast Autolysate = _____millilitres

Volume of Concentrate = _____millilitres

Part Fill

_____mL Yeast Autolysate and

_____mL Concentrate /_____Litres Water

_____mL Yeast Autolysate and

_____mL Concentrate /_____Litres Water

Prepared by: _____ _____ / /

Printed Name Signature Date

CAF-100 (06/17) V1

BAIT SPRAY MIXTURE PREPARATION CHART

Spray Unit Silvan 400

Tractor *(if applicable)* Ford 5000 Gear 2 (high)

Engine RPM/Throttle Setting 2500

Concentrate *(Trade Name)* HY-MAL Insecticide

Active Ingredient Maldison Conc. 1150 g/L

Concentrate Mixing Rate 435 mL/litre of mixture

Full Tank

Volume of Water = 400 Litres

Volume of Yeast Autolysate = 8000 millilitres

Volume of Concentrate = 1740 millilitres

Part Fill

4000 mL Yeast Autolysate and

870 mL Concentrate / 200 Litres Water

2000 mL Yeast Autolysate and

435 mL Concentrate / 100 Litres Water

Prepared by: Sam Sprayer (Printed Name) S Sprayer (Signature) 23/9/19 (Date)

CAF-100 (06/17) V1

BAIT SPRAY MIXTURE PREPARATION AND TREATMENT RECORD

BAIT SPRAY MIXTURE PREPARATION						BAIT SPRAY TREATMENT					
Date	Time	Volume of Mixture (Litres)	Volume of Yeast Autolysate (if applicable)	Volume of Concentrate	Trade Name of Concentrate	Date of Application	Spray Equipment Used	Block Treated (Code)	Number of Trees Treated	Spray Operator's Name	Signature

CAF-101 (06/17) V1

Attachment 8

COVER SPRAY MIXTURE PREPARATION CHART

Spray Unit _____

Tractor (*if applicable*)_____ Gear_____

Engine RPM/Throttle Setting _____

Concentrate (*Trade Name*) _____

Active Ingredient _____ Conc. _____ g/L

Concentrate Mixing Rate _____ mL/litre 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

_____ mL Concentrate / _____Litres Mixture

Prepared by: _____ _____ / /

Printed Name Signature Date

CAF-102 (06/17) V1

COVER SPRAY MIXTURE PREPARATION CHART

Spray Unit Hardi Mini-Variant 600

Tractor *(if applicable)* Ford 5000 Gear 3 high

Engine RPM/Throttle Setting 2500

Concentrate *(Trade Name)* Genfarm Dimethoate 400 Insecticide

Active Ingredient Dimethoate Conc. 400 g/L

Concentrate Mixing Rate 75 mL/100L of mixture

Full Tank

Full Spray Tank Volume = 600 Litres

Volume of Concentrate = 450 millilitres

Part Fill

75 mL Concentrate / 100 Litres Mixture

187 mL Concentrate / 250 Litres Mixture

300 mL Concentrate / 400 Litres Mixture

375 mL Concentrate / 500 Litres Mixture

Prepared by: Sam Sprayer (Printed Name) S Sprayer (Signature) 23/9/19 (Date)

CAF-102 (06/17) V1

COVER SPRAY MIXTURE PREPARATION AND TREATMENT RECORD

COVER SPRAY MIXTURE PREPARATION						COVER SPRAY TREATMENT					
Date	Time	Volume of Concentrate (Millilitres)	Volume of Mixture (Litres)	Trade Name of Concentrate	Other Pesticide(s) or Additive(s)	Date of Application	Spray Equipment Used	Block Treated (Code)	Number of Trees/Hectares Treated	Spray Operator's Name	Signature

CAF-103 (06/17) V1

Attachment 11

Fruit firmness (ripeness)

Fruit ripeness is determined by holding the fruit in the palm of the hand and gently squeezing with the fingers or thumb when the fruit is hard, or with the whole hand when the fruit is softer. Considerable care is required when assessing softness of near-ripe and ripe fruit, since excessive finger pressure can cause bruising. It is better to use whole hand pressure with these fruit.

The 'give' or deformation of the fruit is rated using the following scale (based on White et al. 2009).

Softness rating scale

Rating	Description
0	Hard (no 'give' in the fruit)
1	Rubbery (slight 'give' in the fruit)
2	Sprung (flesh deforms by 2–3 mm with extreme thumb pressure)
3	Firm soft (whole fruit deforms with moderate hand pressure)
4	Soft (whole fruit deforms with slight hand pressure)

A: Grasping with whole hand (correct).

B: Pressing with the thumb (incorrect).

HARVEST INSPECTION RECORD

Date	Grower IP Number	Source Block/s	No. of Bins/Crates	Firmness Rating (No greater than "0")	No. of Fruit Cut & Examined	Fruit Fly Present ☑		Details	Certification Controller	
						Yes	No		Name	Signature

CAF-146 (09/18) V1

Attachment 13

PRE-HARVEST TREATMENT AND HARVEST INSPECTION DECLARATION

A Pre-Harvest Treatment and Harvest Inspection Declaration must be provided to the packer to cover the mangoes delivered for certification under CTM-01 from each source block each day, or at the time of changing from one block to another block, whichever is the earlier.

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, trays)*

of _____ *(type of produce)*

identified by - _____ *(package identification)*

delivered to -

_____ *(Accredited Certifier name)*

Interstate Produce (IP) No. **Q** | | | | | on- / / *(date)*

for grading, packing, post-harvest treatment (if required) and certification under CAA Operational Procedure CTM-01 *(☑ as appropriate)*, declare-

1. ❑ The last pre-harvest treatment of the source block was –

   ❑ a **cover spray** containing 75 mL of a concentrate containing -

   ❑ 400 g/L dimethoate;

   ❑ a **bait spray** containing 435 mL of a concentrate containing 1150 g/L maldison plus 2 litres yeast autolysate protein lure per 100 litres of bait spray mixture.

2. The identity of the source block and date of the last pre-harvest treatment are -

Reference Code or Number of Block	Date of Last Pre-harvest Treatment

3. The mangoes were inspected at harvest and found -

   ❑ to meet hard mature condition/firmness rating "0";

   ❑ free from live fruit fly larvae;

   ❑ free from dead fruit fly larvae.

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

FRUIT RECEIVAL INSPECTION RECORD

Date	Grower's ID/IP No.	Source Block	Cultivar	No. of Bins/ Crates/Trays	Firmness Rating (No greater than "0")	No. Fruit Cut & Examined	Fruit Fly Present ☑		Details	Fruit Receival Officer	
							Yes	No		Name	Signature

CAF-148 (09/18) V1

2016 Mango Industry Quality Standards

AMIA has worked with major retailers to develop uniform quality standards for class 1 fruit. The table below describes the new uniform quality standards for class 1 fruit.

OVERALL DEFECTS	
IMMATURITY	KP: ≥15% DM and ≥14° brix at eat ripe. Calypso: ≥15% DM and ≥14° brix at eat ripe. Honey Gold: ≥15% DM and ≥14° brix at eat ripe. R2E2: ≥13% DM and ≥12° brix at eat ripe
COLOUR	Colour stage: KP: minimum rating 3. All other varieties: minimum rating 4
FIRMNESS	Firmness: KP, HG, Calypso, R2E2: 2 to 3
TEMPERATURE	12°C-18°C
MAJOR DEFECTS	
INSECTS	Nil (Live Scale: Nil)
DISEASE	Nil
BROKEN SKIN	Nil
CHILL DAMAGE	Nil
INTERNAL	Nil
RESIN CANAL DISCOLOURATION	Nil
SUN BURN DARK / DEPRESSED	Nil
SEVERE SKIN BLEMISH (>10% OF SKIN)	Nil
LENTICEL STAR CRACKED	Nil
MINOR DEFECTS	
LIGHT	
LENTICEL LIGHT	≤ rating 3 Mango Quality Assessment Manual (MQAM)* rating scale
SUN BURN LIGHT	≤25% No browning. MQAM page 15, picture 2
RUSETT LINES	≤10%
MEDIUM	
PINK SPOT	Rating 1 (less than 6 spots, or an area of 1cm²)
SAP BURN	≤4cm² ≤ cumulative 10%
HEALED SCARRING	≤4cm² ≤ cumulative 10%
CLEAVAGE SCAR	≤4cm² ≤ cumulative 10%
BROWNING SKIN MARKS	≤4cm² ≤ cumulative 10%
TOLERANCE	
MAJOR	2%
MINOR	10%

** For a copy of the MQAM please contact the AMIA team 07 3278 3755*

Attachment 16

PPS No. Stamp or Sticker

Marking Sample Packages after Packed Product Inspection

Following inspection, the Packed Product Controller must-

(a) mark one end of each sample package by applying a stamp or sticker with the PPS No. (Packed Product Sample No.) and their initials as shown below;

(b) ensure that the PPS No. stamp or sticker is visible on the exposed end of the package when the package is assembled on the pallet.

Stamp or Sticker Design (Example Only)

Completed Stamp or Sticker (Example Only)

Packed Product Inspection Record

Fruit Variety:		Interstate Produce (IP) Number: Q									
Date of Inspection	PPS No	Inspection		Hard Mature		Damaged Skin		COMMENTS (Note any defects or problems detected during inspection and the number of any withdrawn or rejected packages)	Packed Product Controller	
Tick applicable columns→		In-Line	End-Point	Yes	No	Yes	No		Printed Name	Signature

CAF-150 (09/18) V1

Attachment 18