

# Harvest inspection of citrus for evidence of fruit fly infestation (WI-09)

## Work Instruction 1.0

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## 1. Purpose

The purpose of this Work Instruction is to document the required steps for conducting checks by Pickers and inspection of citrus by the **Harvest Supervisor** at harvest by **Pickers** to meet the documented requirements of the CA-30 Operational Procedure.

## 2. Scope

This procedure covers harvest inspection of citrus orchards on properties by trained **pickers** overseen by the **Harvest Supervisor** when picking citrus for certification under the CA-30 Compliance Arrangement.

## 3. Reference

Table 1 Reference	
Item	Source
Pre-harvest Bait Spraying & Monitoring & Post-Harvest Packing, Grading & Inspection of Citrus (CA-30) Operational Procedure	<a href="#">Interstate Certification Assurance (ICA) and Compliance Arrangement (CA) operational procedures and application forms - PIRSA</a>

## 4. Definitions

Table 2 Definition of terms and phrases	
Phrase	Definition
block	A single block or unit of trees consisting of the same variety of citrus and being managed as a unit.
Harvest supervisor	A person nominated by the accredited business to conduct inspection and destructive sampling of citrus fruit identified by pickers as being possibly infested with fruit fly.

**Table 2 Definition of terms and phrases**

Phrase	Definition
Property plan	A document completed by a business accredited under Part A or Part B of the CA-30 Operational Procedure indicating the location and variety of citrus covered under the CA-30 Operational Procedure.
Picker	A person trained in the recognition of possible fruit fly infestation who is overseen by a <b>Harvest Supervisor</b> and is responsible for picking fruit on behalf of the business

## 5. Equipment

The following equipment is required and must be available to the **Harvest Supervisor** while picking is underway:

- 10 x magnification hand lens or other similar device;
- Zip-loc bags to store suspect sample container;
- small plastic or otherwise sturdy, sealable container to place samples into;
- knife sufficient to cleanly slice open suspect citrus fruit for inspection;
- cutting board or other suitable surface for cutting fruit safely;
- suitable instrument for safely taking the sample without damaging it (such as forceps, a small paintbrush or wooden toothpick);
- paper towel;
- foam esky with an ice pack or other method of keeping samples cool (not frozen) while still on-site; and
- a refrigerator to keep samples cool before collection.

## 6. Records

The following records are required for crop monitoring:

- Harvest Inspection Record (See CA-30 Operational Procedure); and

- a copy of each **Property Plan** to easily identify each block for recording purposes.

## 7. Procedure

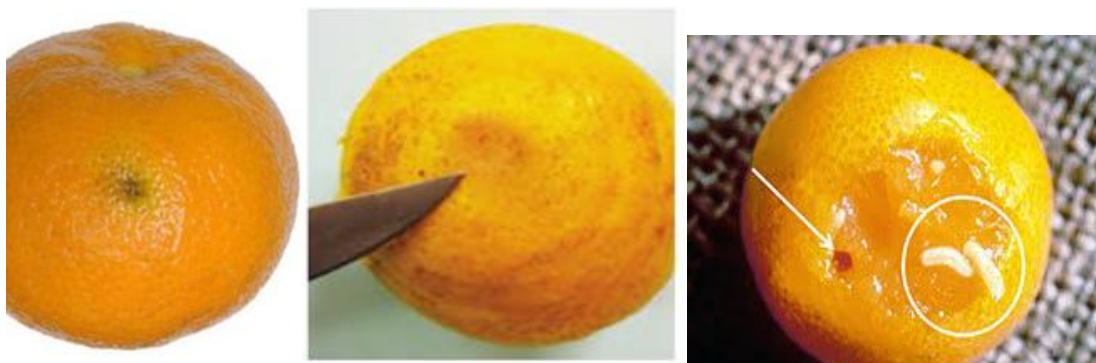
Harvest inspection must take place during picking with any suspect fruit being brought to the attention of the **Harvest Supervisor** by the **Pickers** for closer inspection.

**Pickers** must be trained by the accredited business to recognise any suspect fruit fly symptoms, including:

- Sting marks, which can appear as pin pricks which occur when the female fruit fly punctures the skin of the fruit and lays eggs;
- Softness under the skin which, when cut, shows as a brown, mushy spot where fruit fly larvae have been feeding; or
- Broken skin or damage which goes through the pith into the flesh of the fruit

Any suspect fruit brought to the attention of or discovered by the **Harvest Supervisor** must be examined internally for the presence of any fruit fly larvae. The **Harvest Supervisor** must immediately inform the **Certification Controller** of any suspect fruit fly activity.

The business must maintain and make available inspection equipment that provides a 10 x or greater magnification for the examination of suspect fruit.



*Figure 1. sting mark on mandarin (left), soft spot indicative of fruit fly activity (centre) and fruit fly larvae (right).*

- When cutting, place fruit on a hard or solid surface (never cut fruit while it is in the palm of your hand). Cuts should be less than 1 cm wide right across the width of the fruit to ensure the interior of the fruit is exposed and can be thoroughly examined.
- If the flesh inside the host material is discoloured (turning brown) and soft, this can be an indication that larvae are present. The larvae are white and when they first hatch from the eggs, they are around 1mm long. They can grow up to 8mm in length. Take

care, as fruit fly larvae can “jump” up to metre by curling their bodies and “flicking” away.

- Check each cut surface thoroughly to ensure there are no larvae, eggs or any other evidence of fruit fly present.
- Record your findings on the **Harvest Inspection Record** (See CA-30 Operational Procedure) for each tree inspected and indicate ‘nil’ under the results column if nothing is found.

In the event fruit fly larvae, damage or eggs are suspected, follow the steps in Sections 8, 9 and 10 of this Work Instruction.

Record your findings on the **Harvest Inspection Record** for each tree inspected and indicate ‘nil’ under the results column if nothing is found.

## 8. Handling of suspect fruit fly samples

Samples (suspect infested host material and larvae) should be placed into sealable containers with absorbent paper placed in the bottom of the container to soak up any excess liquids. Ensure a separate sample container is used for each tree samples are collected from.

The **Certification Controller** or **Harvest Supervisor** shall take each sample by

- Carefully removing the suspect fruit fly with an appropriate instrument i.e., a small brush or forceps to avoid damaging the eggs, larvae or sample;
- Placing the sample in a hard container (plastic or other sturdy material) along with the piece, or part of the fruit it was collected from, wrapped in a damp (not wet) paper towel;
- Label the sample as per section 9 below;
- Place the container containing the sample inside a Ziploc bag; and
- Place any sample inside an esky with an ice pack to keep samples cool.

## 9. Labelling the sample

The container should then be labelled with:

- date the sample was collected
- crop monitor / scout name
- accredited businesses IP number
- block name or number

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- location of the tree (for example, 67th tree in from the western end of row 3)
- GPS coordinates of the location (if available)

Within 4 hours, place the sample in a refrigerator (**not freezer**) until the sample can be collected by, or delivered to PIRSA.

### 10. Reporting suspect sample to PIRSA

- The **Harvest Supervisor** must inform the **Certification Controller** of any suspect samples as soon as possible (no longer than 4 hours). Any citrus from the affected property plan already picked, in transit or at the packing shed will need to be held until PIRSA can confirm if the larvae is or is not fruit fly.
- Contact the Riverland Market Access team on 1800 255 556 (staffed 24/7) in the first instance to inform them of the suspect detection and to arrange collection of the sample.
- Keep the sample on the top-shelf of the refrigerator **never** in the freezer until collection or dispatch.

The Department will advise the **Certification Controller** in writing as soon as the result of identification is known. Until that time, any fruit from the affected block must remain quarantined unless other arrangements have been made in writing with PIRSA.