Procedure

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ICA 04

FUMIGATION WITH METHYL BROMIDE

NUMBER	ICA-04	VERSION	4.2
AUTHORISED BY	Manager, Plant Product Integrity & Standards		
AUTHORISED DATE	8 November 2018	EFFECTIVE DATE	9 November 2018
ISSUED BY	Primary Industries, Biosecurity & Food Safety		

REVISION HISTORY

VERSION	DATE	AMENDMENTS	
		SECTION	DETAILS
1.0	16 September 2001	All	New ICA Procedure.
2.0	22 December 2003	All	Pages 9, 26, 27, 28 and 29.
3.0	11 December 2012	All	All pages review and reformatting. Updated reference to Workplace Health and Safety Act 2011. Update fumigation rates and produce temp < 32°C in section 6. Updated Plant Health Assurance Certificate as an attachment. Removed specific treatment for Papaya Fruit Fly from section 7.9. Add fumigation chamber loading rates to section 7.5.2. Add other suitable gas monitoring devices to section 7.6.6.
4.0	26 June 2017	All	Changes made to align with the *Biosecurity Act 2015*. Updated definitions, removed details for accreditation, auditing procedures, sanctions policy and charging, and replaced the application form and PHAC. Updated NSW Department of Primary Industries contact details.
4.1	4 June 2018	6	Add minimum permissible pulp temperature for host fruit destined for WA, SA and Tas. Add requirement for impervious materials to be opened, cut or removed. Add Tas condition that impervious materials may remain intact if they contain perforations or pinholes.
		7.2	Remove reference to Inspector having to supervise the Gas Retention test.
4.2	8 November 2018	6	Increase in minimum pulp temperature rates from 16°C to 17°C for all Queensland fruit fly host produce. Add requirement to include treatment temperature and duration on PHACs.
		7.5.2	Include details for perforations and pinholes.

NEXT REVIEW DATE:	04/06/2021

Disclaimers

The information contained in this Procedure is based on knowledge and understanding at the time of writing (November 2018). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up-to-date and to check currency of the information with the appropriate officer of the Department or the user's independent adviser.

PROCEDURE

Contents

1. PURPOSE

The purpose of this Procedure is to describe:

(a) the principles of operation, design features and standards required for fumigation chambers and facilities; and

(b) the responsibilities and actions of personnel;

that applies to the certification of methyl bromide fumigation of produce under an Interstate Certification Assurance (ICA) arrangement.

2. SCOPE

This Procedure covers all certification of methyl bromide fumigation by a Business operating under an ICA arrangement in New South Wales.

Pest: Fruit fly and other plant pests

Product: Fruit and fruiting vegetables, food producing plants and ornamentals

Location: Businesses operating in areas of NSW where the requirements specified are a condition of entry of an interstate quarantine authority.

ALWAYS READ THE LABEL

Users of agricultural (or veterinary) chemical products must always read the label and any Permit before using the product and strictly comply with the directions on the label and the conditions of any Permit. Users are not absolved from compliance with the directions of the label or the conditions of the Permit by reason of any statement made or omitted to be made in this Procedure.

Certification of **fruit fly host produce** under this Procedure may not be an accepted quarantine entry condition for all produce to all intrastate and interstate markets.

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

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

Information on intrastate and interstate quarantine requirements can be obtained by phoning 1800 084 881 or accessing *http://www.interstatequarantine.org.au/*.

3. REFERENCES

Biosecurity Act 2015

Further information – *https://www.dpi.nsw.gov.au/biosecurity/plant*

Policies – *http://www.dpi.nsw.gov.au/biosecurityact/procedures*

Accreditation of Biosecurity Certifiers

Biosecurity Audit Frequency

Work Instruction – *https://www.dpi.nsw.gov.au/biosecurity/plant*

WI-01 – ‘Guidelines for Completion of Plant Health Assurance Certificates’

4. DEFINITIONS

In this Procedure:

Act	means the *Biosecurity Act 2015*.

APVMA	means the Australian Pesticides and Veterinary Medicines Authority.
Authorised Person	means an authorised officer under the Act or a person authorised under a law of another State or Territory that relates to plant biosecurity.
Authorised Signatory	means a person whose name is notified to the Secretary as a person who can issue a biosecurity certificate on behalf of the Business.
Business	means the legal entity accredited as a biosecurity certifier under the Act.
Certification	means a Plant Health Certificate or a Plant Health Assurance Certificate, which verifies that a consignment meets the requirements of an Interstate Certification Assurance Procedure or an interstate quarantine entry requirement.
Certification Assurance Arrangement	means a CA Arrangement that enables a Business or a person authorised under a corresponding law of a State or Territory, to issue a Plant Health Assurance Certificate that meets certain plant health quarantine conditions for trade within the State or between the State and other States and Territories.
Chamber	means a permanent or tarped enclosure made from gas-proof material specifically designed for the purpose of fumigation.
colorimetric tubes	means Draeger/Kitagawa stain or detector tubes for measuring fumigant concentrations.
Department	means the NSW Department of Industry – Office of Primary Industries
Facility	means the location of the fumigation chamber or chambers covered by the ICA arrangement.
Fumigant	means 1000 g/kg methyl bromide (CH_3Br).
Fumigation	means the treatment of produce with a fumigant.
Fumigator	means a person with a current fumigation certificate of competency, to undertake fumigation pursuant to the *Work Health and Safety Act 2011*.
fruit fly	means Queensland fruit fly (*Bactrocera tryoni*), Lesser Queensland fruit fly (*Bactrocera neohumeralis*) and Northern Territory fruit fly (*Bactrocera aquilonis*).
Inspector	means a WorkCover inspector authorised by the WorkCover Authority of NSW, or an Authorised Person.
Load	means the total number of packages covered by one fumigation treatment.
Lot	means a discrete number of packages of one produce type (e.g. mangoes or rockmelons) from one source (e.g. one packer or one consignee).
Non-conformance	means a failure to fulfil a specific requirement
PHAC	means a Plant Health Assurance Certificate that is issued in accordance with the requirements of a Certification Assurance Arrangement.
Produce	means plants and plant products and includes members, alive or dead, of the plant kingdom and any material of plant origin.

5. RESPONSIBILITY

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

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 Interstate Certification Assurance arrangement under this Operational Procedure;
- training staff in their responsibilities and duties under this Operational Procedure;
- ensuring the Business and its staff comply with their responsibilities under this Operational Procedure;
- ensuring that all fumigation of produce certified under the Businesses ICA arrangement is carried out in accordance with this Operational Procedure;
- ensuring all fumigations are performed by a licensed fumigator;
- ensuring the fumigation facility has been approved or deemed an 'as of right use' by the relevant Local Authority (as applicable);
- ensuring a Fumigation Dosage Chart is maintained for each fumigation chamber operated at the facility;
- ensuring each fumigation chamber operated at the facility is covered by a valid Gas Retention Test Certificate issued by a licensed fumigator within the last 6 months;
- ensuring thermometers used for measuring produce temperatures are identified and calibrated at least every 6 months; and
- if applicable, ensuring weighing scales are calibrated at least every 6 months.

Fumigator is responsible for:

- maintaining the fumigation chamber and fumigation equipment;
- determining the chamber volume;
- maintaining thermometer identification and calibration records;
- determining the minimum produce temperature for each fumigation;
- determining the rate and dosage of fumigant required for each fumigation;
- if applicable, maintaining weighing scale calibration records; and
- maintaining fumigation treatment records.

Authorised Dispatcher is responsible for:

- ensuring all packages covered by a PHAC issued by the Business are identified; and
- maintaining copies of all PHACs issued by the Business under the ICA arrangement.

Authorised Signatories are responsible for:

- ensuring, prior to signing and issuing a PHAC, that produce covered by the certificate has been prepared in accordance with the Businesses ICA arrangement and that the details on the certificate are true and correct in every particular.

6. REQUIREMENTS

Fumigation with methyl bromide in an approved fumigation chamber for 2 hours at the following rates:

For all Queensland fruit fly hosts:

Temp ^{o}C	Rate g/m^3
17-20.9	40
21+	32

For hosts of all other plant pests:

Temp ^{o}C	Rate g/m^3
10-10.9	56
11-15.9	48
16-20.9	40
21+	32

(a) The temperature prior to fumigation must be above 10°C and below 32°C for:

  (i) fruit and fruiting vegetables - taken from the flesh next to the seed (if seed present); or

  (ii) food producing plants and ornamentals – taken from the ambient temperature of the fumigation chamber.

(b) Loading rates within the chamber must be:

  (i) for fruits and vegetables- not less than 30% nor more than 50% of the volume of the chamber when empty; or

  (ii) for all other plants and plant products – not more than 50% of the volume of the chamber when empty.

(c) The fumigator must ensure that produce packaged or covered with impervious materials (such as plastic bags, stacked plastic punnets or waxed paper), are opened, cut or removed to allow adequate penetration of the gas unless the impervious materials contain:

  (i) not less than four unobstructed perforations of 6 mm diameter per 100 cm^2; or

  (ii) five unobstructed perforations of 5 mm diameter per 100 cm^2; or

  (iii) numerous pinholes (at least 6 holes per square centimetre).

100% methyl bromide must be used for fumigating fruit and fruiting vegetables, food producing plants and ornamentals.

The use of fumigants containing chloropicrin does not have National Registration Authority approval for the fumigation of these commodities. Chloropicrin is phytotoxic and is likely to cause damage to any living plant material.

All treated food must not be made available for retail sale unless residues of Methyl Bromide are at or below the maximum residue limit (MRL) of 0.05 mg/kg.

NSW Department of Primary Industries and interstate quarantine authorities maintain the right to inspect at any time certified produce and to refuse to accept a certificate where produce is found not to conform to specified requirements.

Inadequate ventilation of produce after fumigation may lead to residues of methyl bromide above the MRL and leave produce open to seizure by relevant authorities at intrastate or interstate markets.

All methyl bromide fumigations must be carried out by a licensed fumigator.

Do not use fumigated commodities for stock or human consumption or for fabrication into food for human or animal consumption within 3 days of completion and until the commodity had been adequately ventilated.

7. PROCEDURE

7.1. Fumigation facility requirements

The Business shall maintain documentary evidence that the fumigation facility has current approval or has been deemed as an 'as of right use' by the relevant Local Authority (City or Shire Council).

Each chamber operated at the facility for methyl bromide fumigation of produce under this Operational Procedure must:

(a) be a permanently constructed fumigation chamber or a semi-permanent fumigation chamber made from gas-proof material designed specifically for the purpose of fumigation; and

(b) be covered by a current and valid Gas Retention Test Certificate issued by a licensed fumigator within the last 6 months.

Stack fumigation under impervious gas sheets (tarpaulins) is not permitted under this Operational Procedure.

7.1.1 Fumigation Dosage Chart

The Business shall maintain a Fumigation Dosage Chart (Attachment 2) or similar record in close proximity to the chamber for each chamber used by the Business for fumigation under this Operational Procedure.

The chart shall provide the following details:

(a) the Businesses name and Interstate Produce (IP) number;

(b) the identification of the chamber to which the chart applies;

(c) the total chamber volume in cubic metres;

(d) the quantity of methyl bromide in grams (g) required to be added to the chamber to achieve a concentration of 32, 40, 48 and 56 g/m^3; and

(e) the printed name and signature of the licensed fumigator responsible for the preparation of the chart and the date of preparation.

7.1.2 Fumigation chamber and fumigation equipment maintenance

The Fumigator shall carry out regular checks of the fumigation chamber and any fumigation equipment such as hallide lamps, gas monitoring devices and gas sampling tubes to ensure they continue to operate effectively and remain free from malfunction, damage or excessive wear.

7.2. Gas retention testing

All chambers used for methyl bromide fumigation under an Interstate Certification Assurance arrangement must be covered by a valid Gas Retention Test Certificate issued by a licensed fumigator.

Operational chambers must be tested at least every 6 months, or as required by an Inspector.

Gas Retention Certificates shall be issued following testing by a licensed fumigator in accordance with the following:

(a) After preparing the chamber in accordance with the requirements of this Operational Procedure, gas concentrations shall be measured and recorded 20 minutes after the start of the fumigation and at 2 hours after the start of the fumigation prior to venting.

(b) All monitoring points shall be measured to determine that the required concentration has been attained. All monitoring points shall equilibrate within ± 5% of each other at the 20 minute monitoring where more than one monitoring point is in use.

(c) Where monitoring points are not equilibrated within ± 5% of each other at the 20 minute monitoring, the fumigation will be deemed to have failed and the Fumigator shall vent off all fumigant, ensure gas freedom and then inspect the chamber for the possible cause.

(d) A minimum of 50% of the original fumigant concentration is required to be retained at the final monitoring (after 2 hours). If the required final concentration is not reached then the fumigation will be deemed to have failed and the Fumigator shall vent off all fumigant, ensure gas freedom and then inspect the chamber for the possible cause.

(e) At least one successful fumigation retention test for a chamber must be undertaken before a Gas Retention Test Certificate may be issued for that chamber.

It is recommended that newly constructed chambers be tested for leakage using a coloured smoke generator prior to gas retention testing using methyl bromide.

7.2.1 Gas Retention Test Certificate

The Gas Retention Test Certificate must record:

(a) the name and Interstate Produce (IP) number of the Business that operates the fumigation chamber;

(b) the facility address;

(c) the identification of the chamber to which the certificate applies;

(d) the date of the test;

(e) the measurements of the chamber;

(f) the chamber volume;

(g) the volume of any external ducting;

(h) the total chamber volume in cubic metres;

(i) the fumigation rate (g/m^3);

(j) the time of vaporisation;

(k) the quantity of methyl bromide in grams (g) added to the chamber to achieve the concentration at the time of the test(s);

(l) the readings for each monitoring point for each test at 20 minutes after vaporisation is complete;

(m) the readings for the each monitoring point for each test at the end of the test (at 2 hours after vaporisation is complete);

(n) the time venting commenced;

(o) the percentage of gas retained for each test at the end of the test; and

(p) the QDH licence number, printed name and signature of the licensed fumigator who performed the test(s).

This information must be provided using the Gas Retention Test Certificate included as Attachment 4 or a certificate, which captures the same information.

7.3. Calculation of fumigation chamber volume

The volume of the space to be fumigated is the volume of the total space enclosed for fumigation. It is to be calculated using a measuring tape or other suitable device to determine length, width and height and is to be expressed in cubic metres (m^3).

Where an enclosed chamber is used for fumigation, the volume of any gas circulation equipment external to the chamber which is not sealed from the chamber during fumigation must also be included in calculation of the chamber volume.

The following calculation may be used to determine the volume of the chamber in cubic metres (m^3):

(Chamber height (m) x chamber length (m) x chamber width (m)) + external ducting volume (m^3) = total chamber volume (m^3)

For example:

(Chamber height (2.5m) x Chamber length (3m) x Chamber width (3m)) = Chamber volume

$2.5 \times 3 \times 3 = 22.5\ m^3$

+ External ducting volume 0.5 m^3 (if applicable) = Total chamber volume

$22.5\ m^3 + 0.5\ m^3 = 23.0\ m^3$

Details of chamber volume and fumigant dosage rates must be prominently displayed in the vicinity of the chamber.

7.4. Calculation of produce temperature

Immediately prior to the commencement of fumigation, the Fumigator shall determine the minimum flesh temperature of each load of produce to be fumigated.

7.4.1 Equipment

Thermometers used for measuring produce temperature may be of the bimetallic, glass (mercury or alcohol) or digital type and shall be uniquely identified for calibration purposes.

Thermometers capable of reading in graduations of 0.1°C or 0.2°C shall be used.

7.4.2 Calibration of thermometers

Thermometers used for measuring produce temperature shall have been calibrated within the previous 6 months and shall be accurate to within ± 0.5°C.

Calibration may be undertaken using the ice-point check method, by checking against a calibrated reference platinum resistance thermometer, or by a recognised testing authority.

The Business must maintain results of thermometer calibration checks.

Thermometer calibration records must record the following information:

(a) the date of calibration;

(b) the identification of the thermometer calibrated;

(c) the temperature reading(s) and the correction if any to the thermometer reading to an accuracy of at least ± 0.1°C; and

(d) the name of the officer or recognised testing authority responsible for conducting the calibration check.

Ice - Point Check Calibration

Thermometers should be washed with distilled or de-ionised water and stored for several hours at 0°C before the calibration check.

A slurry mixture of distilled or de-ionised water and shaved ice made from distilled water is prepared in an insulated vessel. Drain any excess free water and then fully immerse each thermometer to above the mercury column. Lift the thermometer until the mercury is just visible and read the indicated temperature. Repeat this procedure until there is no change in the reading and then record the indicated temperature.

The correction for the thermometer will be the deviation of the reading from 0°C.

If the indicated temperature is outside the range 0°C ± 0.5°C the thermometer is unsuitable for use under this Procedure.

Whilst it may be possible to adjust electronic thermometers, inaccurate glass thermometers shall be replaced and appropriate records made.

7.4.3 Produce temperature measurement

7.4.3.1 Fruits and vegetables

The Fumigator shall measure the flesh temperature of one centre fruit or vegetable and one outer fruit or vegetable from each pallet or bulk bin.

For unpalletised fruit and vegetables, a minimum of one outer and one inner fruit or vegetable from every twentieth package shall be sampled.

Temperatures shall be taken from each lot of fruit or vegetables in the load. A minimum of five temperature readings shall be taken from for each lot to be fumigated.

7.4.3.2 Live plants and plant products

Temperatures shall be varied between the top, middle and bottom and from outer and inner packages of each lot.

A minimum of five temperature readings shall be taken from each lot to be fumigated.

7.4.4 Produce temperature records

The Fumigator shall record each temperature reading and the maximum and minimum produce temperatures of the load on the Fumigation Treatment Record (Attachment 3).

7.5. Preparing, loading and sealing the chamber

7.5.1 Preparing the chamber

The Fumigator must, prior to the chamber being loaded:

(a) check the chamber for damage and possible leak sites;

(b) repair any damage (e.g. damaged door seals or holes or tears in chamber walls); and

(c) check chamber circulation and ventilation systems are operating correctly and ensure all vents are closed and sealed.

7.5.2 Loading the chamber

The Fumigator shall ensure that an adequate distance is maintained between each package, pallet or bulk bin and the sides and top of the chamber to allow circulation of the fumigant. A 5cm space shall be left between each package, pallet load or bulk bin in the chamber with a minimum space of 10 cm between the top and sides of produce to the walls and ceiling.

Chamber loadings must be recorded as a percentage of the chamber volume for each fumigation.

Loading rates within the chamber must be:

(a) not less than 30% nor more than 50% of the volume of the chamber when empty for fruits and vegetables; and

(b) not more than 50% of the volume of the chamber when empty for all other plants and plant products; and

(c) produce may be fumigated either unpacked, in bulk bins or following packing. The Fumigator shall ensure that any produce which is packaged or covered with impervious materials such as plastic bags or waxed paper are opened, cut or removed to allow adequate penetration of the gas unless the impervious materials contain:

  (i) not less than four unobstructed perforations of 6 mm diameter per 100 cm^2; or

  (ii) five unobstructed perforations of 5 mm diameter per 100 cm^2; or

  (iii) numerous pinholes (at least 6 holes per square centimetre).

7.5.3 Placement of gas supply line(s)

The gas supply line(s) shall be strategically placed within the chamber to effectively introduce and allow dispersal of the gas. As the fumigant is more than three times heavier than air, the gas should be introduced directly into the airstream of the circulation fan. Precautions must be taken to prevent any liquid fumigant coming in contact with produce being fumigated. A piece of impermeable sheeting (plastic or rubberised canvas) or a tray may be used.

Adequate fan circulation must be provided to circulate the fumigant.

7.5.4 Placement of gas sampling lines

When gas concentrations are to be monitored during fumigations, gas sampling lines must be positioned within the chamber for each fumigation. Sampling lines must be crushproof (for example 6 mm internal diameter hydraulic hose is effective) and must be positioned as follows:

(a) for chambers less than 5 m^3 one gas sampling line shall be located in the centre of the stack; and

(b) for chambers 5 m^3 or greater three sampling lines shall be used and located at the top back, centre, and base front of the stack.

7.5.5 Sealing the chamber

Once all of the produce has been placed in to the chamber, the Fumigator shall ensure the chamber is gas tight by closing all vents and access points and checking all possible leak sites such as doors, gaskets and joints.

7.6. Fumigation

After the chamber has been sealed the Fumigator turns on all circulation fan(s).

7.6.1 Calculation of fumigant dosage

The fumigant dosage rate is specified in Requirements..

The dosage rate applied to fumigation shall be determined by the temperature of the coldest produce from any lot to be fumigated in the chamber load.

Treatment of fruit must not commence if the temperature of the fruit is below 10°C or is 32°C or above.

Determine the amount of methyl bromide required in grams (g) using the following formula:

chamber volume × dosage rate = g methyl bromide

For example:

22.5m^3 × 32g/m^3 = 720g methyl bromide

The Fumigator shall maintain records of the total amount of methyl bromide applied for each fumigation on the Fumigation Treatment Record (Attachment 3).

7.6.2 Application of fumigant

7.6.2.1 Sealed system

The Fumigator measures out the required amount of fumigant into the measuring cylinder. After the required amount of fumigant has been decanted and checked the fumigant is introduced into the chamber via the volatiliser.

7.6.2.2 Loss of weight system

The Fumigator measures out the required amount of fumigant by the loss of weight in the dispensing cylinder.

To operate this method, the dispensing cylinder is placed onto scales to allow the weight of the cylinder to be determined before application of the fumigant.

The Fumigator must tare off the weight of the required amount of fumigant on the dispensing cylinder and open the valve to apply the required amount until the cylinder is at the tared weight.

7.6.3 Calibration of weighing scales

Scales used for the Loss of Weight System must be calibrated using a known weight at least every 6 months.

The Business must maintain results of weighing scale calibration checks.

Weighing scale calibration records must record the following information:

(a) the date of calibration;

(b) the identification of the scales calibrated;

(c) confirmation that the equipment is accurate to within ± 1 percent of the minimum dosage (g) of methyl bromide used for the chamber; and

(d) the officer responsible for conducting the calibration check.

7.6.4 Vaporiser/Volatiliser

Although methyl bromide has a boiling point of 3.6°C and will vaporise when released at temperatures above 4.0°C, freezing may occur as the gas is released from the delivery cylinder. For this reason a vaporiser or volatiliser must be used to introduce the methyl bromide as a hot gas.

A suitable device has part of the delivery tube of copper, coiled and submerged in hot water.

7.6.5 Mixing of fumigant

To ensure adequate mixing of the fumigant, fans shall be used to disperse the gas throughout the chamber and thereby enhance the penetration of the fumigant. Once the gas is evenly distributed it maintains that condition unless an outside event such as excessive leakage occurs.

It is suggested that an axial fan capable of providing 60 room changes of volume per hour be used for 15 minutes after the introduction of the gas. Low velocity/low volume fans may be used for longer periods.

The use of high velocity/high volume fans for periods longer than 15 minutes may lead to the fumigant being forced from the chamber.

Fumigation commences once all the fumigant has been introduced into the chamber and vaporised (the time of vaporisation).

Effective mixing of the methyl bromide may be determined by monitoring gas concentrations at all monitoring points 20 minutes after the introduction of the gas. All monitoring points must equilibrate within ± 5% of each other (where more than one sampling point is used), otherwise the fumigation is deemed to have failed.

7.6.6 Testing for leaks

Once the fumigation has commenced, the Fumigator shall test the chamber for leaks using a halide lamp or other suitable gas monitoring device. Sites checked shall include:

- doors sealing points;
- external ducting; and
- exit points for supply lines and gas sampling lines.

Any leaks detected shall be repaired immediately. If leaks are detected that can not be repaired during the treatment, the fumigation must be aborted and the chamber repaired before further use.

7.6.7 Monitoring fumigant concentration

Effective fumigation is dependent on maintaining a satisfactory level of fumigant within the chamber during the fumigation. Monitoring of fumigant concentration is not mandatory for every fumigation, however this is a preferred practice.

Fumigators may elect to monitor gas concentration during fumigations. Where monitoring indicates that the required concentration will not be achieved the Fumigator shall vent off all fumigant, ensure gas freedom and then inspect the chamber for the possible cause.

When the cause has been rectified the produce must be re-gassed at the specified rate.

7.7. Completion of fumigation

7.7.1 Venting

After 2 hours of treatment the chamber shall be ventilated by running the exhaust system to extract all of the remaining gas and ensure that the concentration of methyl bromide is below 5 ppm before produce is released from the chamber.

The Fumigator should check fumigant concentrations before releasing the produce by drawing an air sample from the chamber into a colorimetric tube before releasing the produce. Air samples must be taken near the floor of the chamber in the vicinity of the exhaust duct. This can be accomplished by installing a metal tube in the chamber to transport the sample from the floor to an opening in the chamber wall.

The concentration of methyl bromide in the chamber must be below the Exposure Standard of 5 ppm or less before the product can be released. If the concentration is greater than 5 ppm then forced venting should be resumed and further measurements of concentration taken.

Inadequate aeration of produce poses grave risks to the health of workers involved in unpacking, transport and marketing of fumigated fruit.

7.7.2 Unloading the chamber

Unloading of the chamber may commence after the Fumigator has released the produce. The ventilation system should be kept running during this process.

7.7.3 Aeration of produce

Treated produce shall be given sufficient time to air after treatment to allow adequate dispersal of the fumigant out of the produce and ensure that the Exposure Standard of 5 ppm of methyl bromide and any applicable maximum residue limits are not exceeded.

7.7.4 Identification and control of treated and untreated produce

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

Examples of acceptable methods of identifying the treatment status of treated and untreated produce after fumigation include:

(a) locating untreated produce in a clearly identified and separate area to treated produce and maintaining separation until dispatch; or

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

Other methods may be used provided they clearly identify and segregate treated and untreated produce.

7.8. Treatment records

The Fumigator must record each fumigation using a Fumigation Treatment Record or records which capture the same information (Attachment 3).

Treatment records must identify:

(a) the date of fumigation;

(b) the packer's identification;

(c) the type of produce treated;

(d) the quantity of produce treated;

(e) all temperature measurements taken prior to fumigation;

(f) the fumigation dosage rate;

(g) the total quantity in grams of fumigant released in the fumigation;

(h) the commencement time of the fumigation (the time vaporisation is completed);

(i) the completion time of the fumigation (the time venting commenced); and

(j) the Fumigator's certificate of competency number, name and signature.

7.9. Post treatment security (Tasmania only)

The following requirements apply to fruit consigned to Tasmania only.

Treated fruit may be allowed to air adequately prior to securing the produce against reinfestation. Treated fruit shall be held for the minimum practical period after fumigation and airing before it must be secured against reinfestation.

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

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

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

Certified fruit must be transported from the facility in secure conditions which prevent infestation by fruit fly. Secure conditions include:

(a) unvented packages;

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

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

(d) shrinkwrapped and sealed as a palletised unit; and

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

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

Where consignments are transported to Tasmania as full container lots, the seal number must be included in the Brand Name or Identifying Marks section of the PHAC covering the consignment (Attachment 5).

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

7.10. Dispatch

7.10.1 Package identification

The Authorised Dispatcher must ensure that, prior to issuing a PHAC, each package intended for certification under this Procedure is marked in indelible and legible characters of at least 5 mm with:

(a) the Interstate (IP) number of the Business that operates the approved facility in which the produce was packed;

(b) the words “Meets ICA-04”;

(c) the date (or date code) on which the produce was packed; and

(d) the Interstate Produce number or other identifier of the grower of the produce, where the grower is a different Business to the packer.

Where the packer uses a different identifier to the IP number of the grower, the packer must maintain a Grower Identifier Record that matches the grower identifier with the grower’s names or IP number so that the grower can be easily identified if required.

Any packages containing produce that has not been prepared in accordance with the requirements of this Procedure must not be marked as stated above.

7.10.2 Plant Health Assurance Certificates

The Authorised Dispatcher must ensure a PHAC (Attachment 5) is completed and signed by an Authorised Signatory prior to the consignment being dispatched.

Assurance Certificates must be completed, issued and distributed in accordance with the work instruction *WI-01 Guidelines for the completion of Plant Health Assurance Certificates*.

Assurance Certificates must include:

(a) in the ‘*Accredited Business that Prepared the Produce*’ section, the name and address of the Accredited Business that treated the produce; and

(b) in the ‘*Grower*’ section, the name and address of the property on which the produce was grown. Where the consignment contains produce from a number of growers the word “VARIOUS” must be used; and

(c) in the ‘Consignment Details’ section,

  (i) the number and type of packages in the consignment; and

  (ii) in the ‘*Produce Type*’ column, a description of the produce; and

(d) in the ‘Treatment Details’ section the Treatment Date, Concentration, Duration and Temperature

(e) in the ‘Additional Certification’ section the statement “Meets ICA-04”.

The Business must not issue a PHAC for produce owned by another Business. An individual PHAC must be issued to cover each consignment to avoid splitting of consignments.

Books of pre-printed PHACs are available from ICA Records Management, Department of Primary Industries, phone 02 6552 3000.

Upon suspension, cancellation or withdrawal of accreditation, the PHAC book must be immediately returned to the Department.

7.10.3 PHAC distribution

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

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

8. RECORDS AND DOCUMENT CONTROL

8.1 ICA system records

The Business must maintain the following records, or similar which record the same information:

(a) Fumigation Dosage Chart for each chamber;

(b) Gas Retention Test Certificate for each chamber;

(c) if applicable, thermometer calibration records;

(d) if applicable, scale calibration records;

(e) Fumigation Treatment Record; and

(f) a copy of each PHAC issued by the Business.

Records must be retained for at least 4 years from completion.

Records shall be made available on request to an Authorised Person.

8.2 ICA system documentation

The Business must maintain the following documentation:

(a) a current copy of the *ICA Procedure*; and

(b) a current *Certificate of Accreditation*.

Documentation must be made available on request to an Authorised Person.

9. ATTACHMENTS

Attachment 1 Application for Accreditation as a Biosecurity Certifier

Attachment 2 Fumigation Dosage Chart

Attachment 3 Fumigation Treatment Record

Attachment 4 Gas Retention Test Certificate

Attachment 5 Plant Health Assurance Certificate

Application for accreditation as a Biosecurity Certifier

A business seeking to become accredited or renew accreditation for an ICA or CA arrangement must complete and lodge an application for accreditation using the prescribed form and paying the application fee.

The application form can be accessed at:

https://www.dpi.nsw.gov.au/biosecurity/plant under the heading **Market access**

Alternatively, contact ICA Records Management:

Phone: 02 6552 3000

Fax: 02 6552 7239

Email: *bfs.admin@dpi.nsw.gov.au*

Fumigation Dosage Chart

Business Name	
Facility Address	
Interstate Produce No.	N_____
Chamber Identification	
Total Chamber Volume	m^3

Dosage Chart

Concentration (g/m^3)	Quantity of Methyl Bromide Grams (g)
32	
40	
48	
56	

Prepared by: _____ _____ / /

Printed Name Signature Date

Fumigation Treatment Record

Owner of Fumigation Facility:						Interstate Produce No.:	**N**
Date of Fumigation:	/ /	Chamber ID:				Chamber Volume:	m^3
Fumigator's Name:						Certificate of Competency No:	
Temperature Readings (°C):						Fumigation Rate:	
Temperature Range (°C):	Maximum Temperature °C		Minimum Temperature °C			Amount of Fumigant Used:	
Grower/Packer Name	Number of Packages	Product Type (eg Banana)	Type of Packages (Cartons, Bins etc.)	Time Vaporisation Completed	Time Venting Commenced	Chamber Loading (%)	ID Code *(If applicable)*
Comments:							

Gas Retention Test Certificate

Operator of Fumigation Chamber:				Interstate Produce No.:	**N**
Facility Address:				Chamber Identification:	
				Date of Test:	/ /
Chamber Dimensions (internal):	length m	width m	height m	Chamber Volume:	m^3
Fumigator's Printed Name:				External Ducting (if applicable):	m^3
Certificate of Competency No.:		Expiry Date:	/ /	Total Chamber Volume:	m^3

Test Number	Fumigation Rate (g/m^3)	Quantity of Methyl Bromide added (g)	Time Vaporisation Completed	Gas Concentration at Monitoring Point(s) after 20 minutes	Gas Concentration at Monitoring Point(s) after 2 hours	Time Venting Commenced	Percentage of Methyl Bromide Retained after 2 Hours

The fumigation chamber described above has been tested in accordance with requirements of NSW Department of Primary Industries Operational Procedure *Fumigating with Methyl Bromide* [ICA-04] and has been shown to achieve at least 50% retention of methyl bromide gas after a 2 hour fumigation period.

_____ _____ / /

Fumigator's Name Signature Date

NSW GOVERNMENT Department of Primary Industries

Certificate Number	

Business Specific Information*

Dispatch Date: / / Ref No:

Arrival Date: / / PO No:

* These items display business specific information entered at the discretion of the consignor. They do not represent any part of the certifying conditions of the produce.

Plant Health Assurance Certificate

A biosecurity certificate issued under Part 13 of the *NSW Biosecurity Act 2015*

All accreditation details must be completed. Please print clearly and initial any alterations.

Consignment Details

Consignor

Name

Address

State Postcode

Consignee

Name

Address

State Postcode

Reconsigned to: (If applicable)

Splitting consignments, preparing composite lots or reconsigning whole consignments

Name

Address

State Postcode

Certification Details

IP Number	Facility Number	Procedure
N		

Accredited Business that prepared produce

Name

Address

State Postcode

Grower(s) (If more than one grower – attach list)

Name

Address

State Postcode

	Number of Packages	Type of Packages (e.g. trays, cartons)	Type of Produce	Brand Name or identifying marks (as marked on packages)	Date Code (as marked on packages)	Authorisation for reconsignment
1						
2						
3						
4						

Treatment Details

	Treatment Date	Treatment Chemical (Active Ingredient), Concentration, Duration, Temperature
1	/ /	
2	/ /	
3	/ /	
4	/ /	

Additional Certification/Codes:

This certificate is valid for 21 days from date of certification

Declaration

I am a person authorised under the *NSW Biosecurity Act 2015* to issue this biosecurity certificate and I hereby certify that the details shown above are true and correct and the procedure(s) listed above have been completed.

Full name *Signature* *Date*

***Note:** A person who provides false or misleading information on a biosecurity certificate is guilty of an offence under the Act. Such action could result in a penalty infringement notice or prosecution. The maximum penalty for an individual is $1,100,000, and the maximum penalty for a corporation is $2,200,000. This information is collected by the collecting agency identified in this form in relation to its functions under the Biosecurity Act 2015. This agency/s and the NSW Department of Industry may use and disclose this information as reasonably necessary for the purpose of performing biosecurity risk functions under, or reasonably contemplated by, the Biosecurity Act 2015.*