

# CONDUCTING AN INSPECTION OF CUT FLOWERS AND FOLIAGE FOR MELON THRIPS

## REVISION REGISTER

Revision No.	Date of Issue	Amendment Details
First	10/01/2013	New Issue
Second	28/05/2014	Updated Issue

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## 1. PURPOSE

The purpose of this work instruction is to provide guidelines for the inspection of cut flowers and foliage 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 cut flowers and foliage requiring certification for freedom from melon thrips and movement from Northern Territory to another State or Territory within Australia by an Approved Inspection Officer.

## 3. REFERENCES

<b>WI-02</b>	Guidelines for Completion of Plant Health Assurance Certificates.
<b>ICA-38</b>	Inspection of Fruits and Vegetables (Post Harvest), Live Plants, Cut Flowers and Foliage for Melon Thrips.
<b>MSS-01</b>	Inspection and Treatment of Plants and Plant Products for Melon Thrips, Silverleaf and Spiralling Whiteflies.

## 4. DEFINITIONS

<b>Approved Inspection Person</b>	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 approved inspection officers maintained by the business.
<b>Assurance Certificate</b>	means a Plant Health Assurance Certificate.
<b>Authorised Signatory</b>	means a person whose name and specimen signature is included as an Authorised Signatory on the business's application for accreditation.
<b>Business</b>	means the legal entity responsible for the operation of the facility and the ICA/CA arrangement detailed in the Business' Application for Accreditation.
<b>CA</b>	means a Certification Assurance arrangement.
<b>Certified/Certification Consignment</b>	means covered by a valid Plant Health Assurance Certificate. 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.
<b>DPIR</b>	means the Department of Primary Industry and Resources.
<b>End-Point Inspection</b>	means the process by which a representative sample is drawn and inspected from the finalised consignment prior to certification.
<b>Facility</b>	means the location where plants are assembled, inspected, securely stored, certified and dispatched.
<b>Homogeneous</b>	means produce that is all of the same or similar kind or nature.
<b>ICA</b>	means Interstate Certification Assurance.

<b>In-line Inspection</b>	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.
<b>Inspection</b>	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.
<b>Lot</b>	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.
<b>Melon Thrips</b>	means all stages of <i>Thrips palmi</i> (Karny) including egg, nymph and adult.
<b>MT</b>	means melon thrips.
<b>Package</b>	means the complete outer covering or container used to transport and market the produce.
<b>Packed Product</b>	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.
<b>Produce</b>	means cut flowers and foliage but excludes seeds, underground parts and dried or processed plant materials.
<b>Plant Health Assurance Certificate</b>	means a certificate issued by an Authorised Signatory under an ICA/CA arrangement stating that the plant or other thing described on the certificate meets a specified treatment, condition, pest or area freedom or other requirement.
<b>Thrips</b>	means all stages of <i>Thrips</i> spp. including egg, nymph and adult.
<b>Unit (Cut Flowers and Foliage)</b>	means a single cut stem with flowers and/or foliage attached.

## 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) and the Certification Assurance arrangement Procedure Inspection and Treatment of Plants and Plant Products for Melon Thrips, Silverleaf and Spiralling Whiteflies (MSS01) that require further explanation to a task or activity. Persons responsible **must** ensure they refer to the relevant sections of the Operational Procedure and/or Procedure before applying any task in this Work Instruction.

## 6. ACTIONS

### 6.1 Sampling Cut Flowers and Foliage for Inspection

#### 6.1.1 Inspection Type

The Approved Inspection Officer **shall** inspect cut flowers and foliage by one of two types.

1. End-point inspection;

**OR**

2. In-line inspection.

### **6.1.2 Inspection Rate**

The Approved Inspection Officer **shall** inspect cut flowers and foliage by end-point or in-line inspection at one of the following rates:

- 600 units;
- OR**
- 2% of the number of packages;
- OR**
- Whichever is the greater.

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

An Approved Inspection Officer 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 Approved Inspection Officer **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, cut flower or foliage type or grower;
- the quantity of a particular cut flower or foliage 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.

Where the Approved Inspection Officer 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 Approved Inspection Officer **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 packed produce drawn from a lot and inspected during the processing and packing of the produce.

The Approved Inspection Officer **shall** sample packages at the predetermined inspection rate (refer 6.1.2) from the packing line and move the packages to the inspection facility for examination (refer 6.4).

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

***Example A – In-line 600 Unit Inspection***

*An Approved Inspection Officer is presented with 5000 individual chrysanthemum cut flowers from one grower (A Smith) of which three consignments consisting of 10 cartons each are to be consigned interstate to a quarantine restricted market for melon thrips.*

*The Certification Controller of the packing shed advises the Approved Inspection Officer that the packing period to pack out that grower's chrysanthemums will be 3 hours. The Approved Inspection Officer calculates the rate at which the samples are to be drawn from the processing line to obtain a 600 unit sample as follows:*

*The Approved Inspection Officer calculates:*

- 3 hour packing period for 5000 individual chrysanthemum cut flowers from one grower (one lot);*
- 600 units are to be drawn over a 3 hour packing period = 100 units per ½ hour;*
- unit count per carton of chrysanthemum cut flowers = 50 units;*
- 2 cartons (final packaging) will need to be drawn every ½ hour from the processing line.*

*The Approved Inspection Officer examines 100% of each unit within each sample package till the required 100 units have been reached for each interval. The Approved Inspection Officer shall not examine more than 100 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 Approved Inspection Officer is presented with 15000 individual chrysanthemum cut flowers from one grower (A Smith) of which three consignments consisting of 10 cartons each are to be consigned to a quarantine restricted market for melon thrips.*

*The Certification Controller of the packing shed advises the Approved Inspection Officer that the packing period to pack out that grower's chrysanthemums will be 3 hours. The Approved Inspection Officer calculates the rate at which the samples are to be drawn from the processing line to obtain a 2% sample as follows:*

*The Approved Inspection Officer calculates:*

- 3 hour packing period for 15000 individual chrysanthemum cut flowers from one grower (one lot);*
- 100 cartons per hour packed;*
- 300 cartons packed over a 3 hour packing period;*
- one (1) in fifty (50) or 2 cartons (final packaging) per hour need to be drawn from the processing line;*

- *6 cartons inspected over 3 hour packing period.*

*The Approved Inspection Officer examines 100% of each unit within each sample carton.*

*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 Approved Inspection Officer **shall** sample packages at the predetermined inspection rate (refer 6.1.2) from the consignment and move the packages to the inspection facility ready for examination (refer 6.4).

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

#### **Example C – End-point 600 Unit Inspection**

*An Approved Inspection Officer is presented with a mixed consignment of foliage and cut flowers to be consigned to a quarantine restricted market for melon thrips. The consignment consists of 344 cartons and comprises:*

- *72 cartons of ferns from grower/packer A Smith;*
- *56 cartons of orchid flowers and stem from grower/packer B Brown;*
- *144 cartons of succulent leaves and 72 cartons of chrysanthemum cut flowers from grower/packer C Blogs.*

*The Approved Inspection Officer 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 (succulent leaves) represents 42% and 72 cartons of (chrysanthemum cut flowers) represents 21% of the consignment respectively.*

*The Approved Inspection Officer determines that the proportion of cut flowers and foliage to be examined from each grower will be based on the percentage of each growers produce in the consignment.*

*The Approved Inspection Officer calculates the number of units to examine from each grower as follows:*

- *The number of A Smith's fern fronds to examine is  $600 \times 21\% = 126$  units.*
- *The number of B Brown's orchid flower and stems to examine is  $600 \times 16\% = 96$  units.*
- *The number of C Blogs' succulent leaves to examine is  $600 \times 42\% = 252$  units, and the number of chrysanthemum cut flowers to examine is  $600 \times 21\% = 126$  units.*

*The Approved Inspection Officer draws cartons at random from each grower until they have examined the required number of units. The Approved Inspection Officer ensures that at least one sample carton is taken from each grower.*

*(Refer Attachment 3 for the completed Melon Thrips Inspection Record for Example C).*

**Example D – End Point 2% Inspection**

*An Approved Inspection Officer is presented with a mixed consignment of red and yellow chrysanthemum cut flowers which are to be consigned to a quarantine restricted market for melon thrips. The consignment comprises:*

*Six (6) pallets of red chrysanthemum cut flowers and four (4) pallets of yellow chrysanthemum cut flowers from grower/packer J Smith.*

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

*The Approved Inspection Officer calculates that there are:*

- 72 cartons of red chrysanthemum cut flowers representing 60% of the consignment; and*
- 48 cartons of yellow chrysanthemum cut flowers representing 40% of the consignment.*

*The Approved Inspection Officer determines that the proportion of packages to be sampled will be based on the percentage of red and yellow chrysanthemum cut flowers in the consignment.*

*The Approved Inspection Officer calculates the number of red and yellow chrysanthemum cut flowers sample packages to take as follows:*

- $2\% \times 72$  packages = 2 packages (always round up to next whole number);*
- $2\% \times 48$  packages = 1 packages (always round up to next whole number).*

*The Approved Inspection Officer draws sample packages at random from the pallets to achieve 3 packages (2 red and 1 yellow chrysanthemum cut flower packages).*

*The Approved Inspection Officer 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 Cut Flowers and Foliage**

The Approved Inspection Officer **shall** examine the cut flowers and foliage from sampled packages after drawing the required number of packages depending on the inspection type and rate (refer 6.1.1 and 6.1.2 ).

Where a 2% rate is nominated by the Certification Controller, an Approved Inspection Officer **shall** examine 100% of cut flowers and foliage contained in each sample package.

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



All cut flowers and foliage examinations **shall** be carried out by the Approved Inspection Officer.

The Approved Inspection Officer **shall**:

1. move all sample packages to the inspection facility;
2. record information on the Melon Thrips Inspection Record in accordance with section 7.6.1 of ICA-38 and/or section 7.4.1 of MSS-01.
3. place sample cartons (where possible) on the inspection bench;

Where it is not possible to place the sample package on the inspection bench, the Approved Inspection Officer **shall** remove the cut flowers or foliage from the packaging and place on the inspection bench.

4. visually examine the required number of units (refer 6.1.2) within each sample package for Melon Thrips.

Cut flowers and foliage 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 Approved Inspection Officer will use, as necessary, a hand lens of at least X10 magnification or similar device to assist in the examination of the cut flowers or foliage in the detection of melon thrips.

In the case of foliage, the Approved Inspection Officer, whilst holding onto the stem end, invert and shake/tap the foliage over a clean white inspection tray for a minimum of 10 seconds to dislodge any insects. The Approved Inspection Officer 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 Approved Inspection Officer **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 Approved Inspection Officer **shall** examine the sample package, including the lid for the presence of suspect 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 ICA-38 and/or section 7.4.4 of MSS-01.

## **6.5 Suspect Melon Thrips Detection**

The Approved Inspection Officer **shall** immediately advise the Certification Controller of the detection of suspect melon thrips. The Approved Inspection Officer **shall** take a sample and reject and segregate all produce in the consignment or lot until the sample results are returned to the business.

The Approved Inspection Officer **shall** determine by reference illustrations and photographs (refer Attachment 6) whether the sample is suspect melon thrips.

Should the Approved Inspection Officer determine the sample to be suspect melon thrips, the sample **shall** be submitted to DPIF Entomology in accordance with section 7.7.1 or 7.7.2 of ICA-38 and/or section 7.5.2 MSS-01.

If the suspect thrips is subsequently confirmed not to be melon thrips by the Approved Inspection Officer, all rejected product that is held in the consignment or lot may be reconsidered for certification provided all requirements of ICA-38 and/or MSS-01 have been met.

## **6.6 Sampling Suspect Melon Thrips**

### **6.6.1 Taking the Sample**

All suspect melon thrips samples must be submitted to DPIF Entomology by an Approved Inspection Officer. Where possible, more than one sample **shall** be submitted.

The Approved Inspection Officer **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;

Where a suspect melon thrips is contained on cut flowers or foliage, the cut flowers or foliage or part of the cut flowers 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 Approved Inspection Officer **shall** forward the sample to an DPIF Entomology within 24 hours of the sample being taken.

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

**6.7 Issuance of a Plant Health Assurance Certificate**

Following examination of the produce and when the Approved Inspection Officer is satisfied that all the conditions and restrictions associated with the produce described on the Melon Thrips Inspection Record have been met the Approved Inspection Officer **shall** issue a Plant Health Assurance Certificate in accordance with ICA-38 and/or MSS-01 and Guidelines for Completion of Plant Health Assurance Certificates (WI-02).

**7. ATTACHMENTS**

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

# MELON THRIPS INSPECTION RECORD

**Attachment 1**

Date of Inspection <i>23/12/11</i>			Package Identification		
Place of Inspection <i>Smith Produce Beddington Road Humpty Doo 0836</i>			IP Number (if applicable) <i>A9999</i>		
Name of Approved Inspection Officer <i>A.I. Person</i>			Name & Address of Grower and or Packer (if multiple, list in comments/findings column) <i>A. Smith Beddington Road Humpty Doo 0836</i>		
Inspection Type <input type="checkbox"/> End-point <input checked="" type="checkbox"/> In-line			Produce Type (if multiple, list in comments/findings column) <i>Chrysanthemum</i>		
Inspection Rate <input checked="" type="checkbox"/> 600 Unit <input type="checkbox"/> 2%			Total Number of Packages in Consignment/Lot (list separately if multiple commodities) <i>1050 cartons</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>80</i>	<i>80</i>		
2	<i>8:30am</i>	<i>20</i>	<i>100</i>		
3	<i>9:00am</i>	<i>60</i>	<i>160</i>		
4	<i>9:00am</i>	<i>40</i>	<i>200</i>		
5	<i>9:30am</i>	<i>55</i>	<i>255</i>		
6	<i>9:30am</i>	<i>45</i>	<i>300</i>		
7	<i>10:00am</i>	<i>68</i>	<i>368</i>		
8	<i>10:00am</i>	<i>32</i>	<i>400</i>		
9	<i>10:30am</i>	<i>77</i>	<i>477</i>		
10	<i>10:30am</i>	<i>23</i>	<i>500</i>		
11	<i>11:00am</i>	<i>61</i>	<i>561</i>		
12	<i>11:00am</i>	<i>39</i>	<i>600</i>		
13					
14					
15					
16					
Pass	<input checked="" type="checkbox"/>	Fail	Signature of Approved Inspection Officer: <i>A.I. Person</i>		
Actions resulting from a suspected detection of a quarantine pest					

# MELON THRIPS INSPECTION RECORD

**Attachment 2**

Date of Inspection <i>23/12/11</i>		Package Identification		
Place of Inspection <i>Smith Produce</i> <i>Beddington Road Humpty Doo 0836</i>		IP Number (if applicable) <i>A9999</i>		
Name of Approved Inspection Officer <i>A.I. Person</i>		Name & Address of Grower and or Packer (if multiple, list in comments/findings column) <i>A. Smith</i>  <i>Beddington Road Humpty Doo 0836</i>		
Inspection Type <input type="checkbox"/> End-point <input checked="" type="checkbox"/> In-line		Produce Type (if multiple, list in comments/findings column) <i>Chrysanthemum</i>		
Inspection Rate <input type="checkbox"/> 600 Unit <input checked="" type="checkbox"/> 2%		Total Number of Packages in Consignment/Lot (list separately if multiple commodities) <i>1050 cartons</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>8:15am</i>	88	88	
2	<i>8:30am</i>	81	169	
3	<i>8:45am</i>	80	249	
4	<i>9:00am</i>	85	334	
5	<i>9:15am</i>	72	406	
6	<i>9:30am</i>	66	472	
7	<i>9:45am</i>	85	557	
8	<i>10:00am</i>	67	624	
9	<i>10:15am</i>	81	705	
10	<i>10:30am</i>	84	789	
11	<i>10:45am</i>	56	845	
12	<i>11:00am</i>	83	928	
13				
14				
15				
16				
Pass	✓	Fail	Signature of Approved Inspection Officer: <i>A.I. Person</i>	
Actions resulting from a suspected detection of a quarantine pest				

# MELON THRIPS INSPECTION RECORD

**Attachment 3**

Date of Inspection <i>23/12/11</i>				Package Identification	
Place of Inspection <i>Bale Fresh Produce Hopewell Road Berry Springs 0837</i>				IP Number (if applicable) <i>A. Smith A9898B. Brown A 9991, C. Blogs A9992</i>	
Name of Approved Inspection Officer <i>A.I. Person</i>				Name & Address of Grower and or Packer (if multiple, list in comments/findings column)	
Inspection Type <input checked="" type="checkbox"/> End-point <input type="checkbox"/> In-line				Produce Type (if multiple, list in comments/findings column)	
Inspection Rate <input checked="" type="checkbox"/> 600 Unit <input type="checkbox"/> 2%				Total Number of Packages in Consignment/Lot <sup>(list separately if multiple commodities)</sup> <i>Fern Frond 72 cartons, Orchid flower 56 cartons, Succulent leaves 144 carton, Chrysanthemum 72 cartons</i>	
Notes:				PHAC No(s) <i>8991</i>	
Package No.	Time sample taken (in-line only)	Number of Units	Total Number of Units	Comments/Findings	
1		88	88	<i>Fern frond A Smith Humpty Doo 0836</i>	
2		38	126	<i>Fern frond A Smith Humpty Doo 0836</i>	
3		20	146	<i>Orchid flower B Brown Darwin River 0837</i>	
4		20	166	<i>Orchid flower B Brown Darwin River 0837</i>	
5		20	186	<i>Orchid flower B Brown Darwin River 0837</i>	
6		20	206	<i>Orchid flower B Brown Darwin River 0837</i>	
7		16	222	<i>Orchid flower B Brown Darwin River 0837</i>	
8		161	383	<i>Succulent leaves C Blogs Howard Springs 0835</i>	
9		91	474	<i>Succulent leaves C Blogs Howard Springs 0835</i>	
10		67	541	<i>Chrysanthemum C Blogs Howard Springs 0835</i>	
11		59	600	<i>Chrysanthemum C Blogs Howard Springs 0835</i>	
12					
13					
14					
15					
16					
Pass	<input checked="" type="checkbox"/>	Fail	Signature of Approved Inspection Officer: <i>A.I. Person</i>		
Actions resulting from a suspected detection of a quarantine pest					

# MELON THRIPS INSPECTION RECORD

**Attachment 4**

Date of Inspection <i>23/12/11</i>		Package Identification		
Place of Inspection <i>Bale Fresh Produce Hopewell Road Berry Springs 0836</i>		IP Number (if applicable) <i>A9999</i>		
Name of Approved Inspection Officer <i>A.I. Person</i>		Name & Address of Grower and or Packer (if multiple, list in comments/findings column) <i>J. Smith Stow Road Humpty Doo 0836</i>		
Inspection Type <input checked="" type="checkbox"/> End-point <input type="checkbox"/> In-line		Produce Type (if multiple, list in comments/findings column) <i>Succulent leaves</i>		
Inspection Rate <input type="checkbox"/> 600 Unit <input checked="" type="checkbox"/> 2%		Total Number of Packages in Consignment/Lot (list separately if multiple commodities) <i>720 cartons</i>		
Notes:		PHAC No(s) <i>8884</i>		
Package No.	Time sample taken (in-line only)	Number of Units	Total Number of Units	Comments/Findings
1		35	35	
2		42	77	
3		41	118	
4		40	158	
5		40	198	
6		44	242	
7		45	287	
8		47	334	
9		41	375	
10		41	416	
11		41	457	
12		37	494	
13		38	532	
14		44	576	
15		33	609	
16				
Pass	<input checked="" type="checkbox"/>	Fail	Signature of Approved Inspection Officer: <i>A.I. Person</i>	
Actions resulting from a suspected detection of a quarantine pest				

# SAMPLE SUBMISSION FORM

Attachment 5

<b>APPROVED INSPECTION PERSON DETAILS</b>			
Approved Inspection Person Name	<i>C. Smith</i>	IP Number of Accredited Business	<i>49898</i>
Name and address of grower/packer or IP number of the produce that sample was taken	<i>B Brown Beddington Road Darwin River 0837</i>	Type of produce & quantity from which sample was taken	Type of produce: <i>Orchid Flower</i>
			Quantity of produce: <i>350 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>08 8988 4567</i>	Email/Fax No	<i>08 8988 4567</i>

<b>SAMPLE DETAILS</b>	
Type of Sample: (e.g. insect, leaves, seeds)	<i>insect</i>
Diagnosis request: (e.g. identify insect, disease, seed)	<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 Stow Road Humpty Doo on Orchid Flower.  Diagnosis required for market access to Victoria</i>

<b>DIAGNOSIS DETAILS - For Diagnostician Use Only</b>			
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>



## 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.

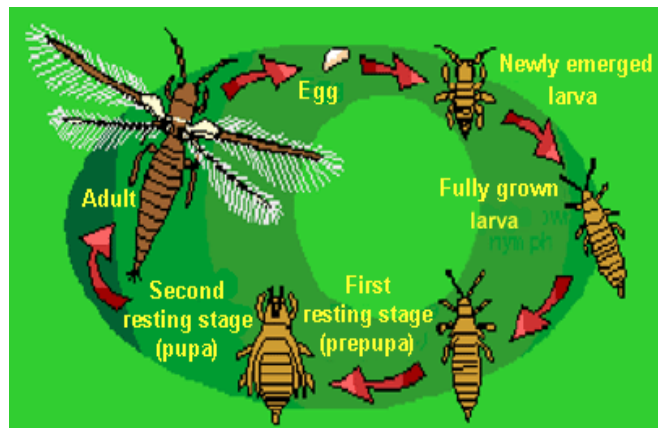
Melon thrips are very small and resemble many other common thrips species and therefore require specialist identification. Samples of suspected melon thrips must be submitted to an Approved Taxonomist for identification.

### Life Cycle

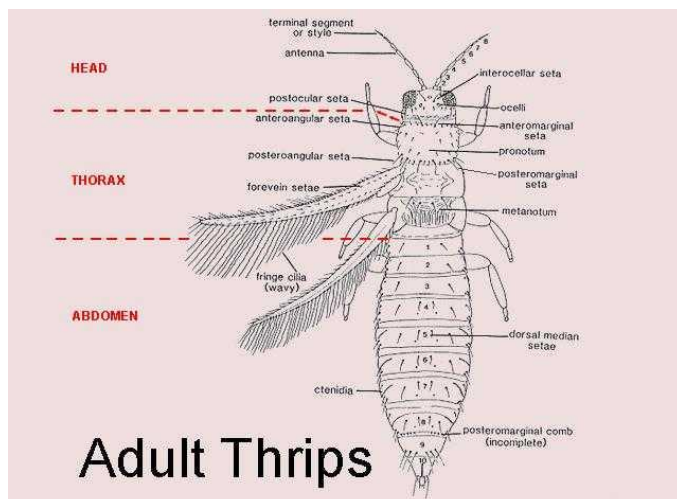
**Eggs** are kidney-shaped, colourless to pale yellowish-white and measure only 0.25 mm in length. Eggs are normally deposited in leaf tissue in a slit cut by the female but can also be deposited in flowers and fruit. Females can produce up to 200 eggs but average approximately 50 per female.

**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 THRIP



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



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



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