
KIWIFRUIT GROWERS' FRUIT FLY PREPAREDNESS

What you need to know if a fruit fly is detected in a growing region



PURPOSE OF THIS GUIDE

This guide has been produced to inform the kiwifruit industry of the likely sequence of events if a fruit fly response was to occur in a kiwifruit growing region, to allow for business contingency planning.

The information is based on Queensland Fruit Fly (QFF) and should be treated as guidance as the information contained may be subject to change during any response.

Market access restrictions in particular are difficult to predict and can differ from one response to the next.



BACKGROUND

Fruit flies are one of the kiwifruit industry's Most Unwanted biosecurity threats. There are 180 economically significant species around the world of which the QFF is considered to be the greatest threat, followed by the Mediterranean and Oriental species. The QFF has a relatively high risk of entry into New Zealand as it is native and widespread in Eastern parts of Australia, to whom we are closely connected through trade and tourism routes. Incursions of QFF can result in the greatest impact from markets since this pest is not currently present in any of our major kiwifruit trading markets.

New Zealand is one of the only countries in the world that has a major horticultural industry and is free of fruit flies that attack commercial fruit. This freedom provides significant advantage to growers and is something that New Zealand works hard to maintain by deploying resources at the border to prevent entry, and by managing a comprehensive surveillance network of almost 8000 traps as an early warning system to detect any pests that manage to pass through our borders undetected. Since 1990 this network has detected fruit flies on 13 occasions, leading to successful eradications in 1996 and 2015 (for all other detections no evidence of a breeding population was found).

There is an agreed standard for response that has been pre-approved through the Government Industry Agreement (GIA) process. This standard provides the technical specifications that contractors are expected to deliver to, as well as roles and responsibilities in a fruit fly response.



DISTRIBUTION

Mediterranean Fruit Fly / Medfly (top image): Europe, Africa, Central and South America and South West Australia.

Oriental Fruit Fly / Ofly (middle image): South East Asia, Tahiti, Pulau, Nauru, Hawaii and Sub-Saharan Africa.

Queensland Fruit Fly / QFF (bottom image): Eastern Australia, New Caledonia and Austral Islands.



Fruit flies are capable of flying long distances (more than 50km). However, they normally don't disperse beyond 100-200m when host fruit is present.

Dispersal of larvae in host fruit is one of the greatest risks of long distance spread.



Medfly are smaller than a common housefly and very colourful with red and blue eyes, a brown head, and a yellowish abdomen with silver bands.



Ofly are noticeably larger than house flies with a body length of 8mm. Their colour is variable but there are yellow and dark brown markings on the body.



QFF are about 6-8mm long. The wings are mostly transparent, marked with brown and the body is reddish brown with yellow markings.

WHAT TO LOOK OUT FOR

The most significant production damage is inflicted on fruit by larval feeding and decomposition by invading secondary pathogens. Attacked mature fruit may develop a water soaked appearance; young fruit become distorted and usually drop. Infested fruit may show 'sting' marks on the skin.



Fruit fly larvae look like pieces of rice



PROTECT YOUR LIVELIHOOD

While New Zealand continues to be free of fruit fly, the threat remains high. Early detection and immediate response are essential to a successful eradication. Therefore, it is vital that as an industry we are aware of the risk and continue to support the work to keep it out, and can detect and control in the case of an incursion.

KEEP IT OUT

- Regulations on commercial produce imports.
- Accreditation schemes for cruise ship passengers.
- Border interventions.
- Targeting fruit on air passengers.
- Awareness campaigns for travellers.



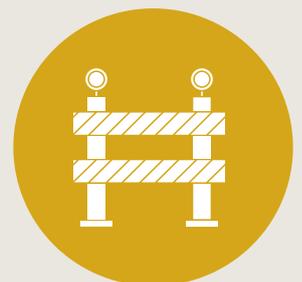
DETECT IT

- Trapping network of almost 8000 traps.
- Network targets three main flies but can detect over 80 species.
- Identification of suspect finds.
- Investigation where a fly is detected results in a Level 1 response.
- Additional traps deployed to determine if others are present, and the extent of their spread.



RESPOND

- Controlled Area Notices.
- Movement restrictions.
- Detection of a breeding population results in a Level 2 response.
- Additional eradication measures implemented.
- Export Restriction Zones.
- Baiting of host plant material.



MAINTAIN BUSINESS CONTINUITY

- Maintaining supply of fruit within the restrictions of the response (Zespri).
- Supporting growers impacted by the response (NZKGI).
- Organism management (Biosecurity New Zealand and KVH under GIA).
- Communications (Biosecurity New Zealand and KVH under GIA).





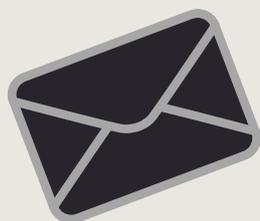
KEEP IT OUT

As trade and tourism increase, and global supply chains become more complex, New Zealand is being exposed to ever greater risk from pests such as the QFF.

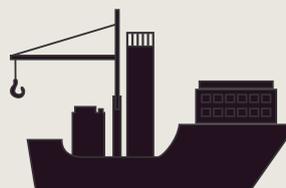
Prevention of fruit fly establishing is our first line of defence. Biosecurity New Zealand has a range of interventions at our borders to prevent fruit fly entering. All of these are designed to protect our industry and the markets.

Specific actions taken to prevent potential incursions include Import Health Standard requirements specifically for the management of fruit fly, border checks for mail and air passengers, and cruise vessel accreditation to ensure the fresh produce pathway is sufficiently managed.

More than 2.5 million mail items are screened every month by frontline Biosecurity staff



7.5 million international passenger arrivals into New Zealand every year

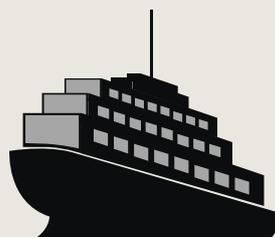


Over 60,000 import consignments are inspected by Biosecurity New Zealand annually

64 detector dog teams (dog and handler) protecting New Zealand borders



A 2019 survey found a 98.95% compliance rate for passengers entering New Zealand



96% of cruise vessels have signed up to an accreditation scheme that manages the risk of fresh produce onboard



Our trade and tourism values mean that despite Biosecurity New Zealand's efforts at the border it is inevitable that some fruit will pass undetected, and some of this could contain fruit fly larvae. Therefore we need a post-border surveillance network, to help and detect any that have slipped past.



We also have a well established surveillance programme targeting the early detection of fruit fly should it arrive, giving us the best chance at eradication. This national surveillance network consists of almost 8000 pheromone traps, using three different lures to ensure our main risk species (Medfly, Ofly, and QFF), as well as at least 80 other lesser known species, can all be detected. The traps are checked every two weeks and placed in grids throughout New Zealand, including in kiwifruit growing regions.

DETECT

1 LEVEL 1: When a trap detects a fly

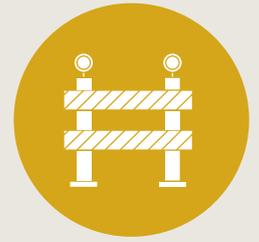
- Industry is notified immediately through the Government Industry Agreements (GIA) partnership.
- Industry will impose an immediate STOP notice for the area to stop any fruit movement for 48 hours to ensure the risk of transmission is minimised while control areas are being established.
- Movement controls are established to prevent spread. Exact size and boundaries of zones could vary depending on whether the detection is in an urban or production area. They are defined by Biosecurity New Zealand and at a minimum are likely to be:
 - A Zone - 200m radius from detection
 - B Zone - 1.5km radius from detection
- Increased surveillance trapping out to 1.5km from the detection.
- Fruit monitoring for larvae.
- Communication to all affected stakeholders and public.

Fruit fly controlled areas

- Restrictions placed on those properties within the various zones are vital to understand risk, reduce spread and have the best chance at eradication.
- Biosecurity New Zealand will be responsible for communicating with owners within the controlled area. Typically, A Zone properties will be visited and surveyed within the first 48 hours. Leaflets are dropped at all properties within the B Zone.
- All fruit on the ground in A Zone will be collected and examined for larvae. Refer to the Business Continuity page for more information about restrictions on fruit movements.
- Signage will be erected in both zones within the first 48 hours notifying the requirements on movement between areas.
- Your location within these zones will dictate restrictions you will face during the response.



RESPONSE



2 LEVEL 2: When there are eggs or larvae, a mated female fly, or other evidence to suggest a breeding population

- All **1** activities continue.
- Organism management begins including; tracing, baiting, ground and cover spraying, and fruit collection.
- Tracing of host material movement (backwards and forwards) helps understand spread and trap placement.
- Baiting begins. This consists of a protein mixture to attract the flies that is laced with an insecticide to kill flies, particularly females.
- Ground/foliar treatments involve an approved insecticide on the leaves on the ground under host trees in the fruit drop zone.
- Any fruit in the A Zone plus any fruit grown in the B Zone cannot leave the Controlled Area. Management of potentially large volumes of fruit for destruction will happen with Biosecurity New Zealand and councils.
- Export Restriction Zones (ERZ) may be put in place by markets, with varying sizes and requirements.

Export Restriction Zones (ERZ)

- A level 2 response will typically result in some countries not accepting fruit grown, packed or stored in an ERZ and placing restrictions on the movement of fruit from within a certain proximity to the response.
- These restrictions, or ERZs, vary in size and the requirements within them are subject to discussions between Biosecurity New Zealand and the importing country.
- The size of ERZs, and number of countries that require an ERZ may change depending on locations of any new fruit detections and will be confirmed by Biosecurity New Zealand during a response.
- Often, Biosecurity New Zealand will impose a voluntary ERZ, normally 3.2km around the response, and associated conditions, but some countries may determine to have a larger zone of restriction.



Fruit fly traps



Controlled area signage



Baiting within response zones



MAINTAINING BUSINESS CONTINUITY



Under the Biosecurity Act, compensation may be available to growers or businesses within the Controlled Area who suffer losses as a result of the response, provided specific conditions are met - including losses being verifiable and taking reasonable steps to mitigate any ongoing losses.

WHAT HAPPENS IF I GROW IN THE A ZONE?

The focus in this area will be on preventing spread and enabling eradication.

What happens to my fruit?

Level 1:

Host produce must not be moved off the property

Level 2:

Host produce must not be moved off the property

What activities will take place on my orchard?

Level 1:

Notify local growers and visit affected properties

At least one trap per property, checked daily for the first week, then at regular intervals

Fruit sample collection from property to check for larvae

Level 2:

Bait application twice during the first week, then weekly intervals

Ground/foliar spraying

Fruit collection (weekly) and destruction of wind fall fruit.

Destruction off-orchard, under Biosecurity New Zealand supervision

WHAT HAPPENS IF I GROW IN THE B ZONE?

The focus in this area will be delimiting and preventing further spread.

What happens to my fruit?

Level 1:

Host produce cannot leave the B Zone. Commercially produced and purchased fruit can enter and leave

Level 2:

Host produce cannot leave the B Zone. Commercially produced and purchased fruit can enter and leave

What activities will take place on my orchard?

Level 1:

Public awareness

Enhanced trapping, checked at regular intervals

Flier drops to affected properties

Level 2:

Property surveillance visits

Enhanced trapping, checked at regular intervals

Baiting, repeated weekly

Keep records.
This will assist with any compensation claims

Notify all workers and orchard visitors of all restrictions



MAINTAINING BUSINESS CONTINUITY



Orchards that are located outside of a Controlled Area but within Export Restriction Zones (ERZ) will be guided by their post-harvest operator about what can be done with fruit still to be harvested. ERZs are imposed by importing countries so this means that any fruit grown in a country's ERZ cannot be exported to that country.

WHAT HAPPENS IF I AM A GROWER IN AN ERZ?

If your fruit is still to be harvested your post-harvest operator will work with you to determine the best timing of harvest and where your fruit should be packed. In some cases, it may not be appropriate for your fruit to be packed by your normal pack-house if the pack-house is located outside of the ERZ. The pack-house will also advise of any pest proofing that might need to be applied to the fruit before transport.

WHAT HAPPENS TO MY FRUIT?

Zespri will apply a market restriction to your fruit so it is not exported to the country that has required the ERZ. Zespri will then endeavour to export your fruit to other markets that do not have a fruit fly export restriction.

WHAT ACTIVITIES WILL TAKE PLACE ON MY ORCHARD?

While your orchard remains in an ERZ there may be some surveillance trapping undertaken but there will be no organism management activities such as baiting and spraying undertaken. You also do not need to undertake any spraying. Normal orchard practices and routines can be undertaken in consultation with your post-harvest operator.

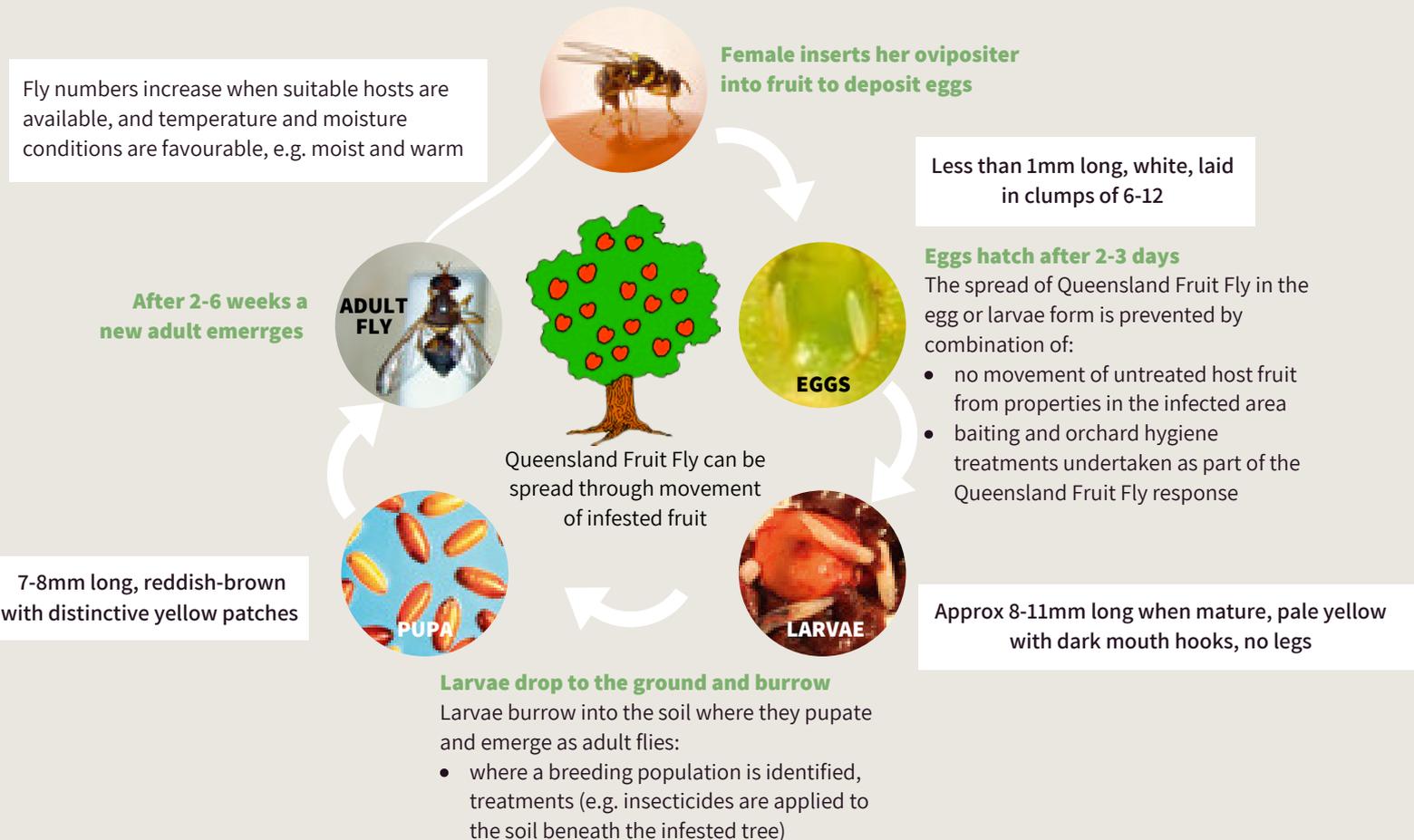
Keep records.
This will assist
with any
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Notify all
workers and
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LIFE CYCLE OF THE QUEENSLAND FRUIT FLY

The lifecycle of the Queensland Fruit Fly / QFF includes four key stages - the egg, maggot (larvae), pupa and adult fly. The life cycle lasts about three weeks in the summer. Adults can live for up to three months.



For further information contact KVH:
25 Miro Street
Mount Maunganui
0800 665 825
info@kvh.org.nz
www.kvh.org.nz/fruitflies

To report a suspect fruit fly find or larvae in fruit, contact the Biosecurity New Zealand pest and disease hotline on 0800 80 99 66.

