Pre-harvest Treatment, Hard Mature Condition and Inspection Standards for 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 the certification of select mango cultivar fruit for disinfestation of fruit fly for movement under an Interstate Certification Assurance (ICA) arrangement.

2. SCOPE

This procedure is only applicable for B74 (Calypso), Kensington Pride (KP), Honey Gold, and R2E2 mango fruit cultivars to select interstate markets.

This procedure covers the certification of Class 1 quality mangoes that have been pre-harvest treated, inspected to meet hard mature condition, as described in the Mango Grading and Firmness Standard with a softness rating of "0" (refer Attachment 7), and inspected for fruit fly infestation symptoms following packing for consignment by businesses operating under an ICA arrangement in the Northern Territory.

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

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

1) WI-02: Guidelines for the Completion of Plant Health Assurance Certificates.
2) Mango Grading and Firmness Standard (Attachment 7)

4. DEFINTIONS

Accredit	means to authorise nominated staff within a Business to issue Assurance Certificates.
Accrediting Authority	means the Government Department responsible for accrediting a Business under this Operational Procedure.
Act	means the *Plant Health Act 2008*.
Application for accreditation	means an Application for Accreditation arrangement.
APVMA	means the Australian Pesticides and Veterinary Medicines Authority.
Assurance certificate	means a Plant Health Assurance Certificate (Attachment 1).
Authorised signatory	means a person whose name and specimen signature is included as an Authorised Signatory with the Business's Application for Accreditation form.
Business	means the legal entity responsible for the operation of the facility and ICA/CA arrangement detailed in the Business's Application for Accreditation.
B74	means the B74 cultivar mango, also known as Calypso cultivar.
Certification Assurance(CA)	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.
Certified/Certification	means covered by a valid Plant Health Assurance Certificate (Attachment 1).
Class 1	means the first class of mango fruit graded within defect standards as defined by the 2016 Mango Industry Quality Standards. Class 1 also incorporates the sub-group of 'Premium' grade fruit which represents fruit with no blemishes and high blush.
End-point inspection	means the process by which a representative sample is drawn and inspected from the finalised consignment prior to certification.
Facility	means the location of grading and packing operations covered by the Certification Assurance arrangement.

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 with a softness rating of "0" on the fruit firmness scale of 0-4 as described in the Mango Industry Fruit Firmness Standards. A rating of "0" can be determined by placing the fruit in the palm of the hand a squeezing to ensure it is hard and there is no give.
Homogeneous	means produce that is all of the same cultivar.
Honey Gold	means the Honey Gold cultivar mango.
ICA	means Interstate Certification Assurance. An ICA arrangement is developed to meet the requirements of State and Territory Governments for the certification of produce for interstate and intrastate quarantine purposes.
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.
Inspector	means an inspector appointed under the *Plant Health Act 2008*.
KP	means the KP cultivar mango, also known as Kensington Pride cultivar.
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.
Non-conformance	means a non-fulfilment of a specified requirement.
NT	means the Northern Territory of Australia.
Operational Procedure	means this approved ICA 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.
PBB	means Plant Biosecurity Branch.

Plant Health Assurance Certificate	means a certificate issued by an accredited person to state that specified requirements for the production of the plants or plant products have been met.
Premium grade fruit	means mango fruit which has been graded with no blemishes and high blush for retail marketing purposes. Premium class fruit is considered a sub-group within the defect tolerance range of Class 1 grade fruit. Premium grade fruit certified under this ICA arrangement must be referred to as 'class 1' on Plant Health Assurance Certificates.
R2E2	means the R2E2 cultivar mango.
Secure conditions	means conditions of storage that prevent infestation by fruit fly, being either: • unvented packages; • vented packages with the vents secured with gauze/mesh with a maximum aperture of 1.6 mm; • fully enclosed under tarpaulins, hessian, shade cloth, mesh or other covering which provides a maximum aperture of 1.6 mm; • shrink wrapped and sealed as a palletised unit; • fully enclosed or screened buildings, coldrooms, vehicles or other facilities free from gaps or other entry points greater than 1.6 mm.
WA	means the state of Western Australia.

5. RESPONSIBILITIES

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 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 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 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 detection of a 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 Operational 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 non-conforming 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 and freedom of fruit fly, as defined in the Mango Grading and Firmness Standards (attachment 7) with a softness rating scale of “0”;
- identifying all sample packages;
- taking corrective action following identification of non-conforming 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 ICA arrangement.

The **Authorised Signatories** are responsible for:

(a) ensuring, prior to signing and issuing an Assurance Certificate, that produce covered by the certificate has been prepared in accordance with the Business' ICA 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 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.

6. REQUIREMENT

All mango fruit certified under this Operational Procedure must comply with the following requirements:

- pre-harvest treatments; and
- hard mature condition; and
- class 1 fruit condition; and
- harvest inspected; and
- packed product inspected; and
- handled and stored under secure conditions.

6.1. Pre-Harvest Treatment

All mango fruit certified **must** receive pre-harvest treatment.

Pre-harvest treatment **must** be applied to all mango trees grown on the property.

Pre-harvest treated means a cover spray program, prior to harvest in accordance with the APVMA Approved Label directions:

(a) 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 grown on the property;
- 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.

Exemptions from applying a cover spray to all mango tree blocks on the property may be requested, subject to approval at the discretion of the Accrediting Authority, where the Business has blocks of mango trees intended for international export to dimethoate sensitive markets.

To apply for an exemption, the Business **must** have an approved system of identification and segregation of treated and untreated trees and host fruit – refer to section 7.2 Property Plan requirements. The Business **must** have implemented a field hygiene program that prevents the spread of fruit fly. Fruit from a block exempt from cover spray treatment **must not** be certified for export under this ICA arrangement.

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 mature condition with a Fruit Firmness Standards softness of "0". A guide on grading the appropriate fruit firmness can be found in Attachment 7 Mango Grading and Firmness Standard.

6.3. Class 1 Fruit Condition

All mango fruit certified **must** be harvested and dispatched as Class 1 fruit with unbroken skin and in addition to hard mature condition. Class 1 fruit is a uniform quality recognised by retailers, which specifies defect tolerances. Class 1 fruit standards can be found at Attachment 7 Mango Grading and Firmness Standards. These standards reflect the requirements as per the 2016 Mango Industry Quality Standards.

6.4. Harvest Inspection

All mango fruit certified **must** be harvest inspected. This means a sample size of a minimum 10 fruit per 500kg harvested was inspected after harvest and found to be in a hard mature condition and free of live fruit fly infestation symptoms.

6.5. Packed Product Inspection

All mango fruit certified **must** be inspected after packing. This means a sample size of 2% or 600 units, whichever is greater, of fruit is inspected following sorting, grading and packing and found to be in a hard mature condition and free of live fruit fly infestation symptoms.

6.6. Secure Conditions

Mango fruit certified under this ICA arrangement **must** be handled and stored in a secure manner to prevent the infestation of fruit fly in the harvested fruit. This includes implementing systems to ensure the fruit is securely segregated from non-approved cultivars or non-certified fruit which is packed at the approved facility. Secure conditions mean storage that prevents infestation by fruit fly. Options for secure conditions are described under Definitions.

The Northern Territory 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 of the ICA arrangement.

7. PROCEDURE

7.1. Accreditation

7.1.1. Application for Accreditation

A Business seeking accreditation for an ICA arrangement under this Operational Procedure **must** make an application for accreditation at least 10 working days prior to the intended date of commencement of certification of produce.

Applicants **must** provide the details of all plants and plant products they intend to pack and certify under this ICA arrangement. Ensure application form is completed correctly, and all required Attachments are provided. A copy of the application form **must** be maintained for audit purposes.

Each accredited Business is provided with a unique Interstate Produce (IP) number to identify the Business and its produce, plants and plant products for all interstate plant quarantine purposes as ministered by the Certificate of Accreditation.

7.1.2. Audit Process

7.1.2.1. Desk Audit

When the application is received a desk audit is conducted to ensure the application is completed correctly. If it is found to be incomplete the application form will be returned to the Business for completion. Once the desk audit has been passed, an initial/compliance audit will be conducted.

7.1.2.2. Initial Audit

Prior to accrediting a Business, an Inspector carries out an initial audit of the Business 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, applicants will be granted provisional accreditation for a period of 4 weeks and a 'Certificate of Accreditation' for Provisional Certification will be issued (refer 7.1.3).

7.1.2.3. Initial Compliance Audits

In the first year of accreditation an initial compliance audit will be conducted within 4 weeks of accreditation or issuing an assurance certificate pursuant to the Operational Procedure. On completion of successful initial compliance audit the Business will be granted full accreditation.

On completion of a successful compliance audit, annual accreditation is granted to cover the current season, up to a maximum of twelve months from the date of provisional accreditation, and a new 'Certificate of Accreditation' issued (refer 7.1.3).

7.1.2.4. Compliance Audits

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

Ongoing compliance audits are conducted at least once every six months for a Business that operates for more than six months of each year.

Random audits are conducted on a selected number of accredited Businesses 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 processes.

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

7.1.2.5. Re-Accreditation

Accredited Businesses are required to re-apply for accreditation each year the Business seeks to operate under the ICA arrangement. Businesses seeking re-accreditation **must** lodge a renewal application prior to accreditation lapsing, or if accreditation has lapsed, prior to being accredited to certify produce under the ICA arrangement.

A compliance audit is conducted within twelve weeks of the Business applying for re-accreditation each year.

7.1.3. Certification of Accreditation

An accredited Business will receive a 'Certificate of Accreditation for an Interstate Certification Assurance' detailing the facility location, Operational Procedure, scope (type of produce covered and chemical covered) and period of accreditation.

The Business **must** maintain a current 'Certificate of Accreditation for an Interstate Certification Assurance' and make these available on request by an Inspector.

A Business 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 Interstate Certification Assurance' for the facility, procedure and produce type covered and chemical covered by the Assurance Certificate.

7.1.4. Non-conformances and Sanctions

7.1.4.1. Non-conformances

Audits are regularly undertaken to evaluate the effectiveness of implementation of the requirements. If, in the opinion of the auditor, there is evidence indicating that there has been a failure to meet one or more accreditation requirements, the auditor may raise a Non-conformance Report (NCR). Actions required to address the non-conformance **must** be discussed and recorded on the NCR.

If integrity of the accreditation has been significantly compromised, the non-conformance may provide grounds for the suspension or cancellation of the accreditation, and prosecution.

7.1.4.2. Incident Reports

Incident Reports may be raised by intra and/or interstate quarantine authorities to report the detection of a non-conformance in produce certified under this arrangement. An investigation into the incident **must** be conducted and the findings reported back to the originator.

If the integrity of the accreditation has been significantly compromised, the non-conformance may provide grounds for the suspension or cancellation of the accreditation, and prosecution.

7.1.4.3. Suspension and Cancellation

The PBB may suspend or cancel an accreditation when a Business is found to have not complied with any of the following reasons or actions:

1) Obtained accreditation through the provision of false or misleading information;
2) Contravened a procedure requirement that compromises the integrity of the arrangement;
3) Not rectified a non-conformance;
4) Not paid fees owing to PBB.

Any action taken by PBB to suspend or cancel an accreditation will be provided in writing to the Business. This will provide guidance in making an appeal to have the decision reviewed.

7.1.4.4. Prosecution

Businesses found to be operating contrary to the Act may be liable for prosecution.

7.1.4.5. Charging Policy

Plant Biosecurity Branch (PBB) fees will apply to Businesses that participate in ICA arrangements. PBB can be contacted for a schedule of the current fees.

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

7.2. Property Plan

The Certification Controller **must** 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 **must** include the following details:

1) the location of all blocks on which mangoes are grown;
2) the reference number, code or other identification used to identify the block;
3) the cultivar and the number of mango trees planted in the block;
4) the name (if any) used on-farm to identify the block or group of blocks;
5) road access including street name/s;
6) internal roadways within the property;
7) the location and identification of buildings on the property (e.g. house, packing shed, equipment sheds etc.).

If the Business applies for a pre-harvest spray exemption for select blocks, the property plan **must** identify which blocks are to be exempt.

A copy of the Business's property plan/s **must** be included with the Business's Application for Accreditation.

A blank Property Plan is included as Attachment 2 and may be copied for inclusion with the Business's Application for Accreditation.

7.3. Pre-Harvest Treatment

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

Pre-harvest treated means the application of an approved program of cover sprays.

7.3.1. Pre-Harvest Cover Spraying

7.3.1.1. Cover Spray Equipment Calibration

(a) Spray Tank Volume and Calibration

Permanent volume indicator marks **must** 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 **must** include the volume in litres required to fill the tank to that level.

Each volume indicator mark **must** be calibrated with the tank at the normal filling position using a calibrated flow meter. The person conducting the calibration test **must** complete a certificate of calibration of the spray tank which must be available to the auditor at the initial audit and all compliance audits.

A Chemical Mixture Tank Calibration Certificate is shown as Attachment 3.

7.3.1.2. 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:
Number 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.

7.3.1.3. Cover Spray Mixture Preparation Chart

The Business **must** maintain a Cover Spray Mixture Preparation Chart (refer Attachments 4 and 5) or similar record in close proximity to the spray mixture preparation area at the time of making up the spray mixture. A chart **must** be prepared for each spray unit used by the Business for cover spraying under this Operational Procedure.

The chart **must** provide the following details:

1) the identification of the spray equipment to which the chart applies;
2) if applicable, the gear and engine rpm at which the tractor **must** be operated;
3) the total volume in litres of the spray tank when filled to the maximum mixture level mark;
4) 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;

5) 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;
6) the printed name and signature of the person responsible for the chart's preparation and the date of preparation.

7.3.1.4. Cover Spray Treatment

The Spray Operator **must** undertake cover sprays commencing at least five weeks before harvest at a maximum interval of every fourteen days 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 **must** 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 **must not** be harvested until the specified withholding period has been complied with after the cover spray application.

7.3.1.5. Cover Spray Mixture Preparation

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

7.3.1.6. 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.

7.3.1.7. Cover Spray Equipment Maintenance

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

7.3.1.8. 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:

1) the date of cover spray mixture preparation;
2) the time of cover spray mixture preparation;
3) volume of concentrate used (millilitres) in the spray mixture;
4) the trade name of the concentrate used;
5) the total volume (litres) of the made up spray mixture;
6) any other pesticides or additives in the spray mixture;
7) the date of application;
8) the spray equipment used;
9) the block/s treated;
10) the number of trees/hectares sprayed;
11) the identification of the Spray Operator.

7.4. Harvesting

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

7.4.1. Harvest Inspection

The Harvest Supervisor **must** select a minimum of 10 fruit from every 500kg harvested for inspection. Fruit **must** be checked for hard mature condition, as defined in the Mango Grading and Firmness Standards (Attachment 7) with a softness rating of "0", 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 **must** immediately advise the Certification Controller of the detection of live fruit fly larvae.

Harvest inspection **must** be completed on mangoes that are to be 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.

7.4.2. Harvest Inspection Equipment

The Business **must** maintain;

- a copy of the Mango Grading and Firmness Standards (refer Attachment 7) that shows how to determine ripeness of fruit, and
- inspection equipment including a hand lens, microscope or other device that provides X10 or greater magnification for examination of suspect fruit.

7.4.3. Harvest Inspection Records

The Harvest Supervisor **must** maintain records of harvest inspection of fruit.

Harvest inspection records **must** be in the form of a Harvest Inspection Record (refer Attachment 8) or a record which captures the same information.

Harvest inspection records **must** include:

1) the Interstate Produce (IP) number of the Business that grew the produce;
2) the date of inspection;
3) the block/s from which the fruit was harvested;
4) the number of bins/crates harvested;
5) the identification number/code of the bins/crates used;

6) the firmness scale;
7) the number of fruit cut and examined;
8) the presence or absence of fruit fly;
9) the Certification Controller's name and signature.

7.4.4. Action Following Identification of Non-conforming Product at Harvest

If any fruit is found to be not of hard mature condition, as defined in the Mango Grading and Firmness Standard (Attachment 7) with a softness rating of "0", or infested with live fruit fly at harvest the Certification Controller **must** take the following actions:

(a) all mangoes harvested from the source block on the day of the detection **must** 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 **must** be reported to the Accrediting Authority so an investigation may be carried out to determine the cause and rectify any problems.

7.4.5. Rejected Product

Rejected product **must** 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.

Refer to secure conditions for handling and storage of conforming and accredited fruit.

7.4.6. 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 **must** supply a Harvest Inspection Declaration (refer Attachment 9) 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:

1) the Interstate Produce (IP) Number of the accredited Business that grew and conducted the harvest inspection on the mangoes;
2) the identity of the block or blocks in which the mangoes were grown;
3) The identifying numbers of the bins/crates being supplied;
4) results of harvest inspection for hard mature condition;

5) that the mangoes were inspected at harvest and found free of live fruit fly infestation;
6) details of the cover spray treatment that was applied.

Part B – (Covers the packer activities of fruit receival (verify hard mature condition), sorting, grading and packing, inspection (verify hard mature condition and freedom from fruit fly infestation and symptoms) and certification)

7.5. Fruit Receival

The Fruit Receival Officer **must** 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 mature condition, as defined in the Mango Grading and Firmness Standard with a softness rating of "0";

(c) the hard mature condition status of mangoes is clearly identified at receival at the packing facility to prevent mixing of conforming and non-conforming mangoes;

Any mangoes received which are not in hard mature condition or clearly identified **must** be regarded as non-conforming for the purpose of this Operational Procedure.

7.5.1. Receival of Mangoes Grown by another Business

A Business which packs mangoes grown by another Business **must** 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 9);

(b) fruit supplied for certification has been inspected for hard mature condition and found free from live fruit fly infestation and symptoms;

(c) details of any cover spray that may have been applied **must** 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 **must** maintain copies of all declarations received from growers whose produce they pack and certify under this Operational Procedure.

7.5.2. Secure Handling and Storage

This section applies if a Business:

(a) Grows and packs mango cultivars other than B74 (Calypso), Kensington Pride (KP), R2E2 and/or Honey Gold;

OR

(b) Receives and packs mango cultivars other than ICA-69 certified B74 (Calypso), Kensington Pride (KP), R2E2 and/or Honey Gold, and consigns the product to WA

The Business **must** ensure all fruit which is to be consigned under this ICA arrangement is received, handled, stored and packed under secure conditions which prevent infestation by fruit fly.

Fruit **must** be stored in secure conditions within 24 hours.

The Business **must** ensure fruit under this ICA accreditation is segregated from all other mango fruit cultivars or non-ICA-69 accredited fruit.

7.5.2.1. Secure Conditions and Transport

The Business **must** ensure all certified and packed fruit that is to be consigned is stored and transported under secure conditions which prevent infestation by fruit fly.

Secure conditions are defined as one of the following options:

(a) unvented packages;

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

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

(d) shrink wrapped and sealed as a palletised unit;

(e) fully enclosed or screened buildings, cold rooms, vehicles or other facilities free from gaps or other entry points greater than 1.6mm.

7.5.3. Fruit Receival Inspection

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

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

Fruit **must** 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.

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

7.5.4. Action Following Identification of Non-conforming Product at Receival Inspection

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

As soon as practical and not more than one business day from the time of the detection, the detection **must** be reported to the Accrediting Authority so an investigation may be carried out to determine the cause and rectify any problems.

7.5.5. Fruit Receival Inspection Equipment

The Business **must** maintain a copy of the Mango Grading and Firmness Standard (Attachment 7) that shows how to determine fruit firmness. The Business **must** maintain inspection equipment including a hand lens, microscope or other device that provides X10 or greater magnification for examination of suspect fruit.

7.5.6. Fruit Receival Inspection Records

The Fruit Receival Officer **must** maintain records of fruit receival inspection.

Fruit receival inspection records **must** be in the form of a Fruit Receival Inspection Record (refer Attachment 10) or a record which captures the same information.

Fruit receival inspection records **must** include:

1) the name and Interstate Produce (IP) number of the Business that grew the produce;
2) the date of inspection;
3) the block/s from which the fruit was harvested;
4) number of bins/crates received;
5) the identification number/code of the bins/crates used;
6) the maturity status of the fruit, as defined above;
7) the number of fruit cut and examined;
8) the presence or absence of fruit fly;
9) the Fruit Receival Officer's name and signature.

7.6. Sorting, Grading and Packing

All mangoes sorted, graded and packed for certification under this Operational Procedure **must** be inspected for evidence of hard mature condition, as defined in the Mango Grading and Firmness Standard (attachment 7) with a softness rating of "0", class 1 defect tolerance 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 **must** be cut to expose the flesh and examined for the presence of live fruit fly larvae. The Certification Controller **must** be immediately advised on detection of live fruit fly larvae.

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

7.6.1. Identification and Control of Non-conforming Product at Sorting, Grading and Packing

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

Examples of segregation of non-conforming fruit **must** include:

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

OR

(b) placing non-conforming 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 non-conforming product from conforming product.

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

As soon as practical and not more than one business day from the time of the detection, the detection **must** be reported to the Accrediting Authority so an investigation may be carried out to determine the cause and rectify any problems.

7.7. Packing

A Business which packs conforming (i.e. meets the requirements of this Operational Procedure) and non-conforming fruit **must** implement systems to identify the condition status of fruit after packing to prevent mixing of conforming and non-conforming fruit.

7.7.1. Identification of Conforming and Non-conforming Fruit after Packing

Examples of acceptable methods of identifying the condition status of conforming and non-conforming 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.

7.8. Packed Product Inspection

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

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

7.8.1. 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 **must** be sampled at the rate of either 2% or 600 units, whichever is greater. The sample **must** be selected at random from packages (i.e. trays) containing the final packed product. Sample packages **must** be selected at random from within the consignment.

7.8.2. 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 **must** involve selection of a sample of packed product from a lot, packed on the one day for certification under this Operational Procedure. Packed fruit **must** be sampled at the rate of either 2% or 600 units, whichever is greater. The sample **must** 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.

7.8.3. Examination of the Sample

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

Each fruit in the sample package **must** be removed and all surfaces examined for compliance with hard mature condition (Mango Grading and Fruit Firmness Standard), as defined above (refer Attachment 7). Each fruit **must** 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 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 larva'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 larva. *

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

7.8.4. Identification of Sample Packages

Sample packages **must** be sequentially numbered during the day of packing.

The Packed Product Controller **must** 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 **must** 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 11 – Identification of Packed Product.

7.8.5. Action Following Identification of Non-conforming Packed Product

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

7.8.5.1. In-Line Inspection

If any sample package contains a fruit that is not in a hard mature condition, doesn't meet class 1 standards, or has symptoms of fruit fly infestation, the Packed Product Controller **must:**

(a) reject the sample package; and

(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 **must** note in the 'Comments' section of the Packed Product Inspection Record (Attachment 12) 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 **must** select an additional 3 sample packages from the withdrawn packages.

The Packed Product Controller **must** carry out 100% inspection of the fruit in the additional sample packages to ensure the fruit is in a hard mature condition, meets class 1 standards and does not have symptoms of fruit fly infestation.

Additional sample packages **must** be given the next three Packed Product Sample (PPS) numbers after the package which initially failed inspection. The inspection results **must** 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 non-conforming fruit, all withdrawn packages **must** be rejected.

7.8.5.2 End-Point Inspection

If any sample package contains a fruit that is not in a hard mature condition, of class 1 standards, or has symptoms of fruit fly infestation the entire consignment **must** be rejected.

The Packed Product Controller **must** 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.

7.8.6. Rejected Product

Rejected packages **must** 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.

7.8.7. Packed Product Inspection Records

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

Packed product inspection records **must** be in the form of a Packed Product Inspection Record (refer Attachment 12) or a record which captures the same information.

Packed product inspection records **must** include:

1) the name and Interstate Produce (IP) Number of the Business that operates the approved facility in which the fruit was packed;
2) the date of inspection of the sample package;
3) the sample package sequential number (PPS No.);
4) the type of inspection, in-line or end-point;

5) the inspection result for the sample package;
6) details of defects or problems detected during inspection;
7) the number of any withdrawn or rejected packages;
8) the inspection results and follow-up action following rejection;
9) the Packed Product Controller's name and signature.

7.9. Dispatch

7.9.1. Package Identification

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

1) the Interstate Produce (IP) number of the accredited Business that packed the fruit; and
2) the words 'MEETS ICA-69'; and
3) 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.

7.9.2. Plant Health Assurance Certificates

The Authorised Dispatcher **must** 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 **must** include:

1) in the 'Accredited Business that Prepared the Produce' section:
    - the name and address of the Accredited Business that packed the mangoes;
2) 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;
    - the cultivar of mangoes that has been supplied by the Accredited Business;
    - where the consignment contains fruit grown by a number of growers the word "VARIOUS" **must** be used;
3) in the 'IP No. of Acc. Business' section:
    - the IP No. of the Accredited Business that post-harvest treated the mangoes, if applicable;

4) in the 'Type of Produce' section:
    - the mango cultivar name; and
    - "class 1 quality"

To avoid confusion 'Premium' grade fruit is considered a sub-group within class 1. The PHAC must refer to 'class 1' fruit only.

5) in the 'Treatment' section, where applicable:
    - pre-harvest treatment details for cover spraying:
        1. in the Date column, the most recent date or dates of pre-harvest treatment of the source block/s;
        2. in the Treatment column, the words "Pre-Harvest Spray";
        3. in the Chemical (Active Ingredient) column, the words "400g/L dimethoate";
        4. in the Concentration column, the words "at 75mL/100L"; and
        5. 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*, a completed example of which is shown as Attachment 1.

7.9.3. Plant Health Assurance Certificate Distribution

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

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

The triplicate (green copy) **must** be returned to Plant Biosecurity Branch at the end of each month of consignment.

7.9.4. ICA System Records

The Business **must** maintain copies the following records:

Part A

1) Property Plan for each property (Refer Attachment 2);
2) Chemical Mixture Tank Calibration Certificate, where applicable (Refer Attachment 3);
3) Cover Spray Mixture Preparation Chart (Refer Attachment 4);
4) Cover Spray Mixture Preparation and Treatment Record (Refer Attachment 6);
5) Harvest Inspection Record (Refer Attachment 8).
6) Harvest Inspection Declaration (Refer Attachment 9)

Part B

1) A copy of each Harvest Inspection Declaration received (Refer Attachment 9);
2) Fruit Receival Inspection Record (Refer Attachment 10);
3) Packed Product Inspection Record (Refer Attachment 12);
4) The duplicate copy of each Plant Health Assurance Certificate issued by the Business (Refer Attachment 1).

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.

7.10. ICA System Documentation

The Business **must** maintain the following documentation:

1) a copy of the Business's current Application for Accreditation;
2) a current copy of this Operational Procedure;
3) a current Certificate of Accreditation for this Interstate Certification Assurance.

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

8. ATTACHMENTS

Attachment 1:	Plant Health Assurance Certificate (PHAC)	**(COMPLETED EXAMPLE)**
Attachment 2:	Property Plan	**(BLANK)**
Attachment 3:	Chemical Mixture Tank Calibration Certificate	**(BLANK)**
Attachment 4:	Cover Spray Mixture Preparation Chart	**(BLANK)**
Attachment 5:	Cover Spray Mixture Preparation Chart	**(EXAMPLE)**
Attachment 6:	Cover Spray Mixture Preparation and Treatment Record	**(BLANK)**
Attachment 7:	Mango Grading and Firmness Standard	**(N/A)**
Attachment 8:	Harvest Inspection Record	**(BLANK)**
Attachment 9:	Harvest Inspection Declaration	**(BLANK)**
Attachment 10:	Fruit Receival Inspection Record	**(BLANK)**
Attachment 11:	PPS No. Stamp or Sticker	**(BLANK/EXAMPLE)**
Attachment 12:	Packed Product Inspection Record	**(BLANK)**

8.1. Attachment 1: Plant Health Assurance Certificate Example

Consignment Details (PLEASE PRINT)

CONSIGNOR (FROM)
Name *Joe Grower*
Address *1234 Produce Road*
Katherine NT 0850

CONSIGNEE (TO)
Name *Top Quality Fruit and Veg*
Address *Adelaide Produce Market*
Adelaide South Australia 5300

RECONSIGNED TO (Splitting consignments or reconsigning whole consignments).
Name
Address

Certification Details (PLEASE PRINT)

IP NUMBER	FACILITY NUMBER	PROCEDURE
A *9999*	*01*	*ICA69*

ACCREDITED BUSINESS THAT PREPARED THE PRODUCE
Name *Joe Grower*
Address *1234 Produce Road*
Katherine NT 0850
GROWER OR PACKER
Name *As Above*
Address
OTHER FACILITIES SUPPLYING PRODUCE

BRAND NAME OR IDENTIFYING MARKS (as marked on packages)	DATE OR DATE CODE (as marked on packages)
Joe's Mango Farm	*01102025*

Number of Packages	Type of Packages (e.g. trays, cartons)	Type of Produce	Authorisation for Split Consignment
40	*Cartons*	*Calypso cultivar class 1*	
60	*Cartons*	*KP cultivar class 1*	

Treatment Details

Treatment	Chemical (Active Ingredient)	Treatment Date	Concentration / Duration and Temperature
Pre-harvest Spray	*Dimethoate*	*26/09/2025*	*400g/L@75mL/100L, cover spray*

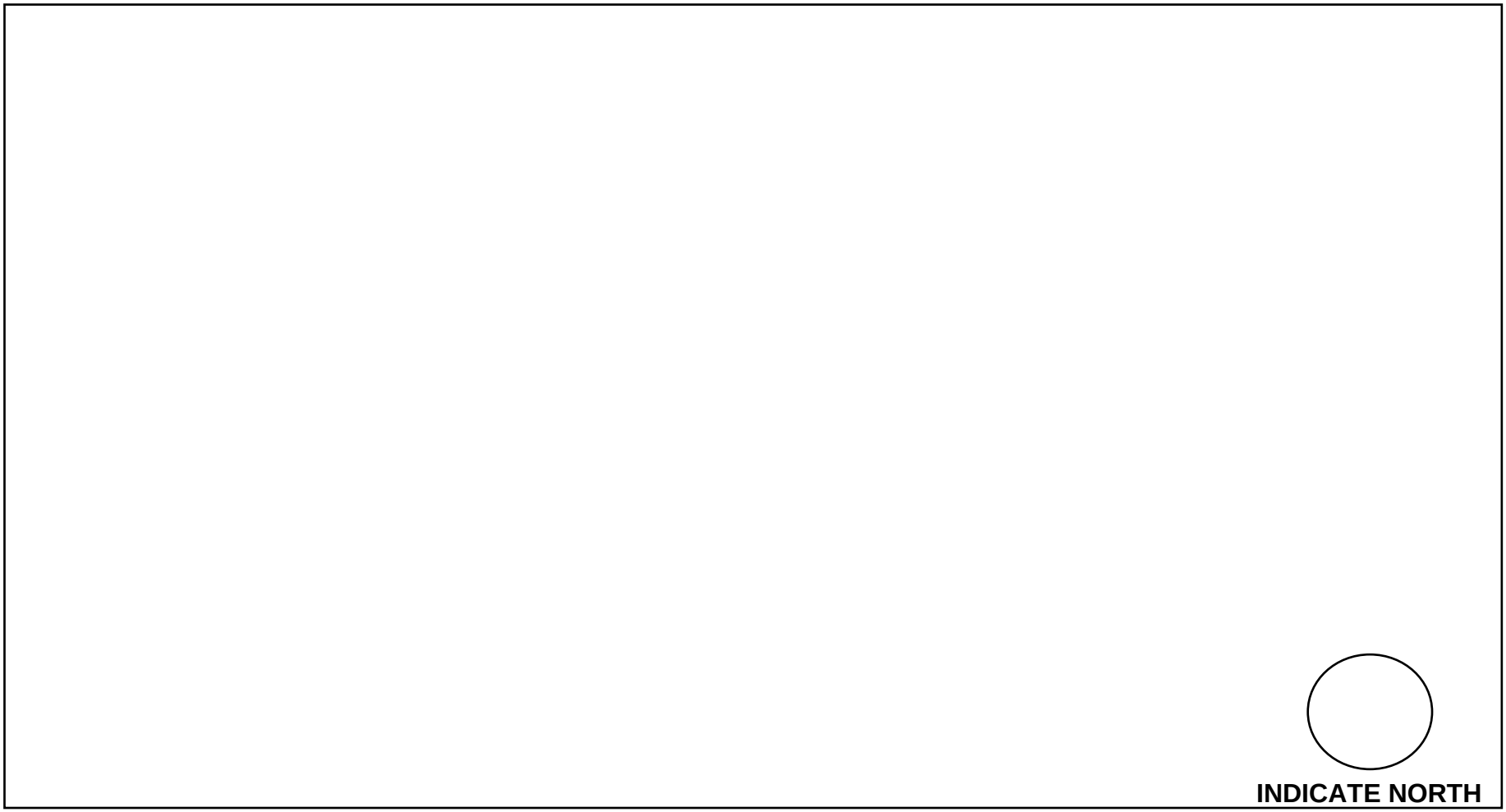
Additional Certification / Codes
Meets ICA69.

Declaration

I, an authorised Signatory of the accredited business that prepared the plants or plant produce described above, hereby declare that the plants or plant produce have been prepared in the business's approved facilities in accordance with the *Plant Health Act* and that the details shown above are true and correct in every particular.

AUTHORISED SIGNATORY'S NAME (PLEASE PRINT)	SIGNATURE	DATE
Joe Signatory	*Joe Signatory*	*01/10/2025*

8.2. Attachment 2: Property Plan



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

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 ICA69 *Condition and Treatment of Mangoes* for the following-

Pre-harvest treatment to be covered

❑ Cover Spray

Chemical to be covered

❑ Dimethoate (cover 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 Interstate Certification Assurance (ICA) Arrangement* covering the arrangement;

(c) application must be made to amend any of the current details in the *Application for Accreditation of a Business for an Interstate Certification Assurance Arrangement* or this Property Plan.

..... / /

Signature Date

8.3. Attachment 3: Chemical Mixture Tank Calibration Certificate

EQUIPMENT CALIBRATED	
Name and Address of Owner of Equipment:	
Brand:	
Model:	
Serial No.:	
Other Information:	

TESTING DETAILS	
Name and Address of the Business Conducting the Test:	
Date of Testing:	
Type of Flow Meter Used:	
Date of Last 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

8.4. Attachment 4: Cover Spray Mixture Preparation Chart

Spray Unit _____

Tractor _____

Operating Gear _____ Engine RPM _____

Chemical Concentrate _____

Concentrate Mixture Rate ___ mL/100L 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

8.5. Attachment 5: Cover Spray Mixture Preparation Chart (EXAMPLE)

Spray Unit Ford 5000

Tractor Hardi Mini-Variant 600

Operating Gear 3(high) Engine RPM 2500

Chemical Concentrate Dimethoate

Concentrate Mixture 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

187.5 mL Concentrate / 250 Litres Mixture

300 mL Concentrate / 400 Litres Mixture

375 mL Concentrate / 500 Litres Mixture

Prepared by: S Operator S Operator 01/10/2020

8.6. Attachment 6: Cover Spray Mixture Preparation and Treatment Record

COVER SPRAY MIXTURE PREPARATION						COVER SPRAY TREATMENT					
Date	Time	Volume of Water (Millilitres)	Volume of Mixture (Litres)	Trade Name of Concentrate	Other Pesticide(s) or Additive(s)	Date of Application	Spray Equipment Used	Block Treated (Code)	No. of Trees/hectares Treated	Spray Operator's Name	Signature

8.7. Attachment 7: Mango Grading and Firmness Standard

All mango fruit consigned in accordance with ICA-69 accreditation **must** be graded for defects in accordance with 'Class 1' fruit as defined by the 2016 Mango Industry Standards[1].

All mango fruit **must** also be graded to meet the '0' softness rating on the fruit firmness scale to ensure hard mature condition is met in addition to defect tolerances.

8.7.1. Class 1 Defect Tolerances

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	0, in accordance with firmness standards below
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
SEVER SKIN BLEMISH (>10% OF SKIN)	Nil
LENTICEL STAR CRACKED	Nil

[1] 2016 Mango Industry Quality Standards, available online https://www.industry.mangoes.net.au/cmsb/uploads/mg15002-2016-mango-industry-quality-standards.pdf

MINOR DEFECTS	
LIGHT	
LENTICEL LIGHT	≤ rating 3 Mango Quality Assessment Manual (MQAM)[2] rating scale
SUN BURN LIGHT	≤25% No browning, as per MQAM page 15, picture 2
RUSETT LINES	≤10%
MEDIUM	
PINK SPOT	Rating 1 (less than 6 spots, or an area of 1cm^2)
SAP BURN	≤4cm^2 ≤ cumulative 10%
HEALED SCARRING	≤4cm^2 ≤ cumulative 10%
CLEAVAGE SCAR	≤4cm^2 ≤ cumulative 10%
BROWNING SKIN MARKS	≤4cm^2 ≤ cumulative 10%
TOLERANCE	
MAJOR	2%
MINOR	10%

8.7.2. Fruit Firmness (ripeness) Standards

Mango 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 mangoes, as per image 1 below.

The 'give' or deformation of all mango fruit **must** be rated '0' in accordance with the following scale (based on White et al. 2009).

[2] For a copy of the MQAM please contact the Australian Mango Industry Association team via email: com@mangoes.net.au

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)

Image 1. Correct technique: Grasping with whole hand.

Image 2. Incorrect technique: Pressing with the thumb.

8.8. Attachment 8: Harvest Inspection Record

Date	Grower's IP Number	Source Block/s	No. of Bins/Crates	Bin/Crate ID Number/s or Code/s	No. of Fruit Examined or Cut	Hard Mature Condition	Fruit Fly Present ☑		Details	Harvest Supervisor	
						Firmness 0	Yes	No		Name	Signature

8.9. Attachment 9: Harvest Inspection Declaration

*A Harvest Inspection Declaration **must** be provided to the packer to cover the mangoes delivered for certification under ICA-69 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. **A** | | | | |

hereby declare that the -

_____ *(no. of packages)* _____ *(type of packages - bins, crates, trays)*

of mangoes identified by -

_____*(package identification)*

delivered to -

_____ *(Business name)*

Interstate Produce (IP) No. **A** | | | | |

On _____/_____/_____*(date)*
for grading, packing, post-harvest treatment and certification under ICA Operational Procedure ICA-69 - *(☑ as appropriate)*, declare-

1. ❑ That a cover spray treatment of the source block due to an adverse weather event was applied on - _____
   - ❑ a **cover spray** containing 75 mL of a concentrate containing -
     - ❑ 400 g/L dimethoate;

     per 100 litres of cover spray mixture.
2. The mangoes were inspected at harvest for hard mature condition and comply -

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

3. The mangoes were inspected at harvest and found *(☑ as appropriate)*-
   - ❑ 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

8.10. Attachment 10: Fruit Receival Inspection Record

Date	Grower's IP Number	Source Block/s	No. of Bins/Crates	Bin/Crate ID Number/s or Code/s	No. of Fruit Examined or Cut	Hard Mature Condition	Fruit Fly Present ☑		Details	Harvest Supervisor	
						Firmness 0	Yes	No		Name	Signature

8.11. Attachment 11: PPS No. Stamp or Sticker

Marking Sample Packages After Packed Product Inspection

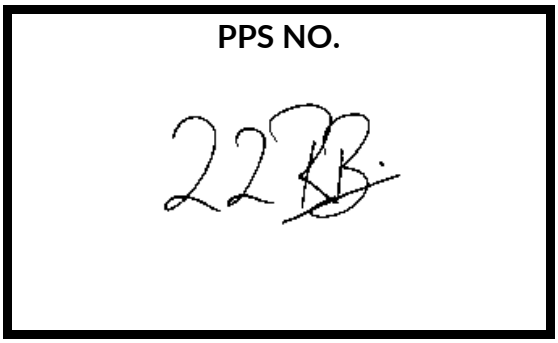
Following inspection, the Packed Product Controller must -

(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; **and**

(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)

Example: Completed Stamp or Sticker



8.12. Attachment 12: Packed Product Inspection Record

Fruit Type:								**Business Interstate Produce (IP) Number:**	**A**				
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	
		In-Line	End-Point	Yes	No	Yes	No		Printed Name	Signature
Tick applicable columns➔										

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