Department of
Primary Industries and
Regional Development

GOVERNMENT OF
WESTERN AUSTRALIA

Interstate Certification Assurance

04 Fumigation with Methyl Bromide

Version 3.2 – November 2018

Revision Register

Issue Number	Date of Issue	Amendments
1.0	22-09-04	New Issue
1.1	03-08-05	APVMA Permit
2.0	06-12-06	7.11.1
2.1	24-02-09	7.11.1 – Removal of taping the top layer option 7.8.4 – Assurance Certificate Distribution
3.0	23-07-15	All pages. Section 6. Addition of Non-conformance and Sanctions Policy
3.1	28-03-18	6. Requirement. Revised treatment schedule for TAS and SA
3.2	12-11-18	6. Requirement. Revised treatment schedule

Important disclaimer

The Chief Executive Officer of the Department of Primary Industries and Regional Development and the State of Western Australia accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.

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 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 Interstate Certification Assurance arrangement in Western Australia.

This procedure covers the requirements for fruit fly and other plant pests and is applicable to-

- Businesses operating inside areas where the requirements specified in 6. Requirements are a specified condition of entry of and interstate quarantine authority.

This procedure does not abrogate or override the responsibility of licensed fumigators to comply with the legislative requirements as prescribed in the *Health (Pesticides) Regulations 1956* and the *Occupational Safety and Health Act 1984*.

Certification of methyl bromide fumigation under this Operational Procedure may not be an accepted quarantine entry condition for all produce to all intrastate or 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 and interstate quarantine requirements can be obtained from Quarantine WA.

3. REFERENCES

WI-QA015	*Plant Health Assurance Certificate Completion*
	Health (Pesticides) Regulations 1956
	Occupational Safety and Health Act 1984.

4. DEFINITIONS

Accredit	means to accredit persons to issue Assurance Certificates under the *Biosecurity and Agriculture Management Act 2007*.

Application for Accreditation	means an Application for Accreditation of a Business for an Interstate Certification Assurance (ICA) arrangement.
APVMA	Agricultural and Veterinary Medicines Authority
Assurance Certificate	means a Plant Health Interstate Assurance Certificate
Authorised Signatory	means an officer of an ICA accredited Business whose name and specimen signature is provided as an authorised signatory with the Business's Application for Accreditation.
Business	means the legal entity responsible for the operation of the fumigation facility and ICA arrangement detailed on the Business's Application for Accreditation.
Certification Assurance	means a voluntary arrangement between the Department of Primary Industries and Regional Development Western Australia and a Business that demonstrates effective in-house quality management and provides assurance through documented procedures and records that produce meets specified requirements.
Certified/certification	means covered by a valid Plant Health Interstate Assurance Certificate.
Chamber	means a permanent or tarped enclosure made from gas-proof material specifically designed for the purpose of fumigation.
Colorimetric tubes	Draeger/Kitagawa stain or detector tubes for measuring fumigant concentrations.
Facility	means the location of the fumigation chamber or chambers covered by the Interstate Certification Assurance arrangement.
Fumigant	means 1000g/kg methyl bromide (CH3Br).
Fumigation	means the treatment of produce with a fumigant.
Fumigator	means a person licensed to undertake fumigation pursuant to the Health (Pesticides) Regulations 1956
Fruit Fly	means Queensland and Mediterranean Fruit Fly
ICA	means Interstate Certification Assurance.
Inspector	means an inspector appointed under the Biosecurity and Agriculture Management Act 2007.
Interstate Certification Assurance	means a system of Certification Assurance developed to meet the requirements of State and Territory governments for the certification of produce for Interstate and Intrastate quarantine purposes.
Load	means the total number of packages covered by one fumigation treatment.
Lot	means a discrete number of packages of one produce type (eg mangoes or rockmelons) from one source (eg one packer or one consignee)

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. Staff responsible for these process control activities are called "Nominated Persons"

The **Certification Controller** is responsible for -

- representing the Business during audits and other matters relevant to ICA accreditation;
- ensuring the Business has current accreditation for an ICA arrangement under this Operational Procedure;
- training staff in their duties and responsibilities under this Operational Procedure;
- ensuring the Business and its staff comply with their responsibilities and duties under this Operational Procedure;
- ensuring that all fumigation of produce certified under the Business's ICA arrangement is carried out in accordance with this Operational Procedure.
- ensuring all fumigation's are performed by a licensed fumigator (refer 6);
- ensuring the fumigation facility has been approved or deemed an as of right use by the relevant Local Authority (as applicable) (refer 7.2);
- ensuring a Fumigation Dosage Chart is maintained for each fumigation chamber operated at the facility (refer 7.2.1)
- 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 six months (refer 7.3.1); or first fumigation on each tarp used per outbreak;
- ensuring thermometers used for measuring produce temperatures are identified and calibrated at least every 6 months (refer 7.5.2);
- if applicable, ensuring weighing scales are calibrated at least every 6 months (refer 7.7.3).

The **Fumigator** is responsible for –

- maintaining the fumigation chamber and fumigation equipment (refer 7.2.2);
- determining the chamber volume (refer 7.4);
- maintaining thermometer identification and calibration records (refer 7.5.2);
- determining the minimum produce temperature for each fumigation (refer 7.5.3);
- determining the rate and dosage of fumigant required for each fumigation (refer 7.7.1);
- if applicable, maintaining weighing scale calibration records (refer 7.7.3).
- maintaining fumigation treatment records (refer 7.9).

The **Authorised Dispatcher** is responsible for –

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

The **Authorised Signatories** are responsible for –

- ensuring prior to signing and issuing an Assurance Certificate, that produce covered by the certificate has been prepared in accordance with the Business's ICA arrangement, and the details on the certificate are true and correct in every particular (refer 7.11.2).

6. REQUIREMENT

Fumigation with methyl bromide in an approved fumigation chamber for two hours in accordance with the below –

1. **For the treatment against Queensland fruit fly**

Flesh Temperature (°C)	Methyl Bromide (g/m3)
21 – 31.9	32
17 – 20.9	40

Fruit must be fumigated at flesh temperatures above 17 ºC and below 32 ºC.

or

2. **For all other fruit flies and insect pests** where fumigation is specified condition of entry of and interstate quarantine authority

Flesh / Chamber Temperature (°C)	Methyl Bromide (g/m3)
21 – 31.9	32
16 – 20.9	40
11 – 15.9	48
10 – 10.9	56

Fruit must be fumigated at flesh temperatures above 10°C and below 32°C. DO NOT apply when flesh temperatures exceed 31.9°C

Loading rates within the chamber must be –

(a) **for fruits and vegetables** - not less than 30% nor more than 50% of the volume of the chamber when empty;
(b) **for all other plants and plant products** – not more than 50% of the volume of the chamber when empty

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.

A licensed fumigator must carry out all methyl bromide fumigations.

The Department of Primary Industries and Regional Development Western Australia 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.

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

The Business must use products registered under the Agvet Code in accordance with the instructions included on the product's approved label or an applicable NRA permit, and follow any first aid, safety, protection, storage and disposal directions on the product label or permit. Treatment facilities must comply with the requirements of the local government, environmental and workplace health and safety authorities.

Following the required treatments in this procedure does not absolve the business from the responsibility of ensuring that treated produce does not contain pesticide residue above the Maximum Residue Level (MRL).

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.

7. PROCEDURE

7.1 Accreditation

7.1.1 Application for Accreditation

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

7.1.2 Audit Process

Initial Audit

Prior to accrediting a Business, an Inspector carries out an initial audit of the Business to verify the ICA system is implemented and capable of operating in accordance with the requirements of the Operational Procedure, and the system is effective in ensuring compliance with the specified requirements of the ICA arrangement.

On completion of a successful initial audit, applicants will be granted provisional accreditation and posted a Certificate of Accreditation (refer 7.1.3 Certificate of Accreditation).

Compliance Audits

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

A compliance audit is conducted within four weeks of the initial audit and accreditation of the Business.

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

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

Random audits are conducted on a selected number of accredited Businesses each year. Random audits may take the form of a full compliance audit, or audits of limited scope to sample treatment mixtures, certified produce, ICA system records or ICA system documentation.

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

Re-Accreditation

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

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

7.1.3 Certificate of Accreditation

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

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

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

7.2 Fumigation Facility Requirements

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 six months (refer 7.3 Gas Retention Testing).

7.2.1 Fumigation Dosage Chart

The Business shall maintain a Fumigation Dosage Chart (refer 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 Business's 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 (refer 7.4 Calculation of Fumigation Chamber Volume);
(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/m3 (refer 7.7.1 Calculation of Fumigant Dosage).
(e) 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 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.

7.3 Gas Retention Testing

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

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

Gas Retention certificates shall be issued following testing under the supervision of an Inspector 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 two 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 twenty minute monitoring where more than one monitoring point is in use (refer 7.6.4 Placement of Gas Sampling Lines).

(c) Where monitoring points are not equilibrated within +/- 5% of each other at the twenty 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 require to be retained at the final monitoring (after two hours). If the required final concentrations are 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. The Inspector supervising the test may require additional fumigation retention testing if this is considered necessary.

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

7.3.1 Gas Retention Test Certificate

The Gas Retention 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;

- the fumigation rate (g/m³);
- 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 20minutes after vaporisation is complete;
- the readings for the 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;
- the Department of Health Western Australia licence number, printed name and signature of the licensed fumigator who performed the test (s);
- the printed name and signature of the Inspector that supervised the test (s).

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

7.4 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 (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 in cubic metres (m³) –

(chamber height (m) x chamber length (m) x chamber width)) +

external ducting volume (m³) = total chamber volume (m³)

For example –

Chamber Height	=	2.5 metres
Chamber Length	=	3 metres
Chamber Width	=	3 metres
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 shall be prominently displayed in the vicinity of the chamber (refer 7.2.1 Fumigation Dosage Chart).

7.5 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.

7.5.1 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 ºC or 0.2 ºC shall be used.

7.5.2 Calibration of Thermometers

Thermometers used for measuring produce temperatures shall have been calibrated within the previous six months and shall be accurate to within +/- 0.5 ºC.

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 shall maintain results of thermometer calibration checks.

Thermometer calibration records shall 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 ºC;
- the name of the officer or recognised testing authority responsible for conducting the calibration checks.

Ice - Point Check Calibration

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

If the indicated temperature is outside the range 0 º +/- 0.5 ºC 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.

7.5.3 Produce Temperature Measurement

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

Live Plants and Plant Products

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

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

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

7.5.4 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 (refer Attachment 3).

7.6 Preparing, Loading and Sealing the Chamber

7.6.1 Preparing the Chamber

The Fumigator shall check the chamber for damage and possible leak sites prior to the chamber being loaded.

Any damage (eg damaged door seals or holes or tears in chamber walls) shall be made good prior to loading.

The Fumigator shall check chamber circulation and ventilation systems are operating correctly and ensure all vents are closed and sealed prior to the chamber being loaded.

7.6.2 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 5 cm 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.

The Fumigator shall calculate loading rates within the chamber to ensure specified loading rates are not exceeded for the commodity or commodities being fumigated.

Chamber loadings shall be recorded as a percentage of the chamber volume for each fumigation (refer 7.9 Treatment Records).

Loading rates within the chamber must be –

(a) **for fruit and vegetables** – not less than 30% nor more than 50% of the volume of the chamber when empty.

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

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.

7.6.3 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 (refer 7.7.5 Mixing of Fumigant).

7.6.4 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;
(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.

7.6.5 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 pints and checking all possible leak sites such as doors, gaskets and joints.

7.7 Fumigation

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

7.7.1 Calculation of Fumigant Dosage

The fumigant dosage rate is specified in 6. Requirement. The dosage rate varies for change in temperature from a minimum of 10 ºC to 31.9 ºC.

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 ºC or is 31.9 ºC or above.

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

Chamber volume x dosage rate = g methyl bromide

For example -

$22.5m^3 \times 32g/m^3 = 720$ g methyl bromide

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

7.7.2 Application of Fumigant

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.

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.

7.7.3 Calibration of Weighing Scales

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

The business shall maintain results of weighing scale calibration checks.

Weighing scale calibration records shall record the following information:

- the date of calibration;
- the identification of the scales calibrated;
- confirmation that the equipment is accurate to within ± 1 percent of the minimum dosage (g) of methyl bromide used for the chamber; and
- the officer responsible for conducting the calibration check.

7.7.4 Vaporiser/Volatiliser

Although methyl bromide has a boiling point of 3.6 ºC and will vaporise when released at temperatures above 4.0 ºC, 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.

7.7.5 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 conditions 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 monitoring gas concentrations at all monitoring points 20 minutes after the introduction of the gas (refer 7.7.7 Monitoring Fumigant Concentration). 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.

7.7.6 Testing for Leaks

Once the fumigation has commenced, the Fumigator shall test the chamber for leaks using TIF or Riken leak detectors. 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 cannot be repaired during the treatment, the fumigation must be aborted and the chamber repaired before further use.

7.7.7 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 preferred practice (refer 7.3 Gas Retention Testing).

Fumigators may elect to monitor gas concentration during fumigations. Where monitoring indicates that the required concentration will not be achieved the Fumigator shall vent of 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.

7.8 Completion of Fumigation

7.8.1 Venting

After two 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 chamber. 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 or 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.

7.8.2 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.

7.8.3 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 Standards of 5 ppm of methyl bromide and any applicable maximum residue limits are not exceeded.

7.8.4 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 –

(c) locating untreated produce in a clearly identified and separate area to treated produce and maintaining separation until dispatch; or
(d) marking each package of treated produce in a manner that clearly identifies the produce as conforming to the requirements specified under this Operational Procedure (refer 7.11.1 Package Identification).

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

7.9 Treatment Records

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

Treatment records must identify –

- the date of fumigation;
- the packer's identification;
- the type of produce treated;
- the quantity of produce treated;
- all temperatures measurements taken prior to fumigation;
- the fumigation dosage rate;
- the total quantity in grams of fumigant released in the fumigation;
- the commencement time of the fumigation (the time vaporisation is completed);
- the completion time of the fumigation (the time venting commenced);
- the Fumigator's WA Department of Health licences number, name and signature.

7.10 Post Treatment Security for Tasmania

The following requirements apply to **fruit** treated for **fruit fly** or **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 that is stored outside the treatment facility after treatment and prior to dispatch must be held under secure conditions.

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

Certified fruit must be transported from the facility in secure conditions that 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 1.6mm;
(d) shrink-wrapped and sealed as a palletised unit;
(e) fully enclosed or screened buildings, coldrooms, vehicles or other facilities free from gaps or other entry points greater than 1.6 mm.

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

Where consignments are transported to Tasmania as full container lots, the seal number must be included in the in the Brand Name or Identifying Marks section of the Assurance Certificate covering the consignment (refer Attachment 1).

Where consignments are transported in vented packages that are sealed as a palletised unit in accordance with (d) above, the Business must be 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 Interstate Assurance Certificate covering the consignment and the date.

7.11 Dispatch

7.11.1 Package Identification

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

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

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

7.11.2 Assurance Certificates

The Authorised Dispatcher shall ensure an Interstate Assurance Certificate 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 with methyl bromide.

Interstate Assurance Certificates shall be in the form of a Plant Health Interstate Assurance Certificate. A completed example is shown as Attachment 1.

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

Interstate Assurance Certificates shall be completed, issued to cover each consignment (ie. a discrete quantity of product transported to a single consignee at one time) to avoid splitting of consignments.

Interstate Assurance Certificates shall be completed, issued and distributed in accordance with the Work Instruction Guidelines for Completion of Plant Health Assurance Certificates (WI-QA015).

7.11.3 Interstate Assurance Certificate Distribution

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

The **duplicate** (blue copy) is to be sent to the below address not less than monthly.

- Quality Assurance Officer
  Quarantine WA
  Locked Bag 69
  WELSHPOOL DC, WA 6986

The **triplicate** (white copy) must be retained by the QA accredited Business that issued the certificate.

7.12 ICA System Records

The Business shall maintain the following records –

(a) Fumigation Dosage Chart for each chamber (refer 7.2.1);
(b) Gas Retention Test Certificate for each chamber (refer 7.3.1);
(c) If applicable, thermometer calibration records (refer 7.5.2);
(d) If applicable, scale calibration records (refer 7.7.3)
(e) Fumigation Treatment Record (refer 7.9);
(f) A copy of each Plant Health Interstate Assurance Certificate issued by the Business (refer 7.11.3).

ICA system records shall be retained for a period of at least 12 months from completion, or until the next compliance audit of the ICA arrangement, whichever is the later.

An accredited Business must hold a minimum of 12 months ICA system records at the time of any compliance audit. If the compliance audit is conducted more than 12 months from the last compliance audit, the business must maintain all records completed since the previous compliance audit.

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

7.13 ICA System Documentation

The Business shall maintain the following documentation –

(g) a copy of the Business's current Application for Accreditation;
(h) a current copy of this Operational Procedure;
(i) a current Certificate of Accreditation for an Interstate Certification Assurance Arrangement.

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

8. NON-CONFORMANCES AND SANCTIONS

8.1.1 Non-conformances

Audits are regularly undertaken to evaluate the effectiveness of implementation of ICA 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 shall 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.

8.1.2 Incident Reports

Incident Reports may be raised by interstate quarantine authorities to report the detection of a non-conformance in produce certified under this ICA arrangement. An investigation into the incident shall 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.

8.1.3 Suspension and Cancellation

DPIRD 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 the DPIRD;
- contravened an accreditation requirement that compromises the integrity of the arrangement; and/or
- not rectified a non-conformance.

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

9. ATTACHMENTS

Attachment 1	Plant Health Interstate Assurance Certificate (completed example)
Attachment 2	Fumigation Dosage Chart (blank)
Attachment 3	Fumigation Treatment Record (blank)
Attachment 4	Gas Retention Test Certificate (blank).
Attachment 5	Thermometer Calibration Record (blank)

Plant Health Assurance Certificate (EXAMPLE)

Department of Agriculture and Food
GOVERNMENT OF WESTERN AUSTRALIA

ORIGINAL (Yellow) – Consignment Copy
DUPLICATE (Blue) – Quarantine WA Copy
TRIPLICATE (White) – Business (Book) Copy

Certificate Number: XXXXX

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

Biosecurity and Agriculture Management (Quality Assurance and Accreditation) Regulations 2013

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

Consignment Details

Consignor

Name ABC Pty Ltd
Address Block Road
Perth WA 6000

Consignee

Name Fresh Agents
Address Somewhere Road
Somewhere SA

Re-consigned To

(Splitting consignments or re-consigning whole consignments).

Name
Address

Certification Details

IP Number	Facility Number	Procedure
W 9999	01	ICA-04

Accredited Business That Prepared The Produce

Name Mr Fumigator
Address Fume Lane
Perth WA

Grower or Packer

Name ABC Pty Ltd
Address Block Road
Perth WA 6000

Other Facilities Supplying Produce

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 Split Consignment
144	Cartons	Apples	ABC Apples	230715	
					Affix Authorisation Stamp to Split / Re-consignee here

Treatment Details

Treatment	Chemical (Active Ingredient)	Treatment Date	Concentration / Duration and Temperature
Fumigation	Methyl Bromide 100%	23/07/2015	32g/m³ @ 24°C for 2hrs

Additional Certification / Codes

Declaration

I, an authorised Signatory of the accredited business that prepared the plants or plant produce described above, hereby declare that the plants or plant produce have been prepared in the business's approved facilities in accordance with the business's 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 *Biosecurity and Agriculture Management (Quality Assurance and Accreditation) Regulations 2013* to issue assurance certificates without being accredited and/ or making false statements in certificates and declarations.

Authorised Signatory's Name (Please Print)	Signature	Date
Joe Bloggs	J.A.Bloggs	23/07/2015

QWA – BAM209 0112

Attachment 1

FUMIGATION DOSAGE CHART

Chamber Identification: ……..……..

Total Chamber Volume: ……

Business Name: ……

IP Number: **W** ……..

Facility Address: ……..

……Post Code…..……...

DOSAGE CHART

CONCENTRATION (g/m3)	**CALCULATED QUANTITY OF METHYL BROMIDE (gms)** (required to achieve indicated concentration)
32	
40	
48	
56	

This chart is to be located in close proximity to each Fumigation Chamber

Prepared by: …….…….. (Fumigators Name).

Signature: ……. Date: ……

Attachment 2

FUMIGATION TREATMENT RECORD

Owner of Fumigation Facility					Interstate Produce Number:		**W**
Date of Fumigation	/ /	Chamber ID:			Chamber Volume:		m^3
Fumigator's Name					WADH Licence No:		
Temperature Readings (ºC)					Fumigation Rate:		
Temperature Range (ºC)	Maximum Temperature ºC		Minimum Temperature ºC		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:							

Attachment 3

GAS RETENTION TEST CERTIFICATE

Operator of Fumigation Chamber				Interstate Produce No:	**W**
Facility Address:				Chamber Identification:	
				Date of Test:	
Chamber Dimensions (internal):	Length m	Width m	Height m	Chamber Volume:	m³
Fumigator's Printed Name:				External Ducting (if applicable)	m³
Fumigator's WADH Licence No:		Expiry Date:	/ /	Total Chamber Volume:	m³

Test Number	Fumigation Rate (g/m³)	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 Department of Primary Industries and Regional Development Western Australia Operational Procedure ***Fumigation with Methyl Bromide*** **(ICA-04)** and has been shown to achieve at least 50% retention of methyl bromide gas after 2 hours fumigation period

…… ……. / /
Fumigator's Name Signature Date

…… ……. / /
Inspector's Name Signature Date

Attachment 4

Thermometer Calibration

Name of Fumigation Company or Fumigator's Business Name	Date	Thermometer Number	Temperature Reading	Variation of Temperature from Ice Point - 0°c	Name of Testing Officer (please print)	Signature of Testing Officer
	… / … / …					
	… / … / …					
	… / … / …					
	… / … / …					
	… / … / …					
	… / … / …					
	… / … / …					
	… / … / …					
	… / … / …					
	… / … / …					

Attachment 5