

ICA-04: Fumigation with Methyl Bromide

REVISION REGISTER

Date of issue	Amendment details
14/02/2019	Version 8.0: Amendments to align to new Tasmanian entry requirements; add responsibilities for Fumigator add temperature requirement for treatment chamber (7.1); add chamber temperature standards (7.5); add fruit fly infestation inspection (7.1–0); require 3 pulp temperature testing for bins and Tasmanian allowance for <3 packages (7.7); add record keeping for treatment chamber temperature (7.10).
05/03/2020	Version 8.1: Amendments to align to new Tasmanian entry requirements; addition of requirement to uniquely number each chamber (7.1); addition of chillies to pre-treatment inspection requirements (7.6.4); addition of designated fumigation chamber for mangoes, stone fruit, chillies (7.6.2) addition of requirement to record chamber number and fumigation time (if applicable) on PHAC (7.11.2), renumbering of attachments and addition of Tasmania PHAC example (10 and Attachment 2).
20/09/2021	Version 8.2: update procedure to new format; update of references; addition of definitions for approved inspection service, consignment, high-risk product, pre-treatment inspection, standard concentration, and unit; addition of responsibilities for the approved inspection services; addition of citrus to the high risk definition (4.0); addition of pre-treatment inspection and post treatment security to the requirements; remove the specifics for Tas/SA (7.1, 7.5, 7.11); update to the inspection procedure (7.1); addition of internal heating and fans to the facility (7.2); addition of the details to the fumigation dosage chart (7.2.1); addition of the details for the Gas retention test certificate (7.3.1); relocate the measurement of product temperature (from 7.6.10 to 7.6); clarify the produce temperature probe locations (7.6.1); Addition of details in Packaging Fumigant permeability (7.7.2); relocate loading rates (from 6.3 to 7.7.3); addition of a second application of fumigant technique (loss of weight system 7.8.2); addition of calibration of weighing scales (7.8.3); updated mixing of fumigant to harmonise with DAWE (7.8.5); update to treatment records (7.10); addition of writing the chamber load percentage on the PHAC (7.12.2).
01/06/2022	Version 8.3: update the definition of high-risk fruit fly product
11/10/2022	Version 8.4: removal of silverleaf whitefly and stone fruit from the definition list, removal of individual high-risk fruit from the responsibilities; update of reference (3) change name of PSW-02 to SOP; update of the inspection service to Inspection person (4, 5, 6.3, 7.1, 7.1.3, 7.1.4, 7.1.6) update definition of inspection person.
30/11/2023	Version 8.5: review removal of thrips and addition of Phylloxera to the definition list (4); and update of departmental name; addition of fumigation rates for phylloxera 6.3; option for one pallet label for Tasmania (7.12.1); addition of the requirement for businesses to lodge a completed Methyl Bromide Fumigation Health and Safety Checklist and supporting documentation with new applications as well as at reaccreditation (8.1.1 and 8.2.3).

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1 Purpose

The purpose of this procedure is to describe:

- the principles of operation, design features and standards required for fumigation chambers and facilities; and
- the responsibilities and actions of personnel;

that apply 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.

This procedure covers the requirements of plant and plant material for quarantine treatment for Queensland fruit fly and other pests, where the requirements are a specified condition of entry of an interstate quarantine authority and/or intrastate markets.

This procedure does not override the responsibility of fumigators to comply with chemical use obligations and relevant occupational health and safety legislation.

Certification of post-harvest fumigation under this procedure may not be an accepted quarantine entry condition for all intrastate and interstate markets.

Some intrastate or interstate markets may require additional quarantine certification 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 quarantine requirements can be obtained from a local Agriculture Victoria Inspector.

Information on interstate quarantine requirements can be obtained from the plant quarantine service in the destination state.

Agriculture Victoria and interstate quarantine authorities maintain the right to inspect at any time produce and to refuse to accept a certificate where produce is found not to conform to specified requirements.

3 References

Plant Biosecurity Act 2010

Standard Operating Procedure - Completion of Plant Health Assurance Certificates.

Standard Operating Procedure - Pre-inspection for Fumigation under ICA-04

4 Definitions

Accredit	means to authorise nominated staff within a business to issue assurance certificates.
Application for Accreditation	means an Application for Accreditation of a business for an Interstate Certification Assurance (ICA) arrangement.
Approved Inspection Service	means a Business authorised by Agriculture Victoria under the Act.
APVMA	means the Australian Pesticides and Veterinary Medicines Authority.
Assurance Certificate	means a Plant Health Assurance Certificate (PHAC).
Audit	means the verification activity for evaluation of conformance or non-conformance with accreditation requirements.
Authorised Inspector	means an inspector authorised under the Act.
Authorised Signatory	means an employee of an ICA accredited business whose name and specimen signature are provided on the business's Authorised Signatory form.
Business	means the legal entity responsible for the operation of the facility and ICA arrangement detailed on the business's Application for Accreditation.
Certification Assurance	means a voluntary arrangement between the Accrediting Authority and a business that demonstrates effective in-house quality management and provides assurance through documented procedures and records that certified produce meets specified requirements.
Certified/Certification	means covered by a valid Plant Health Assurance Certificate.
Chamber	means a permanent or semi-permanent 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.
Consignment	means a quantity of packed produce described on one PHAC by a single consignee.
Facility	means the approved location of the fumigation chamber or chambers covered by the ICA arrangement.
Fumigant	means 1000g/kg methyl bromide (CH ₃ Br).
Fumigation	means the treatment of produce with methyl bromide fumigant.
Fumigator	means a person licensed to undertake fumigation pursuant to the requirements of relevant legislation.

High-risk product	means commodities deemed as high risk for Fruit Fly, as defined by the receiving jurisdiction.
Inspection person	means either an Authorised Inspector or Inspection Agent, being a principal or an employee of an Approved Inspection Service and is annually trained, assessed, and found competent in the signs and symptoms of fruit fly.
Interstate Certification Assurance (ICA)	means a system of Certification Assurance developed to meet the requirements of State and Territory governments for the plant health certification of produce for interstate and intrastate quarantine purposes.
Load	means total number of packages covered by one fumigation treatment.
Lot	means a discrete number of packages of one produce type (e.g. apples or mangoes) from one source (e.g. one packer).
Mediterranean Fruit Fly (MFF)	means all stages of the species <i>Ceratitis capitata</i> .
Phylloxera	means the insect <i>Daktulosphaira vitifolii</i> (Fitch).
Plant Health Assurance Certificate (PHAC)	means certification issued by an Authorised Signatory of an accredited business.
Pre-treatment inspection	means the process by which a representative sample is drawn and inspected from the chamber load prior to fumigation.
Queensland Fruit Fly (QFF)	means all life stages of the species <i>Bactrocera tryoni</i> (Froggatt).
Standard concentration	means the fumigant concentration below which the fumigation will not be effective unless additional fumigation is added to the chamber to compensate.

Initial Dose (g/m ³)	Start Point (g/m ³)		End of Exposure Period(g/m ³)
	≥85% 15 - 30 min after end of vaporisation	≥75% 30 min to 1 hr after end of vaporisation	≥60% 2 hrs after Start Point
32	27.2	24	19.2
40	34	30	24
48	40.8	36	28.8
56	47.6	42	33.6

The Act means the Plant Biosecurity Act 2010 (the Act).

Unit means a single whole piece of fruit.

5 Responsibility

The position titles used reflect responsibilities of staff under this arrangement. These positions may not be present in all businesses, or different titles may be used for staff who carry out these responsibilities. One person may carry out the responsibilities of more than one position.

The **Certification Controller** is responsible for:

- representing the business during audits and other matters relevant to ICA accreditation;
- ensuring the business has current accreditation under this procedure;
- training staff in their duties and responsibilities under this procedure;
- ensuring the business and its staff comply with their responsibilities and duties;
- ensuring all fumigation is performed by a licensed fumigator;
- ensuring the fumigation facility has been approved by relevant local Authorities;
- obtaining and reading the Safety Data Sheet for the fumigant in use; and
- arranging workplace risk assessments in compliance with relevant Victorian legislation.

The **Fumigator** is responsible for:

- maintaining a current Agricultural Chemical User Permit issued by Agriculture Victoria;
- maintaining the fumigation chamber and fumigation equipment;
- maintaining calibration and fumigation records;
- maintaining temperature monitoring equipment and temperature records;
- maintaining inspection equipment for access by the Inspection person to undertaken pre-fumigation inspection of high-risk product;
- ensuring all high-risk products have been inspected for fruit fly infestation prior to treatment where required; and
- ensuring produce temperature is within the required range and the treatment chamber remains within the correct temperature range during treatment.

The **Authorised Dispatcher** is responsible for:

- ensuring all packages intended for export under this procedure are covered by a PHAC;
- ensuring all packages covered by an Assurance Certificate are identified; and
- maintaining copies of all Assurance Certificates issued.

The **Inspection person** is responsible for:

- being trained and assessed competent by Agriculture Victoria to undertake pre-treatment inspections for Fruit Fly;
- operating in accordance with the Standard Operating Procedure for the ICA-04 pre-treatment inspection;
- undertaking pre-treatment inspection on all high-risk products;
- mark all the boxes in the inspection lot to show that they have been inspected; and
- provide a record of these inspections to the certification controller.

The **Authorised Signatory** is responsible for:

- ensuring prior to signing and issuing an Assurance Certificate, that produce covered by the certificate has been prepared in accordance with the business's ICA arrangement, and the details on the certificate are true and correct in every particular.

6 Requirement

Fumigation must be conducted with a product containing 1000g/kg methyl bromide as its only active ingredient. DO NOT use chemicals containing chloropicrin.

This procedure sets out the steps required for compliance with the relevant law(s) or regulatory standards. Before following this procedure, you should:

- assess the effects of chemical treatment on small quantities of your plants or plant product to eliminate the risk of any damage to plant or plant product; and
- ensure all personal protection and safety measures are in place to prevent injury to person(s) carrying out the treatments.

When carrying out treatments, you will be responsible for ensuring compliance with the procedure, taking into account each applicable standard, manufacturing guideline or recommended operating procedure, all workplace health and safety requirements, and compliance with each applicable interstate or national requirement.

The business must use chemical products in accordance with the instructions included on the products approved label, APVMA permit and this ICA procedure, and follow any first aid, safety, protection, storage and disposal directions on the product label.

The Agricultural and Veterinary Chemical (Control of Use) Regulations 2017 specifies certain chemical use records must be made within 48 hours of use and kept for a minimum of 2 years. Businesses may be required to keep more records of chemical use than as specified by this procedure. ICA record keeping is in addition to the Agricultural and Veterinary Chemical (Control of Use) Regulations record keeping.

Businesses treating produce for fee or reward are required to hold a Commercial Operators Licence with Agriculture Victoria. Contact the Customer Service Centre (136 186) for information.

The business has the responsibility of ensuring that treated produce does not contain an agricultural chemical residue above the Maximum Residue Level (MRL).

Agriculture Victoria will not be responsible for any damage to plant or plant product or any personal injury that may result from your use or application of treatments.

For further information contact the Customer Service Centre on 136 186 or visit www.agriculture.vic.gov.au.

Fumigation must be conducted for a period of two (2) hours at one of the following rates.

6.1 Fumigation for Queensland Fruit Fly

Requirements for fumigation for Queensland fruit fly (QFF)

Flesh and Ambient Air Temperature (°C)	Methyl Bromide (g/m ³)
21 - 31.9	32
17 – 20.9	40
DO NOT apply when flesh temperatures exceed 31.9°C.	

The temperature of fruit and fruiting vegetables prior to fumigation must be at or above 17°C. The temperature must be taken from the flesh next to the seed (if seed present).

6.2 Fumigation for Mediterranean Fruit Fly and Other Plant Pests

Requirements for fumigation for Mediterranean fruit fly (MFF) and other plant pests

Temperature (°C)	Methyl Bromide (g/m ³)
21 - 31.9	32
16 – 20.9	40
11 – 15.9	48
10 – 10.9	56
DO NOT apply when flesh temperatures exceed 31.9°C.	

The temperature prior to fumigation must be above 10°C and for:

- Fruit and fruiting vegetables – taken from the flesh next to the seed (if seed present); or
- Food producing plants and ornamentals – must be above 10°C and below 32°C taken adjacent to, or within the article being fumigated (for example, centre of carton).

6.3 Fumigation for Phylloxera

Methyl Bromide (g/m ³)	Temperature (°C)
32	21 – 31.9
40	17 – 20.9

The temperature of the grapes prior to fumigation must be at or above 17°C. The temperature must be taken from the centre of the fruit treated.

6.4 Inspection of high-risk product for Fruit Fly

Where high-risk products are being treated for Fruit Fly and where required by the receiving jurisdiction, a 600-unit pre-treatment inspection per chamber load must be completed by an Inspection person. Each unit must be inspected and found to be free of live Fruit Fly.

Separate 600-unit inspections must be completed for each high-risk product in a chamber load (i.e., 600 mangoes and 600 peaches).

Where there are less than 600 units of each high-risk product type in a chamber load, all the high-risk product in the chamber load must be inspected respectively.

6.5 Chamber Loading Rates

Loading rates within the chamber must be:

- for fruits and vegetables - not less than 30% nor more than 50% of the volume of the chamber when empty; and
- for all other plants and plant products - not more than 50% of the volume of the chamber when empty.

Inadequate ventilation of produce after fumigation may lead to residues of methyl bromide above the Maximum Residue Limit (MRL) and leave produce open to seizure by relevant authorities.

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

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

The business must use products in accordance with the instructions included on the product's approved label, any applicable APVMA Minor Use Permit and this procedure; and follow any first aid, safety, protection, storage and disposal directions on the product label.

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

6.6 Licence

Agricultural Chemicals that are Schedule 7 Poisons are "restricted use" chemicals under Victoria's Agricultural and Veterinary Chemicals (Control of Use) Act 1992. The fumigator must be authorised for use of fumigants and must carry out all fumigation activities under this procedure.

A current Agricultural Chemical User Permit (ACUP) for fumigants must be held by the fumigator where they are not receiving a fee or reward for conducting the treatment (e.g. treating their own produce only).

Note: Where conducting fumigation treatment for fee or reward, a Commercial Operator's Licence and/or a Pest Controllers Licence that authorises fumigation is required.

For more information on chemical use requirements go to www.agriculture.vic.gov.au.

6.7 Post treatment security

Following treatment, produce must be stored at and transported from the facility in secure conditions which prevent infestation by fruit fly (See Section 7.11).

7 Procedure

7.1 Pre-treatment produce inspection

Where required by the receiving jurisdiction, an Inspection person must conduct inspection of high-risk product in accordance with the Standard Operating Procedure - Pre-inspection for Fumigation under ICA-04 and the requirements of this procedure.

7.1.1 Inspection Procedure for Fruit Fly

A pre-treatment inspection for Fruit Fly must occur for each chamber load containing high-risk product as close as practical and not more than 48 hours prior to the time of treatment.

High-risk product must be inspected by conducting a packed product inspection following assembly of a chamber load prior to treatment.

7.1.2 Inspection Rate

A separate representative 600-unit inspection must be completed for each high-risk product in a chamber load (i.e. 600 mangoes and 600 peaches for a given chamber load).

Inspection of high-risk product must be completed as detailed in the Standard Operating Procedure - Pre-inspection for Fumigation under ICA-04.

7.1.3 Marking of boxes

The Inspection person must mark all the boxes in the inspection lot to show that they have been inspected and found free of Fruit Fly.

7.1.4 Records of Inspections

The Inspection person will provide details of the inspection to the Certification Controller for maintaining.

The Inspection records must include –

- date and time of inspection;
- produce type;
- grower/packer name for each inspection lot;
- town of where produce is grown/packed;
- postcode of where produce is grown/packed;
- number of units sampled in each inspection lot;
- inspection results including freedom or presence of suspect fruit fly;
- comments on the inspection, including any actions taken resulting from suspected detection of fruit fly;
- name and signature of Authorised Inspection Person.

7.1.5 Inspection Equipment

Businesses must maintain the following inspection equipment:

- an inspection bench or table in an area protected from adverse weather conditions which is constructed of stable, rigid and durable material i.e. steel, timber or plastic that is of a reasonable size and height which is painted in a light colour or covered in a durable light coloured material placed in a well-lit and ventilated area on a flat sealed and durable surface i.e. concrete;
- adequate illumination; and
- reference illustrations and photographs for identification of fruit fly (attachment 7).

The business must also provide a means of:

- segregating and isolating produce which has 'passed' inspection from all other Fruit Fly host produce; and
- segregating and isolating produce which has 'failed' inspection, either due to suspect or confirmed presence of Fruit Fly, from all other Fruit Fly host produce.

7.1.6 Action Following Identification of Non-conforming Product

The Inspection person must immediately advise the Fumigator of any detection of suspect Fruit Fly identified during the inspection.

Produce that has failed inspection due to the suspected presence of Fruit Fly and is intended to be sent to a Fruit Fly restricted market must be segregated and isolated from all other fruit fly host produce until either a confirmation is received that the suspect fly is not a Queensland or Mediterranean Fruit Fly or until it is returned to the consignor or supplier.

The lot that has had larvae detected must be rejected for treatment by the Fumigator. Additionally, all other produce from the grower/packer of the non-conforming lot must also be rejected for treatment for that day, excluding any produce that has already been treated.

If the suspect fruit fly is subsequently confirmed not to be Queensland or Mediterranean Fruit Fly, all rejected product may be reconsidered for certification.

Where a new lot is substituted from a different grower/packer, the same original proportional inspection as that conducted on the original lot must be conducted on the substituted produce (see example below).

Any additional non-conforming product will follow the same process as described above.

Where the suspect fruit fly is identified by an entomologist, the Certification Controller may obtain written notification from the entomologist.

Example: The proportion of the 600-piece inspection required for nectarines in the chamber was 60 pieces, as there were 10 different lots of stone fruit in the chamber. One package was found to have multiple nectarines with larvae present.

The whole lot was substituted from another grower/packer and therefore the substituted lot will also require 60 nectarines to be inspected for fruit fly infestation.

7.1.7 Storage and Identification Procedure

The business must ensure that each inspection lot of high-risk product which has passed inspection has been identified. Each inspection lot which has passed inspection is to be marked in such a way to be clear that the inspection lot has been inspected and found free of QFF or MFF. Each inspection lot which has passed inspection must be segregated from all other Fruit Fly host produce to prevent mixing with nonconforming produce and produce that has not been inspected.

7.2 Fumigation Facility

Each chamber operated at the facility for methyl bromide fumigation of produce must:

- be a permanently constructed chamber or a semi-permanent chamber made from gas-proof material designed specifically for the purpose of fumigation; and
- be uniquely numbered for identification; and
- be covered by a current and valid Gas Retention Test Certificate issued by a licensed fumigator within the last six (6) months (refer 7.3); and
- include temperature measurement and recording equipment to measure the ambient air temperature during treatment (refer 7.5); and
- include appropriate internal heating equipment; and
- include fans to adequately mix the fumigant throughout the chamber.

7.2.1 Fumigation Dosage Chart

The Certification Controller must ensure a record is maintained, which details the quantity of fumigant required to be added to the chamber to achieve the desired concentration. This record must be in the form of a Fumigation Dosage Chart (Attachment 2) or similar record. This record must be kept in close proximity to the relevant chamber.

The chart must provide the following details –

- the Business's name and Interstate Produce (IP) number;
- the identification of the chamber to which the chart applies;
- the total chamber volume in cubic metres;
- the quantity of methyl bromide in grams (g) required to be added to the chamber to achieve the correct concentration;
- The printed name and signature of the licensed fumigator responsible for the preparation of the chart and the date of preparation.

7.2.2 Fumigation Chamber and Equipment Maintenance

The Fumigator must carry out regular checks of the fumigation chamber and any fumigation equipment such as halide lamps, gas monitoring devices and gas sampling tubes and temperature monitoring equipment to ensure continued effective operation and freedom from malfunction, damage or excessive wear.

7.3 Gas Retention Testing

The Fumigator must ensure all operational chambers are tested for gas retention at least every six (6) months, or as required by an Authorised Inspector. All chambers used for methyl bromide fumigation must be covered by a valid Gas Retention Test Certificate.

Gas Retention Test Certificates (refer 7.3.1) must be issued following testing under the supervision of an Authorised Inspector in accordance with the following:

- after preparing the chamber in accordance with the requirements of this procedure, gas concentrations must be measured and recorded twenty (20) minutes after the start of the fumigation and at two (2) hours after the start of the fumigation prior to venting.
- a measurement must be taken at all monitoring points to determine the concentration of fumigant. All measurements must be within $\pm 5\%$ of each other at the twenty (20) minute monitoring where more than one monitoring point is in use (refer 7.7).
- where measurements are not within $\pm 5\%$ of each other at the twenty (20) minute monitoring, the fumigation will be deemed to have failed and the Fumigator must vent off all fumigant, ensure gas freedom and then inspect the chamber for the possible cause.
- a minimum of 60% of the original fumigant concentration is required to be retained at the final monitoring (after two hours). If the required final concentration is not reached then the fumigation will be deemed to have failed and the Fumigator must vent off all fumigant, ensure gas freedom and then inspect the chamber for the possible cause.
- a Chamber Test Certificate may be issued for that chamber immediately following at least one successful fumigation retention test for that chamber.

The Authorised Inspector may require additional retention testing if considered necessary.

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

7.3.1 Gas Retention Test Certificate

The test record must be in the form of a Gas Retention Test Certificate (Attachment 4), or other certificate which captures the same information.

The *Chamber Test Certificate* must record –

- the name and Interstate Produce (IP) number of the Business that operates the fumigation chamber;
- the facility address;
- the identification of the chamber or impervious tarpaulins to which the certificate applies;
- the date of the test;
- the measurements of the chamber;
- the chamber volume;
- the volume of any external ducting;
- the total chamber volume in cubic metres;
- for testing under the retention test method:
 - the fumigation rate (g/m^3);
 - the time of vaporisation;
 - the quantity of methyl bromide in grams (g) added to the chamber to achieve the concentration at the time of the test(s);
 - the readings for each monitoring point for each test at 20 minutes after vaporisation is complete;
 - the readings for each monitoring point for each test at the end of the test (at two hours after vaporisation is complete);
 - the time venting commenced;
 - the percentage of gas retained for each test at the end of the test;
- for testing under the pressure decay method:
 - the time in seconds it takes for the pressure to decay from 200 Pa to 100 Pa;
- the licence number, printed name and signature of the licensed fumigator who performed the test(s).

7.4 Calculation of Fumigation Chamber Volume

The volume of the space to be fumigated is calculated using a measuring tape or other suitable device to determine length, width and height and is to be expressed in cubic metres (m³).

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:

- (chamber height (m) x chamber length (m) x chamber width (m)) + external ducting volume (m³) = total chamber volume (m³).

For example:

- Chamber Height = 2.5m Length = 3m Width = 3m
- Chamber Volume = 2.5 x 3 x 3 = 22.5 m³
- External Ducting Volume = 0.5 m³ (if applicable)
- Total Chamber Volume = 22.5m³ + 0.5m³ = 23.0m³

Details of chamber volume and fumigant dosage rates must be prominently displayed in the vicinity of the chamber (refer 7.2.1).

7.5 Treatment Chamber Ambient Air Recording

The ambient air temperature within the fumigation chamber must be maintained at the minimum temperature specified in section 6.1 and 6.2 for the relevant dosage to be applied. Each chamber must be equipped with appropriate internal heating equipment to ensure the chamber is maintained at the minimum temperature required during fumigation treatment.

Temperature monitoring devices must be checked on a regular basis to ensure they continue to operate effectively.

The Certification Controller must:

- ensure that ambient air temperature sensing instruments in the chamber are located in a position that does not receive direct airflow from the circulation fans and heating element. The sensor must be located in an area either behind the circulation fans or an area in which the air passing the sensor is returning to the fans (i.e. return air monitoring); and
- take ambient air temperature recordings every thirty minutes during the fumigation.

7.5.1 Ambient Air Temperature Sensing and Recording Equipment

Temperature sensing and recording systems must have an overall variance of not more than $\pm 0.5^{\circ}\text{C}$ in the range of 10°C to 31°C . The sensor and recording system must have a resolution of not more than 0.1°C .

The combined sensing and data recording systems must be accurate to within 0.5°C of the true temperature and must be able to be read in increments of 0.1°C or less.

7.5.2 Ambient Air Temperature Sensors

Each sensor must be uniquely identified e.g. a tag attached to the sensor or on the adjacent wall. Each sensor must be matched to a specific data recorder or uniquely identifiable in a computer database.

A plan indicating the location and identity of each sensor must be kept with the data-recording instrument. A blank Sensor Placement Plan is provided at Attachment 5.

7.5.3 Ambient Air Temperature Recording Equipment

Output of recording instruments must be accurate to within ± 0.1 °C of the true temperature in the range of 10 °C to 31 °C in the normal operating environment. The instrument must be capable of recording in the range of 10 °C to 31 °C.

Strip Chart Recorder Display Standards

The scale deflection for strip chart recorders must not be less than 5 mm for each degree Celsius. A print interval of approximately two minutes and a chart speed of approximately 500mm per hour must be used.

The chart scale must be graduated with major scale marks at 1 °C graduations and minor scale marks at 0.2 °C graduations. Temperature values for each sensor must be printed at least once every 30 minutes.

Each symbol on the wheel must correspond to and identify the sensor it represents. The chart must be of sufficient length to display a complete treatment record.

Data Logger Display Standards

For each sensor the temperature value must be sampled at least every 30 minutes with identified temperature points accurate to 0.1 °C. Each reading must be displayed on the data log sheet/database and contain a clear, fully informative record including the sensor identity/location, the temperature reading to a resolution of at least 0.1 °C, and the date and time of sampling.

Mini Data Logger Display Standards

For mini data loggers, temperature records must be downloaded onto a personal computer at completion of the treatment period. At conclusion of the treatment, the Fumigator must save the treatment record until the next audit on a computer or obtain print outs of the treatment temperatures throughout the treatment period and date and sign these data log sheets as being an accurate treatment record (refer 7.10).

For each sensor, the temperature value must be sampled at least once every 30 minutes with identified temperature points accurate to 0.1 °C. Each reading must be displayed in the computer database or on the data log sheet and contain a clear, fully informative record including the sensor identity/location, the temperature reading to a resolution of at least 0.1 °C and the date and time of sampling.

Manual Recording Systems

Temperature reading and recording may be completed manually on log sheets maintained by the Fumigator. Temperatures must be read from each sensor and recorded on log sheets at least every 30 minutes for the duration of the treatment.

Each reading must contain a clear, fully informative record including the sensor identity/location, the temperature reading with a resolution of not more than 0.1 °C, the date and time of sampling, and the identification and initials of the staff member taking the reading. Manual temperature sampling must only be carried out by the Fumigator or Certification Controller.

7.5.4 Calibration of Ambient Air Temperature Sensing and Recording Equipment

The Fumigator must ensure temperature sensors and recording systems are calibrated at least annually. Temperature calibration must be conducted at the freezing point of water (0 °C). At calibration, each sensor must be uniquely identified and matched with the corresponding data recorder.

Calibration must be undertaken by the Fumigator or by a recognised Testing Authority. For the purpose of this Procedure, a recognised Testing Authority is a person or company that is approved by the manufacturer or Agriculture Victoria to calibrate treatment chamber temperature sensing and recording equipment.

Calibration Method

Where calibration is undertaken by the Fumigator, the calibration method below must be used.

a) Equipment and Supplies

- An insulated container with a volume of at least 1 litre and an open neck.
- Thermometer clamp or similar device.
- 5 litres of chilled de-ionised water.
- Crushed ice made from de-ionised water.

b) Sensor Calibration Procedure

Sensor calibration must be undertaken at least annually. Calibration must be conducted using a mixture of crushed ice made from de-ionised water and de-ionised water in an insulated container using the following procedure –

- Fill the insulated container with crushed ice. Add sufficient pre-cooled de-ionised water to cover the ice.
- Thoroughly stir the ice/water mixture. Add additional ice as the ice melts.
- Using the thermometer clamp or similar device, submerge each sensor in the ice/water mixture. Sensors must not touch the sides or bottom of the container.
- Constantly stir the ice/water mixture while testing is being carried out. Allow the temperature shown by the sensors to stabilise at the lowest temperature obtainable.
- Two consecutive readings must be recorded for each sensor at the lowest temperature obtainable. There must be at least a 60 second interval between the two readings for any one sensor.

Calibration must be to the nearest 0.1 °C. Any sensor that records a temperature of ± 0.5 °C or more from the standard of 0.0 °C must be replaced.

The temperature variance of each sensor must be calculated as the mean of the variation of the two readings from 0 °C and must be clearly identified for each sensor and traceable to the data recording instrument.

The Fumigator must maintain records of the results of calibration of all temperature sensors and recording equipment used under this Procedure.

Records must be in the form of calibration test records from the recognised Testing Authority or a Treatment Chamber Sensor Calibration Test (Attachment 6) or similar record that includes the following information:

- the business name and interstate produce number;
- the date of calibration;
- the identification of the sensor and data recording instrument;
- the results of the two readings taken at 0.0 °C;
- the correction (\pm °C), if any, to be applied to the sensor reading; and
- the name of the person or recognised Testing Authority that conducted the calibration.

7.6 Measurement of Produce Temperature

Immediately prior to the commencement of fumigation, the Fumigator must determine the minimum flesh temperature of each load of produce to be fumigated using a calibrated thermometer.

The temperature prior to fumigation must not be below:

- 17°C for fruit and fruiting vegetables - taken from the flesh next to the seed (if seed present) treated for Queensland Fruit Fly and Phylloxera; or
- 10°C for fruit and fruiting vegetables - taken from the flesh next to the seed (if seed present) treated for Mediterranean fruit fly and Other Plant Pests; or
- 10°C for food producing plants and ornamental plants – taken adjacent to, or within the article being fumigated (e.g. centre of carton).

7.6.1 Fruits and Vegetables

For each sample, the thermometer must be inserted into the piece(s) of fruit or vegetable by placing the tip of the temperature probe into the centre of a piece of fruit located in the middle of a carton and the flesh temperature measured.

If minimum temperature requirements are not met, the product must be rejected for fumigation until it meets the minimum required temperature. This may be achieved through heating the product until sampling confirms that the produce meets the requirements specified above.

At least three temperature readings must be taken from each bin or pallet or lot on each pallet. Separate temperature measurements must be taken from each lot of fruit or vegetables in the load as described below:

- i. Where the lot is on a pallet, at least three different cartons in a lot must be inspected, including samples taken from:
 - One from the top of the pallet;
 - One from the centre/inside/middle of the pallet; and
- ii. Where the lot is in a bin, at least three different sample readings must be taken from each bin, including samples taken from:
 - One from the top of the bin;
 - One from the centre/inside/middle of the bin; and
- iii. In addition to three readings specified above, a further three readings must be taken for each commodity in the pallet, lot on a pallet or bin that is either a different fruit variety or supplied by a different grower and/or packer.

7.6.2 Live Plants and Plant Products

The Fumigator must take sufficient temperature readings from each lot to be fumigated to determine the minimum and maximum temperatures of the load.

Temperature readings must be taken adjacent to, or within the article being fumigated (e.g. centre of carton).

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

7.6.3 Produce Temperature Records

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

7.6.4 Produce Temperature Equipment

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

Thermometers must be capable of reading in graduations of 0.1 °C must be used.

7.6.5 Calibration of Thermometers

Thermometers used for measuring produce temperatures must have been calibrated within the previous six (6) months and must 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:

- the date of calibration;
- the identification of the thermometer calibrated;
- the temperature reading(s) and the correction, if any, to the thermometer reading to an accuracy of at least ± 0.1 °C; and
- the name of the person or testing authority responsible for conducting the calibration.

Ice - Point Check Calibration

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

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, then record the 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 ± 0.5 °C the thermometer is unsuitable for use under this procedure.

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

7.7 Preparing, Loading and Sealing the Chamber

7.7.1 Pre-Treatment Checks

The Fumigator must, prior to the chamber being loaded:

- check the chamber for damage and possible leak sites;
- repair any damage (e.g. torn door seals or holes / tears in walls); and

- check that chamber circulation and ventilation systems are operating correctly and all vents are closed and sealed.

Each chamber must be pre-heated to not less than the minimum required temperature prior to produce being loaded into the chamber for fumigation. Any chamber which fails to meet the minimum temperature requirement must not be used for fumigation.

7.7.2 Packaging Fumigant Permeability

Produce may be fumigated either unpacked, in bulk bins or in acceptable packing as described below:

All packaging must be opened or otherwise arranged as follows to allow the fumigant to readily circulate around and into the target of the fumigation:

- Products that are tightly packed into cartons in plastic sleeves (e.g. Cut flowers) must be loosened within boxes to ensure adequate gas penetration during fumigation;
- Polythene type liners or non-perforated liners must be opened at the top;
- If open ends of plastic sleeves are packed together in the middle of the carton, the cartons must be re-packed with the open ends be placed towards the sides of the cartons;
- Cartons without ventilation holes or with flowers in plastic sleeves obscuring the holes must be stacked with the tops open or with holes punctured in the sides.

The Fumigator must ensure that any produce which is packaged or covered with impervious materials such as plastic bags or waxed paper are either opened, cut, or removed to allow adequate penetration of the gas.

Acceptable perforations include:

- not less than four unobstructed perforations of 6mm diameter per 100cm²; or
- five unobstructed perforations of 5mm diameter per 100cm²; or
- numerous pinholes (at least 6 holes per square centimetre).

Wrapped products must be in a single layer so that the perforations are not blocked by the wrapping overlapping itself.

7.7.3 Loading

The Fumigator must 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 must be left between each package, pallet load or bulk bin in the chamber with a minimum space of 10cm between the top and sides of produce to the walls and ceiling.

The Fumigator must calculate loading rates within the chamber to ensure specified loading rates are not exceeded for the product being fumigated.

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

Loading rates within the chamber must be:

- for fruits and vegetables, not less than 30% nor more than 50% of the volume of the chamber when empty; and
- for all other plants and plant products, not more than 50% of the volume of the chamber when empty.

7.7.4 Placement of Gas Supply Line(s)

The gas supply line(s) must be strategically placed within the chamber to allow the effective introduction and dispersal of the gas. As the fumigant is 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 (refer 7.8.5).

7.7.5 Placement of Gas Sampling Line(s)

For monitoring of gas concentrations during each fumigation, gas-sampling lines must be positioned within the chamber. Sampling lines must be crushproof (for example 6 mm internal diameter hydraulic hose is effective) and must be positioned as follows-

- for chambers less than 5 m³ one gas sampling line shall be located in the centre of the stack where possible within the centre carton/package; or
- for chambers 5 m³ or greater three sampling lines shall be used and located at the top back, centre, and base front of the stack where possible within the top carton/package at one end of the enclosure and the centre carton/package in the middle of the enclosure and the bottom carton/package at the opposite end of the enclosure from the top sampling tube.

7.7.6 Sealing the Chamber

Once all of the produce has been placed into the chamber, the Fumigator must 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.

7.8 Fumigation Treatment

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

7.8.1 Calculation of Fumigant Dosage

The fumigant dosage rates are specified in this procedure (6) and the APVMA Permit. The dosage rate varies for change in temperature from a minimum of 10°C to maximum of 31.9°C. These temperatures are dependent on the pest species being treated.

The dosage rate applied to fumigation must 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 the minimum temperatures specified (refer 6) or above 31.9°C.

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

- Chamber volume (m³) x dosage rate (g/m³) = methyl bromide (g)

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

7.8.2 Application of Fumigant

Sealed System

The Fumigator must measure 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.

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.

7.8.3 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.

7.8.4 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 methyl bromide as a hot gas.

The heat source for the vaporiser must be capable of heating the water in the vaporiser to at least 65 °C and maintaining the temperature at or above this while the methyl bromide is being applied to the enclosure.

7.8.5 Mixing of Fumigant

To ensure adequate mixing, fans must be used to disperse the gas throughout the chamber and thereby enhance the penetration of the fumigant.

The fumigation treatment period will start when:

- all concentration readings are equal to or above the standard concentration; and
- equilibrium has been established

Equilibrium is achieved when the highest concentration reading is within 15% of the lowest concentration reading.

The formula for calculating equilibrium is:

$$\frac{\text{Highest Reading} - \text{Lowest Reading}}{\text{Lowest Reading}} \times 100 = \text{Equilibrium \%}$$

If the result of this calculation is more than 15%, equilibrium has not been achieved and the fans must be turned on again to further circulate the fumigant. Additional readings must then be taken until equilibrium has been achieved or the concentration falls below the standard concentration. Once initial equilibrium has been achieved it is not required at any other time.

If additional fumigant needs to be added before the start point has been reached, the amount must be calculated by subtracting the lowest concentration reading from the initial dose rate and multiplying that by the volume of the enclosure.

The formula for this is:

(Initial Dose Rate – Lowest Concentration Reading) × Volume

If more fumigant is added to the enclosure before start time is achieved, the time the injection of additional fumigant is completed becomes the new injection completion time for determining the required start time concentration.

All initial concentration readings and the time they were taken must be recorded (7.10). This includes any readings taken prior to achieving start point.

Effective mixing of methyl bromide may be determined by monitoring gas concentrations at all monitoring points 20 minutes after the introduction of the gas (refer 7.8.7). All monitoring points must equilibrate within $\pm 5\%$ of each other (where more than one sampling point is used) otherwise the fumigation is deemed to have failed.

7.8.6 Testing for Leaks

Once the fumigation has commenced, the Fumigator must test the chamber for leaks using “TIF” or “Riken” leak detectors.

Sites checked must include:

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

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

7.8.7 Monitoring Fumigant Concentration

Effective treatment is dependent on maintaining a satisfactory level of fumigant within the chamber during the fumigation. Fumigant concentration readings must be taken at the start and end of fumigation for all fumigation treatments

The fumigant concentration must not fall below 60% of the required concentration for the duration of the treatment. Where monitoring indicates that the required concentration will not be achieved, the Fumigator must vent off all fumigant, ensure gas freedom and then inspect the chamber for the cause.

Label information advises that produce must not be re-treated with methyl bromide. Where fumigation has failed, affected produce must be destroyed or sent to another market, and must not be certified under this procedure.

7.9 Completion of Fumigation

7.9.1 Venting

After two (2) hours of treatment the chamber must be ventilated by running the exhaust system to extract all of the remaining gas and ensure that the concentration of the fumigant is below 5ppm before produce is released from the chamber.

Fumigant concentrations should be checked 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 the fumigant in the chamber must be below the Exposure Standard of 5ppm or less before the product can be released. If the concentration is greater than 5ppm 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.

7.9.2 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.

7.9.3 Aeration of Produce

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

7.9.4 Identification and Control of Treated and Untreated Produce

All produce that has been successfully treated with methyl bromide must be stored under secure conditions and segregated from any untreated product until dispatched from the facility.

Procedures must be in place to prevent mixing of treated and untreated produce at the facility.

Methods of identifying the status of treated and untreated produce after fumigation include:

- locating untreated produce in a clearly identified and separate area to treated produce and maintaining separation until dispatch; or
- marking each package of treated produce in a manner that clearly identifies the produce as conforming to the requirements specified under this procedure (refer 7.12.1).
- Other methods may be used provided treated and untreated produce are clearly identified and segregated.

7.9.5 Chamber Traceability

Businesses must uniquely number each fumigation chamber. The chamber number must be included on PHAC or corresponding attachment for ease of recall in the event of a detection.

7.10 Treatment Records

The business must record each treatment using a Fumigation Treatment Record (Attachment 3) or similar record which captures the same information.

Strip charts, continuous data log sheets or manual data log sheets must be maintained with the Fumigation Treatment Record to which they relate.

For electronic mini data loggers, ambient air temperature records may be downloaded onto a personal computer at completion of the treatment period. At conclusion of the treatment, the Fumigator must maintain the record in a computer database or obtain printed data log sheets of the treatment temperatures for the treatment period.

Treatment temperature records must identify:

- the treatment chamber;
- the date of fumigation;
- the packer's identification;
- the type of produce treated;
- the quantity of produce treated;
- the date and time of temperature sampling;
- all pulp temperatures measurements taken prior to fumigation (to a resolution of not more than 0.1 °C) (7.6.3)
- ambient air temperature taken every 30min during the fumigation (7.5)
- the fumigation dosage rate;
- the total quantity in grams of fumigant released in the fumigation;
- the time vaporisation is completed;
- initial point reading/s concentration, time and % of original dosage;
- end point reading/s concentration, time and % of original dosage;
- the completion time of the fumigation (the time venting commenced);
- licence number, name and signature.

The Fumigator must date and sign all manual temperature records at the conclusion of the treatment as verification of the accuracy of the record.

Any alterations to printed temperature or time schedules must be noted on the relevant treatment temperature record with an explanation for the alterations and the date and initials of the Fumigator.

7.11 Post Treatment Security

Treated produce may be allowed to air adequately prior to securing the produce against reinfestation (refer 7.9.3). Treated produce must be held for the minimum practical period after fumigation and airing before it must be secured against reinfestation.

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

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

- (a) unvented packages;
- (b) packages with 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 1.6mm;
- (d) shrink wrapped and sealed as a palletised unit; or
- (e) fully enclosed or screened buildings, cold rooms, vehicles or other facilities free from gaps or other entry points greater than 1.6mm.

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

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

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

7.12 Dispatch

7.12.1 Package Identification

Prior to the issuing an Assurance Certificate under this procedure, the Authorised Dispatcher must ensure that each package of certified produce is marked in indelible, visible and legible characters of at least 5mm, with:

- the Interstate Produce number of the business that operates the approved facility in which the produce was treated;
- the words "MEETS ICA 04"; and
- the date (or date code) on which the fruit/produce was treated.

Packages may be marked prior to fumigation; however, any packages containing produce that has not been treated in accordance with the requirements of this procedure must not leave the fumigation facility if marked as stated above.

For entry into Tasmania the acceptance of one label which can be affixed to the outer surface of a secure pallet unit may be available in lieu of the individual package markings. This label must include:

- the Interstate Product number of the business that operates the approved facility in which the product was treated;
- the words "MEETS ICA 04"; and
- the date (or date code) on which the product was treated.

The secure palletised unit must be shrink wrapped and have the top layer secured by applying a row of tape over the shrink wrap. Applied to the tape in waterproof ink shall be the signature of the Authorised Signatory and the number of the Plant Health Assurance Certificate covering the consignment and the date of issue of the consignment.

Note: If the external label was to be lost in transport, the entire pallet would be deemed not treated and may be either re-exported or destroyed.

7.12.2 Assurance Certificates

The Authorised Dispatcher must ensure an Assurance Certificate, in the form of a Plant Health Assurance Certificate (Attachment 1) is completed and signed by an Authorised Signatory of the business prior to dispatch of the consignment from the facility to a market requiring certification of fumigation.

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

PHACs must be completed, issued and distributed in accordance with the Standard Operating Procedure - Completion of Plant Health Assurance Certificates.

The PHAC must clearly indicate the chamber room number for each lot in the consignment.

In the addition certification/code section of the PHAC the following needs to be included:

- the total load of produce being treated in the chamber (including anything else in the chamber contributing to the total load) must be specified in cubic metres on the plant health certification, and
- “Chamber Room # XX”, where XX references the unique chamber room number assigned to that specific chamber.

Where the consignment has been fumigated in multiple chamber rooms, a chamber room number must be written next to each lot certified on the PHAC or corresponding Attachment.

Where the same chamber room has been used for multiple fumigation treatments on the same day, the chamber room number and time of fumigation must be written on the PHAC or corresponding Attachment for each lot.

7.12.3 Assurance Certificate Distribution

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

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

8 Accreditation

In order to become accredited, *the Application for Accreditation* must be signed and returned. The application form includes the terms and conditions applying to this agreement.

8.1 Application for Accreditation

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

8.1.1 Required application documents

A business may apply for accreditation by lodging a completed application package which must include the following documents:

- a fully completed Application for Accreditation form; and
- proof of business registration; and
- a fully completed Methyl Bromide Fumigation Health and Safety Checklist including any required supporting documentation.

Failure to provide any of the above documentation may result in delays to your application for accreditation.

8.2 Audit process

8.2.1 Initial audit

Prior to accrediting a business, an Authorised Inspector must conduct an initial audit of the business to verify the system is implemented and capable of operating in accordance with the requirements of this ICA procedure, and the system is effective in ensuring compliance with the specified requirements of the arrangement.

On completion of a successful initial audit, applicants will be granted provisional accreditation and issued a Certificate of Accreditation.

8.2.2 Compliance Audits

Compliance Audits are conducted to verify that the ICA system continues to operate in accordance with the requirements of this procedure. Compliance audits are, wherever practical, conducted when the system is operating.

A compliance audit is conducted:

- within four (4) weeks of the initial audit and accreditation or issue of the first PHAC; and
- within twelve (12) weeks of the business being re-accredited; and
- in the case of a business operating for more than six (6) months of a year, between six (6) and nine (9) months after accreditation or re-accreditation.

Upon completion of a successful initial compliance audit, accreditation is granted to cover the current season, up to a maximum of twelve (12) months.

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 certified produce, ICA system records or ICA system documentation.

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

8.2.3 Re-Accreditation

Accredited businesses are required to re-apply for accreditation each year the business seeks to operate under the arrangement. Businesses seeking re-accreditation must lodge a renewal application and a completed Methyl Bromide Fumigation Health and Safety Checklist with supporting documentation prior to accreditation lapsing, or if accreditation has lapsed, prior to commencing further certification of produce under the arrangement.

A compliance audit is conducted within twelve (12) weeks of the business applying for re-accreditation each year.

A compliance audit is conducted between six (6) and nine (9) months after the date of re-accreditation for an arrangement that operates for more than six (6) months of the year.

8.3 Certificate of Accreditation

An accredited business will receive a Certificate of Accreditation detailing the facility location, procedure, scope (type of produce covered) and period of accreditation. This Certificate of Accreditation will also detail which interstate markets the business is permitted to send to.

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

A business may not commence or continue certification of produce under this arrangement unless it is in possession of a valid and current Certificate of Accreditation for the procedure and produce type covered by the Assurance Certificate.

8.4 Non-conformances and Sanctions

8.4.1 Non-conformances

Audits are regularly undertaken to evaluate the effectiveness of implementation 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 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.

8.4.2 Incident Reports

Incident Reports may be raised by 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 findings reported back to the originator.

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

8.4.3 Suspension and Cancellation

Agriculture Victoria may suspend or cancel an accreditation when an accredited business is found, for example, to have:

- obtained accreditation through the provision of false or misleading information;
- not paid fees owing to Agriculture Victoria;
- contravened a requirement that compromises the integrity of the arrangement; and
- not rectified a non-conformance.

Any action taken by Agriculture Victoria to suspend or cancel an accreditation must be provided in writing to the business. This must also provide guidance on the lodgement of a written appeal requesting that the decision be reviewed.

8.4.4 Prosecution

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

8.5 Charging Policy

The business will be charged for all audit and investigation activities and an annual accreditation fee.

A fee will be charged for all scheduled audits conducted. Unannounced audits will not be charged. Agriculture Victoria can be contacted for a schedule of fees.

9 Records and Document Control

9.1 ICA System Records

The business must maintain the following records:

- Pre-treatment Fruit Fly Inspection Record (refer 7.1.3);
- Fumigation Dosage Chart for each chamber (refer 7.2.1 – Attachment 2);
- Gas Retention Test Certificate for each chamber (refer 7.3.1 – Attachment 4);
- Thermometer calibration records (refer 7.5.4);
- Ambient Air Treatment Temperature Records (refer 7.10);
- Sensor Placement Plan (refer 7.5.2 – Attachment 5);
- Sensor Calibration Test Record (refer 7.5.4 - Attachment 6)
- Fumigation Treatment Record (Attachment 3); and
- Pre-fumigation Inspection Record (refer 7.1.4).
- A copy of each Plant Health Assurance Certificate issued by the business.

ICA system records must be retained for a period of at least twenty-four (24) 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 Authorised Inspector.

9.2 ICA System Documentation

The business must maintain the following documentation:

- a copy of the business's current endorsed Application for Accreditation;
- a copy of the current endorsed Authorised Signatory forms;
- a current copy of this Operational Procedure; and
- a current Certificate of Accreditation.

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

10 Attachments

Attachment 1	Plant Health Assurance Certificate (PSE-030)
Attachment 2	Fumigation Dosage Chart (PSF-093)
Attachment 3	Fumigation Treatment Record (PSF-092)
Attachment 4	Gas Retention Test Certificate (PSF-094)
Attachment 5	Sensor Placement Plan (PSF-100)

Attachment 6 Sensor Calibration Test Record (PSF-453)

Attachment 7 QFF information sheet (PSF-354)

Plant Health Assurance Certificate

Certificate number
XXXXXXX

Consignment details (please print)

Consignor
Name ABC PTY LTD
Address STORE 21, STREET ROAD, MELBOURNE, VIC 3000

Consignee
Name TOMATO PRODUCE
Address 221 PRODUCE ROAD, HOBART, TAS

Reconsigned to (splitting consignments or reconsigning whole consignments)
Name
Address

Certificate details (please print)

IP Number	Facility number	Procedure
V9999	01	ICA-04

Accredited business that prepared the produce
Name ABC PTY LTD
Address STORE 21, STREET ROAD, MELBOURNE, VIC 3000

Grower or Packer
Name ABC PTY LTD
Address STORE 21, STREET ROAD, MELBOURNE, VIC 3000

Other facilities supplying produce

Brand name OR identifying marks (as marked on packages)	Date OR date code (as marked on packages)
ABC PRODUCE	12/06/2021

Number of packages	Type of packages (e.g. trays, cartons)	Type of produce	Authorisation for split consignment
20	Trays	Tomato	

EXAMPLE ONLY

Treatment details

Treatment date	Treatment	Chemical (active ingredient)	Concentration / duration and temperature
12/09/2021	Fumigation	Methyl Bromide	

Additional certification / Codes		
Chamber Room #3	Total load 'xx' m³	
<p>Declaration: I, an Authorised Signatory of the accredited business that prepared the plants, plant products, used equipment, used packages or earth materials described above, hereby declare that the plants, plant products, used equipment, used packages or earth materials have been prepared in the business' approved facility in accordance with the business' Certification Assurance arrangement and that the details shown above are true and correct in every particular. I acknowledge that it is an offence under the <i>Plant Biosecurity Act 2010</i> to issue assurance certificates without being accredited and/or to make false statements in certificates and declarations.</p>		
Authorised Signatory (print name) A. Signature	Signature A. Signature	Date ...15.... / ...06... / ..2021..

FUMIGATION DOSAGE CHART

Business Name: _____

Facility Address: _____

Interstate Produce No.: V _____

Chamber Identification: _____

Total Chamber Volume: _____ m³

DOSAGE CHART

Concentration (g/m ³)	Quantity of Fumigant Grams (g)
32	
40	
48	
56	

Prepared by: _____ / /
Printed Name Signature Date

GAS RETENTION TEST CERTIFICATE

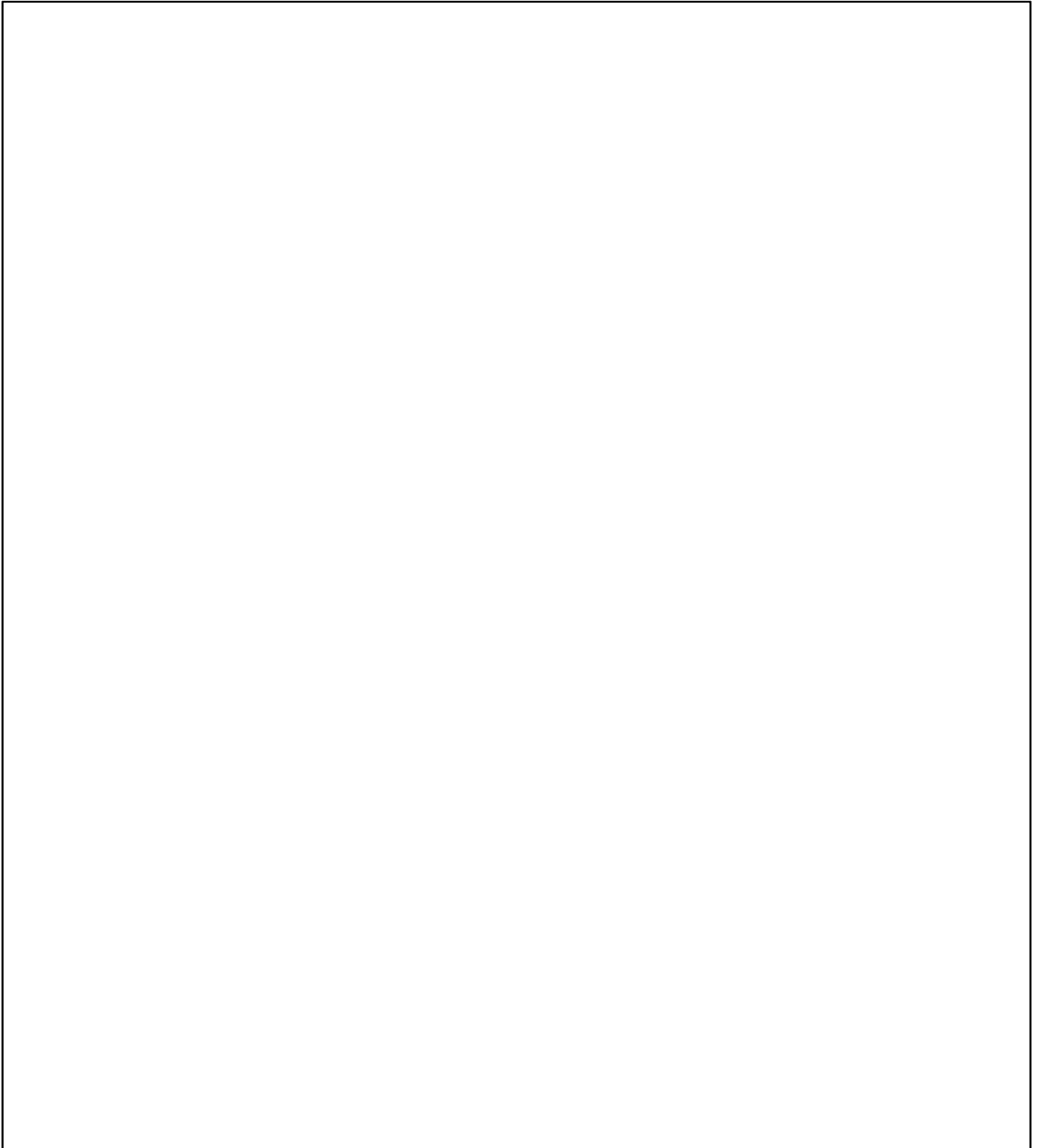
Owner of Fumigation Facility:						Interstate Produce No.:	V	
Facility Address:						Chamber Identification:	m ³	
						Date of Test:	/ /	
Chamber Dimensions (internal):		Length	m	Width	m	Height	m	
Fumigators Printed Name:						Chamber Volume:	m ³	
Fumigators DHS License No:			Expiry Date			/ /	External Ducting (if applicable)	m ³
						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 Agriculture Victoria's Operational Procedure Fumigation with Methyl Bromide [ICA-04] and has been shown to achieve at least 50% retention of methyl bromide gas after a two hour fumigation period.

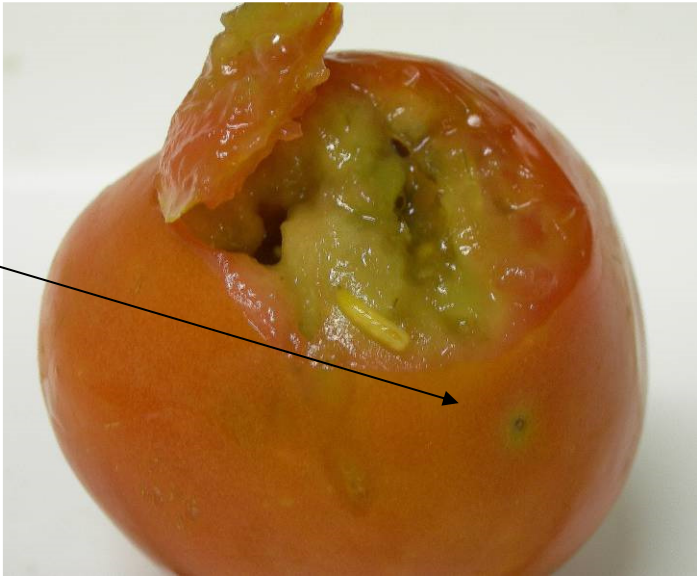
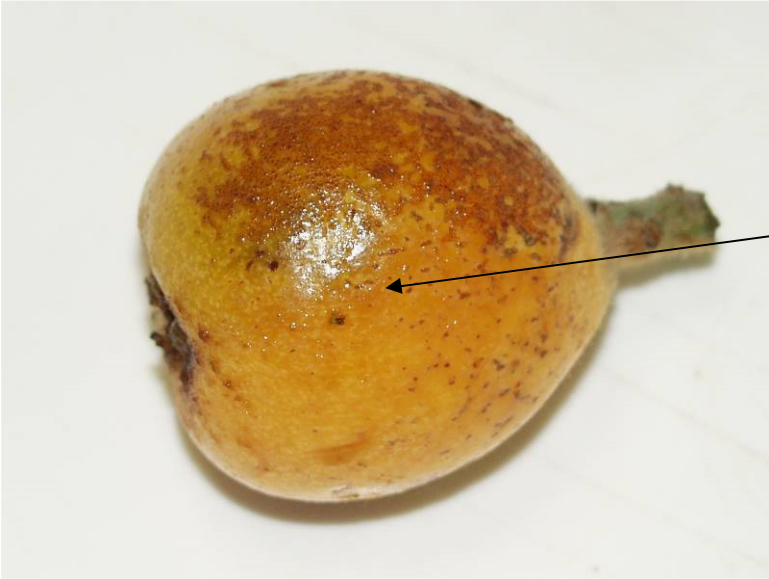
Fumigator's Name	Signature	/ / Date
Inspector's Name	Signature	/ / Date

Sensor Placement Plan

The Sensor Placement Plan should comprise a diagram of the treatment vessel/room/area and include the location and identification of each temperature sensor.



OFFICIAL
QUEENSLAND FRUIT FLY (QFF) LARVAE AND STING MARKS



STING MARKS



LARVAE