



INSPECTION OF LIVE PLANTS FOR MELON THRIPS

REVISION REGISTER

Revision No.	Date of Issue	Amendment Details
0	07/01/13	All pages

Authorised:

Plant Biosecurity & Product Integrity

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Issue: SECOND Rev: 0
Date: 07/01/13



INSPECTION OF LIVE PLANTS FOR MELON THRIPS

DOCUMENT INFORMATION

Document location and file name	\\PIBSRV006\CorpData\Biosecurity\PlantBiosec\Market_Access_Sub-Program\Certification and Accreditation Services\ICA\Operations\Work Instructions\Current\Word Version\ICA-WI-04-20_07-01-13.doc
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INSPECTION OF LIVE PLANTS FOR MELON THRIPS

TABLE OF CONTENTS

1. PURPOSE4

2. SCOPE4

3. REFERENCES4

4. DEFINITIONS4

5. GENERAL.....6

6. ACTIONS6

 6.1 Sampling Live Plants for Inspection6

 6.1.1 Inspection Type6

 6.1.2 Inspection Rate.....6

 6.1.3 Factors to be Considered Prior to Taking a Sample for Inspection.....6

 6.1.4 Minimum Sample Size6

 6.2 Sample Selection for an In-Line Inspection.....7

 6.3 Sample Selection for an End-point Inspection8

 6.4 Examination of Live Plants11

 6.5 Suspect Melon Thrips Detection12

 6.6 Sampling Suspect Melon Thrips.....12

 6.6.1 Taking the Sample.....12

 6.7 Issuance of a Plant Health Assurance Certificate13

7. ATTACHMENTS13

INSPECTION OF LIVE PLANTS FOR MELON THRIPS

1. PURPOSE

The purpose of this work instruction is to provide guidelines for the inspection of live plants for melon thrips. This instruction does not encompass specific protocol inspections for other pests or disease that may be required for some States or Territories.

2. SCOPE

This work instruction covers the requirements for the inspection of live plants requiring certification for freedom from melon thrips and movement from Queensland to another State or Territory within Australia by an **Authorised Inspection Person**.

3. REFERENCES

- ICA-WI-02** *Guidelines for Completion of Plant Health Assurance Certificates*
- ICA-38** *Inspection of Fruits and Vegetables (Post Harvest), Live Plants, Cut Flowers and Foliage for Melon Thrips*

4. DEFINITIONS

- Authorised Inspection Person** means a person who has completed approved training in the detection and recognition of melon thrips and who is authorised to conduct inspections on behalf of the Business by having their name and signature on a register of Authorised Inspection Persons maintained by the Business.
- approved taxonomist** means a person who is approved by DAFF Queensland and is listed on the DAFF Queensland Register of Approved Taxonomists.
- Assurance Certificate** means a *Plant Health Assurance Certificate* [CAF-16].
- Authorised Signatory** means a person whose name and specimen signature is included as an Authorised Signatory on the business's application for accreditation.
- business** means a legal entity responsible for the operation of the facility and the ICA arrangement detailed in the Business' Application for Accreditation.
- certified/certification** means covered by a valid *Plant Health Assurance Certificate* [CAF-16].
- consignment** means a quantity of packed produce described on one Plant Health Assurance Certificate by a single consignee.
A consignment may contain a number of lots.
- DAFF Queensland** means the Department of Agriculture, Fisheries and Forestry Queensland.

INSPECTION OF LIVE PLANTS FOR MELON THRIPS

end-point inspection	means the process by which a representative sample is drawn and inspected from the finalised consignment prior to certification.
facility	means the location where plants are assembled, inspected, securely stored, certified and dispatched.
homogeneous	means produce that is all of the same or similar kind or nature.
growing unit	means a pot, cell, tube or a number of small plants in a cell tray or other unit for growing plants.
in-line inspection	means the process by which a representative sample of packed product is drawn from a lot and inspected during the processing and packing of the produce. In-line inspections are not available for live plants.
inspection	means the act of inspecting produce to determine if the entry conditions or melon thrips freedom requirements of the importing State or Territory have been met.
lot	means a quantity of homogeneous product assembled for inspection at one place at one time. A lot could consist of product from one or more growers/blocks/properties.
melon thrips	means all stages of <i>Thrips palmi</i> (Karny) including egg, nymph and adult.
MT	means melon thrips.
package	means the complete outer covering or container used to transport and market the produce.
packed product	means produce that has been packed into its final package. For live plants, final packaging may mean a plant(s) in a growing unit or a bare rooted plant.
produce	means living plants but excludes seeds, underground parts and dried or processed plant materials.
Plant Health Assurance Certificate	means a certificate issued by an Authorised Signatory under an ICA arrangement stating that the plant or other thing described on the certificate meets a specified treatment, condition, pest or area freedom or other requirement.
restricted area	means an area of a state or territory from which plants are required to be certified for property freedom for melon thrips.
thrips	means all stages of <i>Thrips</i> spp. including egg, nymph and adult.
unit (live plants)	means one plant in a growing unit or a number of small plants in a growing unit or a bare rooted plant.

5. GENERAL

This work instruction refers to key elements of the Interstate Certification Assurance Operational Procedure *Inspection of Fruits and Vegetables (Post Harvest), Live Plants, Cut Flowers and Foliage for Melon Thrips* [ICA-38] that require further explanation to a task or activity. Persons responsible must ensure they refer to the relevant sections of the Operational Procedure before applying any task in this Work Instruction.

6. ACTIONS

6.1 Sampling Live Plants for Inspection

6.1.1 Inspection Type

The **Authorised Inspection Person** shall inspect live plants by one of two types:

1. End-point inspection; or
2. In-line inspection.

6.1.2 Inspection Rate

The **Authorised Inspection Person** shall inspect live plants by end-point or in-line inspections at one of the following rates:

- 600 units; or
- 2% of the number of packages.

6.1.3 Factors to be Considered Prior to Taking a Sample for Inspection

An **Authorised Inspection Person** may be presented with a mixed consignment or lot from which they will be required to draw a sample and inspect.

Mixed consignments and lots present unique problems regarding homogeneity and require special consideration with regard to sampling.

The **Authorised Inspection Person** shall consider the following factors when making a decision on how to sample from a mixed consignment or lot:

- treatments (where known) that have been applied to control certain pests and disease;
- history of previous melon thrips detections (where known) associated with a particular production area, plant type or grower;
- the quantity of a particular plant within the lot or consignment; and
- the number of different growers/packers associated with the lot or consignment.

6.1.4 Minimum Sample Size

A minimum of three (3) packages will be drawn when undertaking an inspection using the 2% sampling rate.

INSPECTION OF LIVE PLANTS FOR MELON THRIPS

Where the **Authorised Inspection Person** identifies that the number of units in a consignment or lot is less than the required 600 units (i.e. pre-determined unit number inspection e.g. 600 units), the **Authorised Inspection Person** shall examine all units in the consignment.

6.2 Sample Selection for an In-Line Inspection

An In-line inspection shall involve the selection and inspection of live plants drawn from a lot and inspected during the processing and packing of the product.

The **Authorised Inspection Person** shall sample packed product at the predetermined inspection rate (refer [6.1.2 Inspection Rate](#)) from the packing line and move the packed product to the inspection area for examination (refer [6.4 Examination of Live Plants](#)).

The following are two examples of how to sample live plants during an In-line Inspection.

Example A – In-line 600 Unit Inspection

An Authorised Inspection Person is presented with 3000 cell trays of tomato seedlings of which three consignments consisting of 1000 trays each are to be consigned to Western Australia.

The Certification Controller of the packing shed advises the Authorised Inspection Person that the packing period to pack the cell trays into cartons will be 3 hours. The Authorised Inspection Person calculates the rate at which the samples are to be drawn to obtain a 600 unit sample as follows:

The Authorised Inspection Person calculates:

- 3 hour packing period for 3000 cell trays from one grower (one lot)*
- 600 units are to be drawn prior to packing over a 3 hour packing period = 100 units per ½ hour*
- one cell tray = one unit*

100 cell trays will need to be drawn every ½ hour from the processing line prior to packing the cell trays into cartons.

The Authorised Inspection Person examines 100% of each cell tray (unit) until the required 100 cell trays (units) have been reached for each interval. The Authorised Inspection Person shall not examine more than 100 trays (units) at each interval.

Note: The sampling rate selected has provided sufficient time to fully inspect the units as they are drawn during each period.

(Refer [Attachment 1](#) for the completed Melon Thrips Inspection Record for Example A)

Example B – In-line 2% Inspection

An Authorised Inspection Person is presented with 1200 cell trays of tomato seedlings of which three consignments consisting of 400 cell trays each are to be consigned to South Australia.

The Certification Controller of the packing shed advises the Authorised Inspection Person that the packing period to pack the cell trays into cartons will be 3 hours. The Authorised Inspection Person calculates the rate at which the samples are to be drawn from the processing line to obtain a 2% sample as follows:

The Authorised Inspection Person calculates:

- *3 hour packing period for 1200 cell trays from one grower (one lot)*
- *400 trays per hour packed*
- *1200 trays packed over a 3 hour packing period*

One (1) in fifty (50) or 8 cell trays per hour need to be drawn from the processing line prior to packing the trays into cartons.

24 trays inspected over 3 hour packing period

The Authorised Inspection Person examines 100% of each cell tray (unit) until the required 8 cell trays (units) have been reached for each interval. The Authorised Inspection Person shall not examine more than 8 trays at each interval.

Note: The sampling rate selected has provided sufficient time to fully inspect the units as they are drawn during each period.

(Refer [Attachment 2](#) for the completed Melon Thrips Inspection Record for Example B)

6.3 Sample Selection for an End-point Inspection

End-point inspections are only carried out on consignments that have been finalised.

The **Authorised Inspection Person** shall sample packages at the predetermined inspection rate (refer [6.1.2 Inspection Rate](#)) from the consignment and move the packages to the inspection facility ready for examination (refer [6.4 Examination of Live Plants](#)).

The following are two examples of how to sample live plants for an End-point Inspection.

Example C – End-point 600 Unit Inspection

An Authorised Inspection Person is presented with a mixed consignment of live plants to be consigned to a quarantine restricted market for melon thrips. The consignment consists of 344 cartons and comprises:

- 72 cartons of Gerbera sp. in pots from grower/packer A. Smith;*
- 56 cartons of Bougainvillea sp. in pots from grower/packer B. Brown;*
- 144 cartons of Heliconia sp. in pots and 72 cartons of Anthurium sp. in pots from grower/packer C. Blogs.*

The Authorised Inspection Person calculates that:

A. Smith's 72 cartons represent 21% of the consignment;

B Brown's 56 cartons represent 16% of the consignment;

C Blogs' 144 cartons of (Heliconia sp.) represents 42% and 72 cartons of (Anthurium sp.) represents 21% of the consignment respectively.

The Authorised Inspection Person determines that the proportion of live plants in pots to be examined from each grower will be based on the percentage of each growers live plants in the consignment.

The Authorised Inspection Person calculates the number of units to examine from each grower as follows:

The number of A. Smith's Gerbera sp. to examine is $600 \times 21\% = 126$ units

The number of B. Brown's Bougainvillea sp. to examine is $600 \times 16\% = 96$ units

The number of C Blogs' Heliconia sp to examine is $600 \times 42\% = 252$ units, and the number of Anthurium sp. to examine is $600 \times 21\% = 126$ units

The Authorised Inspection Person draws live plants at random from each grower until they have examined the required number of units.

(Refer [Attachment 3](#) for the completed Melon Thrips Inspection Record for Example C)

Example D – End Point 2% Inspection

An Authorised Inspection Person is presented with a mixed consignment of red and yellow Gerbera sp. (in pots) which are to be consigned to a quarantine restricted market for melon thrips. The consignment comprises:

Six (6) pallets of red Gerbera sp. and four (4) pallets of yellow Gerbera sp. from grower/packer J. Smith.

The consignment totals 120 cartons with each pallet comprising 12 cartons.

The Authorised Inspection Person calculates that there are:

- **72 cartons of red Gerbera sp. representing 60% of the consignment; and**
- **48 cartons of yellow Gerbera sp. representing 40% of the consignment.**

The Authorised Inspection Person determines that the proportion of packages to be sampled will be based on the percentage of red and yellow Gerbera sp. (in pots) in the consignment.

The Authorised Inspection Person calculates the number of red and yellow Gerbera sp. sample packages to take as follows:

- **2% × 72 packages = 2 packages (always round up to next whole number)**
- **2% × 48 packages = 1 packages (always round up to next whole number)**

The Authorised Inspection Person draws sample packages at random from the pallets to achieve 3 packages (2 red and 1 yellow Gerbera sp. [in pots] in packages).

The Authorised Inspection Person examines 100% of units within each sample package.

(Refer [Attachment 4](#) for the completed Melon Thrips Inspection Record for Example D)

6.4 Examination of Live Plants

An **Authorised Inspection Person** shall examine live plants after drawing the required number and depending on the inspection type and rate (refer [6.1.1 Inspection Type](#) and [6.1.2 Inspection Rate](#)).

Where a 2% rate is nominated by the Certification Controller, an **Authorised Inspection Person** shall examine 100% of the live plants contained in each sample package.

Where a 600 unit rate is nominated by the Certification Controller, an **Authorised Inspection Person** shall not examine more than 600 units.

All live plant examinations shall be carried out by an **Authorised Inspection Person**.

The **Authorised Inspection Person** shall:

1. move all live plants to the inspection area;
2. record information on the *Melon Thrips Inspection Record* in accordance with Section 7.6.1 of Interstate Certification Assurance Operational Procedure *Inspection of Fruits and Vegetables (Post Harvest), Live Plants, Cut Flowers and Foliage for Melon Thrips* [ICA-38].
3. place live plants on the inspection bench;
4. visually examine the required number of units (refer [6.1.2 Inspection Rate](#)) for melon thrips;

Live plants selected for inspection must be thoroughly inspected on both sides of the leaves, flowers and stems. Particular attention shall be paid to areas that may provide shelter to melon thrips such as the flowers and stem axils.

The **Authorised Inspection Person** will use, as necessary, a hand lens of at least X10 magnification or similar device to assist in the examination of live plants for the detection of melon thrips.

The **Authorised Inspection Person** where possible, shall shake/tap foliage over a clean white inspection tray for a minimum of 10 seconds to dislodge any insects. The **Authorised Inspection Person** will then inspect the tray for signs of melon thrips. This process is to be repeated until the required number of units has been inspected.

The **Authorised Inspection Person** should ensure that any tapping and shaking during the inspection does not damage the sampled units.

Where packages are fully unpacked during the examination of the produce, the **Authorised Inspection Person** shall examine the sample package (and lid if applicable) for the presence of suspect melon thrips.

INSPECTION OF LIVE PLANTS FOR MELON THRIPS

5. place sampled units back into the package, where applicable, until the sample package has been fully repacked;
6. return the sample packages to the consignment or lot following the inspection;
7. record information on the Melon Thrips Inspection Record in accordance with Section 7.6.4 of Interstate Certification Assurance Operational Procedure *Inspection of Fruits and Vegetables (Post Harvest), Live Plants, Cut Flowers and Foliage for Melon Thrips* [ICA-38].

6.5 Suspect Melon Thrips Detection

The **Authorised Inspection Person** shall immediately advise the Certification Controller of the detection of suspect melon thrips. The **Authorised Inspection Person** shall take a sample and reject and segregate all produce in the consignment or lot until the sample results are returned to the business in accordance with Section 7.3.1 of Interstate Certification Assurance Operational Procedure *Inspection of Fruits and Vegetables (Post Harvest), Live Plants, Cut Flowers and Foliage for Melon Thrips* [ICA-38].

The **Authorised Inspection Person** shall determine by reference illustrations and photographs (refer [Attachment 6](#) Identification of Melon Thrips) whether the sample is suspect melon thrips.

Should the Authorised Inspection Person determine the sample to be suspect melon thrips, the sample shall be submitted to an Approved Taxonomist in accordance with Section 7.7.1 or 7.7.2 of Interstate Certification Assurance Operational Procedure *Inspection of Fruits and Vegetables (Post Harvest), Live Plants, Cut Flowers and Foliage for Melon Thrips* [ICA-38].

If the suspect thrips is subsequently confirmed not to be melon thrips by the **Authorised Inspection Person**, all rejected product that is held in the consignment or lot may be reconsidered for certification provided all requirements of Operational Procedure ICA-38 have been met.

6.6 Sampling Suspect Melon Thrips

6.6.1 Taking the Sample

All suspect melon thrips samples must be submitted to an Approved Taxonomist by an **Authorised Inspection Person**. Where possible, an **Authorised Inspection Person** should take more than one sample.

The **Authorised Inspection Person** shall take each sample by:

1. carefully retrieving the suspect melon thrips with an appropriate instrument i.e. brush, forceps or scalpel;
2. placing the suspect melon thrips in a specimen bottle that contains an appropriate preservative material i.e. methylated spirits.

INSPECTION OF LIVE PLANTS FOR MELON THIRPS

Where a suspect melon thrips is contained on the plant or foliage, the plant or foliage with the suspect melon thrips must be wrapped in damp paper towel and placed into a plastic bag without a preservative material i.e. methylated spirits.

3. completing a Sample Submission Form (refer [Attachment 5](#) for correctly completed example) for each sample taken; and
4. placing the specimen bottle or produce (if applicable) along with completed sample submission form into a sealable plastic bag.

The **Authorised Inspection Person** shall forward the sample to an Approved Taxonomist within 24 hours of the sample being taken.

Where a suspect pest sample cannot be delivered in person by an **Authorised Inspection Person**, the sample shall be forwarded by secured mail or courier to an Approved Taxonomist for identification.

6.7 Issuance of a Plant Health Assurance Certificate

Following examination of the produce, and when the **Authorised Inspection Person** is satisfied that all the conditions and restrictions associated with the produce described on the Melon Thrips Inspection Record have been met, the Authorised Signatory of the business shall issue a Plant Health Assurance Certificate in accordance with Interstate Certification Assurance Operational Procedure *Inspection of Fruits and Vegetables (Post Harvest), Live Plants, Cut Flowers and Foliage for Melon Thrips* [ICA-38] and *Guidelines for Completion of Plant Health Assurance Certificates* [ICA-WI-02].

7. ATTACHMENTS

Attachment 1	<i>Melon Thrips Inspection Record</i>	(COMPLETED EXAMPLE)
Attachment 2	<i>Melon Thrips Inspection Record</i>	(COMPLETED EXAMPLE)
Attachment 3	<i>Melon Thrips Inspection Record</i>	(COMPLETED EXAMPLE)
Attachment 4	<i>Melon Thrips Inspection Record</i>	(COMPLETED EXAMPLE)
Attachment 5	<i>Sample Submission Form</i>	(COMPLETED EXAMPLE)
Attachment 6	<i>Identification of Melon Thrips</i>	

MELON THRIPS INSPECTION RECORD

Date of Inspection <i>23/12/11</i>		Package Identification		
Place of Inspection <i>A. Smith</i> <i>Sweet Lane Stanthorpe 4380</i>		IP Number <small>(if applicable)</small> <i>Q9999</i>		
Name of Authorised Inspection Person <i>A.I. Person</i>		Name & Address of Grower & Packer <small>(if multiple, list in comments/findings column)</small> <i>A. Smith</i> <i>Sweet Lane Stanthorpe 4380</i>		
Inspection Method <input type="checkbox"/> End-point <input checked="" type="checkbox"/> In-line		Produce Type <small>(if multiple, list in comments/findings column)</small> <i>Tomato seedlings</i>		
Inspection Rate <input checked="" type="checkbox"/> 600 Unit <input type="checkbox"/> 2%		Total Number of Packages in Consignment/Lot <small>(list separately if multiple commodities)</small> <i>3000 trays</i>		
Notes:		PHAC No(s) <i>9993, 9994, 9995</i>		
Package No.	Time sample taken (in-line only)	Number of Units	Total Number of Units	Comments/Findings
1	<i>8:30am</i>	<i>100</i>	<i>100</i>	
2	<i>9:00am</i>	<i>100</i>	<i>200</i>	
3	<i>9:30am</i>	<i>100</i>	<i>300</i>	
4	<i>10:00am</i>	<i>100</i>	<i>400</i>	
5	<i>10:30am</i>	<i>100</i>	<i>500</i>	
6	<i>11:00am</i>	<i>100</i>	<i>600</i>	
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
Pass	<input checked="" type="checkbox"/>	Fail	Signature of Authorised Inspection Person: <i>T \ C \ U \ A \ E \ C</i>	
Actions resulting from a suspected detection of a quarantine pest				

MELON THRIPS INSPECTION RECORD

Date of Inspection <i>23/12/11</i>		Package Identification		
Place of Inspection <i>A. Smith</i> <i>Sweet Lane Stanthorpe 4380</i>		IP Number <small>(if applicable)</small> <i>Q9999</i>		
Name of Authorised Inspection Person <i>A.I. Person</i>		Name & Address of Grower & Packer <small>(if multiple, list in comments/findings column)</small> <i>A. Smith</i> <i>Sweet Lane Stanthorpe 4380</i>		
Inspection Method <input type="checkbox"/> End-point <input checked="" type="checkbox"/> In-line		Produce Type <small>(if multiple, list in comments/findings column)</small> <i>Tomato seedlings</i>		
Inspection Rate <input type="checkbox"/> 600 Unit <input checked="" type="checkbox"/> 2%		Total Number of Packages in Consignment/Lot <small>(list separately if multiple commodities)</small> <i>1200 trays</i>		
Notes:		PHAC No(s) <i>8993, 8994, 8995</i>		
Package No.	Time sample taken (in-line only)	Number of Units	Total Number of Units	Comments/Findings
1	<i>9:00am</i>	<i>8</i>	<i>8</i>	
2	<i>10:00am</i>	<i>8</i>	<i>16</i>	
3	<i>11:00am</i>	<i>8</i>	<i>24</i>	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
Pass	<input checked="" type="checkbox"/>	Fail	Signature of Authorised Inspection Person: <i>T \ C \ U \ E \ C</i>	
Actions resulting from a suspected detection of a quarantine pest				

MELON THRIPS INSPECTION RECORD

Date of Inspection <i>23/12/11</i>				Package Identification	
Place of Inspection <i>Green Beauty Pty Ltd Howard Rd Pallara Q 4110</i>				IP Number <small>(if applicable)</small> <i>Q9999</i>	
Name of Authorised Inspection Person <i>A.I. Person</i>				Name & Address of Grower & Packer <small>(if multiple, list in comments/findings column)</small>	
Inspection Method <input checked="" type="checkbox"/> End-point <input type="checkbox"/> In-line				Produce Type <small>(if multiple, list in comments/findings column)</small>	
Inspection Rate <input checked="" type="checkbox"/> 600 Unit <input type="checkbox"/> 2%				Total Number of Packages in Consignment/Lot <small>(list separately if multiple commodities)</small> <i>Gerbera 72 cartons, Bougainvillea 56 cartons, Heliconia 144 cartons, Anthurium 72 cartons</i>	
Notes:				PHAC No(s) <i>9993</i>	
Package No.	Time sample taken (in-line only)	Number of Units	Total Number of Units	Comments/Findings	
1		<i>126</i>	<i>126</i>	<i>Gerbera sp A Smith Pallara Q 4110</i>	
2		<i>96</i>	<i>222</i>	<i>Bougainvillea sp B Brown Stanthorpe 4380</i>	
3		<i>50</i>	<i>272</i>	<i>Heliconia sp C Blogs Toowoomba 4350</i>	
4		<i>50</i>	<i>322</i>	<i>Heliconia sp C Blogs Toowoomba 4350</i>	
5		<i>50</i>	<i>372</i>	<i>Heliconia sp C Blogs Toowoomba 4350</i>	
6		<i>50</i>	<i>422</i>	<i>Heliconia sp C Blogs Toowoomba 4350</i>	
7		<i>50</i>	<i>472</i>	<i>Heliconia sp C Blogs Toowoomba 4350</i>	
8		<i>2</i>	<i>474</i>	<i>Heliconia sp C Blogs Toowoomba 4350</i>	
9		<i>126</i>	<i>600</i>	<i>Anthurium sp C Blogs Toowoomba 4350</i>	
10					
11					
12					
13					
14					
15					
16					
17					
18					
Pass	<input checked="" type="checkbox"/>	Fail	Signature of Authorised Inspection Person: <i>T \ C [Signature]</i>		
Actions resulting from a suspected detection of a quarantine pest					

MELON THRIPS INSPECTION RECORD

Date of Inspection <i>23/12/11</i>				Package Identification	
Place of Inspection <i>Green Beauty Pty Ltd Howard Rd Pallara Q 4110</i>				IP Number <small>(if applicable)</small> <i>Q9999</i>	
Name of Authorised Inspection Person <i>A.I. Person</i>				Name & Address of Grower & Packer <small>(if multiple, list in comments/findings column)</small> <i>Green Beauty Pty Ltd Howard Rd Pallara Q 4110</i>	
Inspection Method <input checked="" type="checkbox"/> End-point <input type="checkbox"/> In-line				Produce Type <small>(if multiple, list in comments/findings column)</small> <i>Gerbera sp.</i>	
Inspection Rate <input type="checkbox"/> 600 Unit <input checked="" type="checkbox"/> 2%				Total Number of Packages in Consignment/Lot <small>(list separately if multiple commodities)</small> <i>120 cartons</i>	
Notes:				PHAC No(s) <i>8993</i>	
Package No.	Time sample taken (in-line only)	Number of Units	Total Number of Units	Comments/Findings	
1		<i>36</i>	<i>36</i>	<i>Red Gerbera sp J Smith Pallara Q 4110</i>	
2		<i>36</i>	<i>72</i>	<i>Red Gerbera sp J Smith Pallara Q 4110</i>	
3		<i>36</i>	<i>108</i>	<i>Yellow Gerbera sp J Smith Pallara Q 4110</i>	
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
Pass	<input checked="" type="checkbox"/>	Fail	Signature of Authorised Inspection Person: <i>T \ C</i>		
Actions resulting from a suspected detection of a quarantine pest					

SAMPLE SUBMISSION FORM

AUTHORISED INSPECTION PERSON DETAILS

Authorised Inspection Person Name	<i>C. Smith</i>	IP Number of Accredited Business	09898
Name and address of grower/packer or IP number of the produce that sample was taken	<i>Green Beauty Pty Ltd Howard Rd Pallara Q 4110</i>	Type of produce & quantity from which sample was taken	Type of produce: <i>Chrysanthemum plants</i>
			Quantity of produce: <i>100 cartons</i>
Date sample was taken	<i>23/11/11</i>	Date sample was submitted to Diagnostician	<i>23/11/11</i>
Contact Telephone No	<i>07 3310 2810</i>	Email/Fax No	<i>07 3310 2810</i>

SAMPLE DETAILS

Type of Sample: <small>(e.g. insect, leaves, seeds)</small>	<i>Insect (adult)</i>
Diagnosis request: <small>(e.g. identify insect, disease, seed)</small>	<i>Confirm whether melon thrips or not</i>
Sample details: <small>Describe where, when and how the sample was taken. Include the type produce or crop the sample was taken from, who took the sample and why diagnosis is required.</small>	<i>Sample taken by C Smith at Green Beauty Pty Ltd Pallara Q on Chrysanthemum Diagnosis required for market access to Tasmania.</i>

DIAGNOSIS DETAILS - For Diagnostician Use Only

Date Sample Received	<i>23/11/11</i>	Date Sample Diagnosed	<i>23/11/11</i>
Diagnosis Result	<i>Confirmed as Melon Thrips (<i>Thrips palmi</i>)</i>		
Method of Diagnosis	<i>Microscope</i>		
Comments			
Diagnostician Name	<i>B. Bugg</i>	Diagnostician Position	<i>Senior Entomologist</i>
Signature	<i>B. Bugg</i>	Date	<i>23/11/11</i>

IDENTIFICATION OF MELON THRIPS

Melon Thrips (*Thrips palmi* Karney)

Host Range

Melon thrips have a wide range of fruit, vegetable, ornamental and weed hosts but are best known as a pest in crops of Cucurbitaceae and Solanaceae. Crops most affected by melon thrips include beans, capsicum, chilli, cucumber, eggplant, melons, okra, pumpkin, tomato, silverbeet, squash, watermelon and zucchini. Weed hosts include pigweed, amaranthus, gomphrena and potato weed as well as a variety of weeds of the cucurbit and solanum families such as Devil's Fig (*Solanum torvum*).

Detection and Identification

Melon thrips injure infested plants by killing surface cells with their piercing and sucking mouthparts. Feeding normally occurs on foliage but flowers and fruit may be preferred feeding sites on some plant species. Leaves become yellow, white or brown and then crinkle and die. Heavily infested crops often acquire a silver to bronze colour.

Damaged terminal growth may be discoloured, stunted and deformed. Fruit may abort or develop scar tissue as a result of melon thrips feeding under the calyx of expanding fruit.

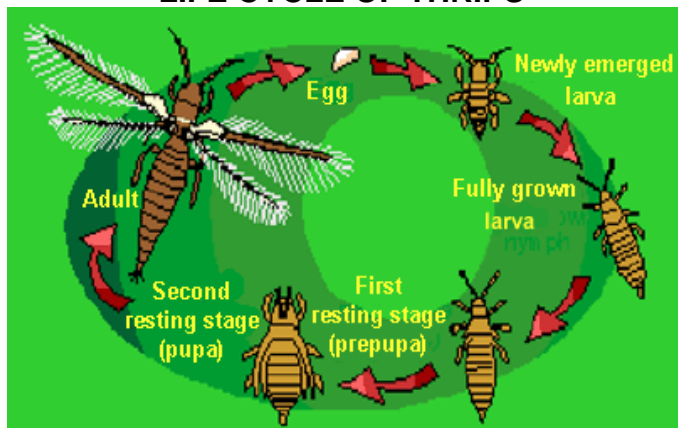
Melon thrips are very small and resemble many other common thrips species and therefore require specialist identification. Samples of suspected melon thrips must be submitted to an Approved Taxonomist for identification.

Life Cycle

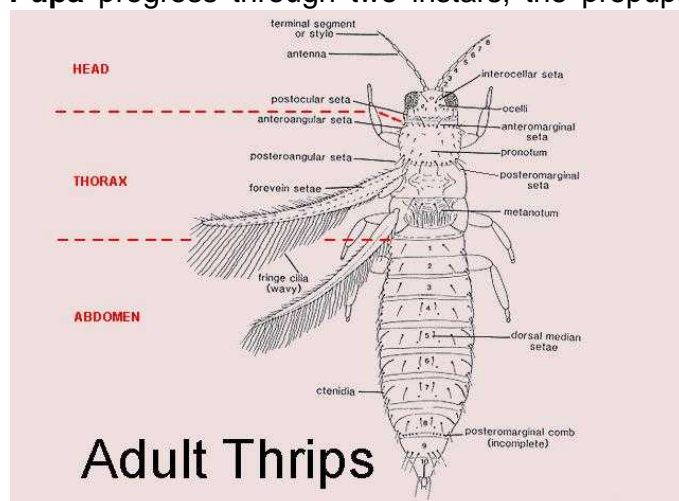
Eggs are kidney-shaped, colourless to pale yellowish-white and measure only 0.25 mm in length. Eggs are normally deposited in leaf tissue in a slit cut by the female but can also be deposited in flowers and fruit. Females can produce up to 200 eggs but average approximately 50 per female.

Larvae resemble the adult in general body form though they lack wings and are smaller. There are two instars or stages during the larval development period. Larvae feed in groups, particularly along the leaf midrib and veins, usually on older leaves. On completion of the larval stage the insect normally descends to the soil or leaf litter where it constructs a small earthen chamber as a pupation site.

LIFE CYCLE OF THRIPS



Pupa progress through two instars, the prepupal instar which is nearly inactive and the pupal instar which is inactive. Both instars are non-feeding. The prepupae and pupae resemble the adult and larval forms except they possess wing pads.



Adults are winged, pale green to orange in colour, cigar-shaped and measure from 0.8 to 1.3 mm in length. A black line, resulting from the juncture of the wings, runs along the back of the body. Adults tend to feed on young growth and are most commonly found on the undersides of the leaves but can also occur on flowers and fruits.

IDENTIFICATION OF MELON THRIPS



Adult Melon Thrips
(Photo: C Freebalm, DAFF Qld)



Melon Thrips Larvae
(Photo: Zenkoko Noson, Kyoiku Kyoiku Co. Ltd, Japan)



Melon Thrips Damage – Capsicum Fruit
(Photo: University of Florida, USA)



Melon Thrips Damage – Eggplant Fruit
(Photo: J Hargreaves, DAFF Qld)



Melon Thrips on French Bean
(Photo: University of Florida, USA)



Melon Thrips Damage – Capsicum Plant
(Photo: University of Florida, USA)