Harcourt Valley

QUEENSLAND FRUIT FLY EMERGENCY OUTBREAK PLAN

Funded by the Department of Jobs, Precincts and Regions (DJPR), Victorian State Government
Prepared for: Harcourt Valley Fruit Fly Action Group
Prepared by: Ecologica
Final Version V1: October 28, 2019

Objective

This Emergency Outbreak Plan (EOP) is designed to manage Queensland Fruit Fly (QFF) outbreaks in residential backyards, small-scale self-sufficient farms, schools, community gardens and small horticultural enterprises that do not have their own QFF monitoring and Integrated Pest Management plans.

Developed for the Harcourt Valley, this Plan is also transferable to other towns and areas across the Mount Alexander Shire, for use by individual residents/landholders and community groups.

QFF would be devastating to Harcourt's vital horticultural industry, tourism sector and local identity, plus at the backyard or schoolyard level. It's already established in the City of Greater Bendigo. We can expect it will be brought into our Shire in the future. But if we are ready, informed and aware, we can prevent it from establishing here.

The EOP has been informed by:

- Harcourt Valley Fruit Fly Regional Action Plan 2018-2019
- "Fruit Fly Best Practice Notes" from the Grow Great Fruit Program, Mount Alexander Fruit Gardens
- Yarra Valley Queensland Fruit Fly Task Force
- "Fruit Fly Management for Vegetable Growers", Jenny Ekman, Applied Horticultural Research (AHR), Horticulture Innovation Australia (HIA).
- Harcourt Valley Fruit Fly Action Group
- Bronwyn Koll, Queensland Fruit Fly Regional Coordinator (Yarra Valley), Agribusiness Yarra Valley
- Andrew Jessup, Horticultural Entomologist, Janren Consulting
- Jane Ryan, Senior Project Officer, Agriculture Victoria, Department of Jobs, Precincts and Regions

Terry Willis, Harcourt Valley Landcare Group, has been the key instigator and driver for this Plan and the community-driven focus of it.

Summary of Plan

Action	Who
Confirm Identity (Steps 1 - 4)	
Clean and Destroy (Step 5)	
Alert (Steps 6 - 7)	
Monitor (Step 8 - 9)	
Eradicate and Exclude (Steps 9 - 10)	
Review (Step 11)	

Who Does What?

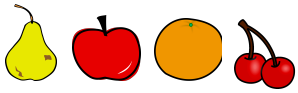
You/resident/landholder

Harcourt Valley Fruit Fly Action Group (HVFF)

Mount Alexander Shire (MAS)

Agriculture Victoria

SUSPECT FRUIT FLY? HERE'S WHAT TO DO NEXT:

1. Confirm The Identity: make sure it is a Queensland fruit fly 

QFF "Season" is usually September through to late April in Central Victoria. ***BUT*** if warm weather persists and host fruit and vegetable sources are around, flies can continue their lifecycle beyond this period. Adult QFFs can also survive the cold months by 'over-wintering' in sheltered places.

Two handy websites for identification are: https://fruitflyidentification.org.au/ and http://agriculture.vic.gov-.au/agriculture/pests-diseases-and-weeds/pest-insects-and-mites/queensland-fruit-fly.

Adult Queensland Fruit Fly (Image James Niland)

Adult Female Queensland Fruit Fly (Image Agriculture Victoria)

The adult fly is 5mm to 7mm long. Also look for telltale signs of damage to fruit and soft vegetables:

L-R: Sting damage to fruit - apples and quinces (image Yarra Valley Queensland Fruit Fly Task Force), tomato (Image Rob Bob's Backyard Farm and Aquaponics), Capsicum (image Applied Horticultural Research)

L-R: Fruit Fly Larvae in stone fruit (image Applied Horticultural Research) showing damage, Close-up of Fruit Fly Larvae; note the black tips at the ends (image Agriculture Victoria), Fruit Fly Pupae (image Applied Horticultural Research)

2. Take a photo and post it to these local Facebook sites for ID:

- *Bendigo Region Fruit Fly* - https://www.facebook.com/groups/Bendigoregionfruitfly/
- *Mount Alexander Fruit Fly* - https://www.facebook.com/groups/836411166567562/

There are a number of insects that can be confused with Queensland Fruit Fly. A photo can quickly indicate if further investigation is required.

3. Collect a sample of affected fruit , or a fly:

If you have a suspect fly, lightly/loosely wrap some cotton wool around the body and place it in a clear plastic tube or container. If you are posting, then wrap the container in bubble wrap. If you have suspect larvae, place the affected fruit and larvae into a snaplock bag (make sure there some air left in the bag when you seal it) and then into a sealed plastic takeaway container, or similar. Wrap the container in bubble wrap if you are posting it.

Make sure you provide your contact details and a note about what the sample is and where it came from (address found at, what food found in, whether it was homegrown or purchased, point of purchase, date collected).

Consult with your QFF Coordinator on where to take or post the sample.

For the Harcourt Valley area, contact:

Terry Willis
EOP Coordinator
Harcourt Valley Fruit Fly Action Group
harcourtfruitfly@gmail.com
Harcourt Valley Landcare Facebook page

4. The QFF Outbreak Team/Coordinator will work with Agriculture Victoria to determine if the sample is Queensland Fruit Fly:

Agriculture Victoria has a user pays service to identify QFF. This costs over $300 (2019 figure). If QFF has been formally identified in your area before, and you can see evidence of fruit damage, it is best to commence treatment for an outbreak.

5. Clean and Destroy - affected fruit and plants:

Boil, microwave or freeze affected fruit and host produce (refer to Council website for specific times and methods) and then place in the rubbish bin for garbage collection. Alternatively, place in a black garbage bag, seal and leave in the full sun for several days - at least 7 days in spring and autumn and 5 days in summer - to solarise the fruit, then place in rubbish bin for pickup. DO NOT compost or place in green waste. Collect all fallen fruit and place in garbage colection in sealed plastic bags.

This procedure should be followed whether it's homegrown produce from your garden, purchased or brought in to the house from other places.

6. Alert HVFF, Ag Vic/DJPR (Department of Jobs, Precincts and Regions), Council of suspected outbreak:

Harcourt Valley Fruit Fly Action Group
Terry Willis, EOP Program Manager
harcourtfruitfly@gmail.com

Ag Victoria/DJPR (Department of Jobs, Precincts and Regions)
Call 136 186 and you will be directed to the appropriate person

Mount Alexander Shire
Tracey Watson, Public & Environmental Health
T: 5471 1769 | M: 0428 594 154
tracey.watson@mountalexander.vic.gov.au

Harcourt District Fruitgrowers Association/major commercial orchards nearby

7. Alert neighbouring landholders and the wider community:

Let your immediate neighbours know.

Carry out a letterbox drop/direct mail-out to all residents and landholders within 1.5km of the outbreak. to inform of next steps - (see Appendix A).

Post information on local noticeboards, through social media (Harcourt Valley Landcare Facebook page and other local sites, local "The Core" newsletter, school newsletter

Post alert and update on Council website.

Hold neighbourhood/community meeting in the Harcourt Valley area- provide update, gather volunteer forces, outline and plan data collection, placement of fruit fly monitoring traps. Reiterate importance of hygiene and monitoring. Encourage residents to purchase their own traps and assist with monitoring. Provide options for control, exclusion, fruit removal.

8. Collect QFF Outbreak Kits:

The Outbreak Kit contains:

- 20 Biotrap male monitoring traps and lures, spare lures
- 10 Biotrap female gel protein bait traps
- garbage bags to collect fallen and damaged fruit for destruction
- sample jars, pens, labels, permanent markers (to label traps)
- 50 pro forma letters for letter box drop to residents and landholders (see Appendix A)
- 50 QFF info brochures
- monitoring sheets/maps (MAS to provide USB with area/town maps able to be printed)
- gloves

- Material Safety Data Sheets (MSDS) for relevant chemicals/treatments (see Appendix C)
- USB containing EOP, Action Plan and other relevant documents, including past outbreak/incursion details and maps

Collection Point:
Mount Alexander Shire Council
Civic Centre, Cnr Lloyd and Lyttleton Streets
Castlemaine, 3450

9. Monitor - to see if male flies are present, increasing or decreasing

Set up data gathering/monitoring system and appoint Monitoring Coordinator. (Appendix B).

After ensuring landholder/resident approval for access, install male monitoring traps in grid at 100-200m spacing. Include site of suspect outbreak.

***** Include high risk areas and crop perimeters- tree lines, trees along creek lines or dam edges and damp areas. (Google Earth can be useful to identify prime locations for male lures).

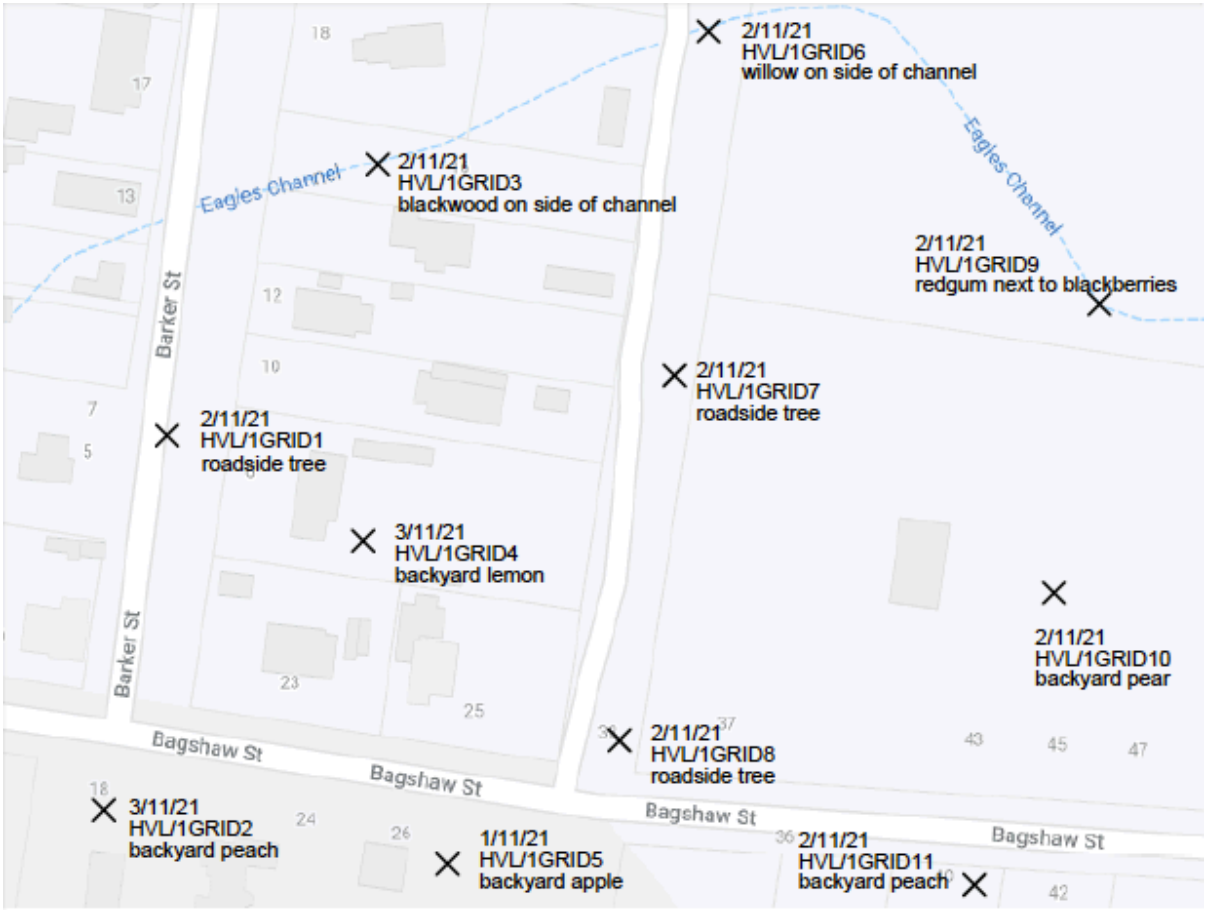
***** Consider extra traps in abandoned orchards or unmanaged backyard trees. Take into account temperature - place in warm spots in early spring - on the eastern side of trees, etc. and in sheltered, cool spots over late spring and summer - choose southern aspects. Hang traps at least 1.5m from the ground.

More specific guidance on monitor trap placement may be required. If so, contact HVLFF Coordinator, or Colin Bain, Biotrap Australia - 0437 455 409.

Mark placement of traps on map - label with trap number and location and date laid: Consider using GPS coordinates via your smartphone to aid in mapping.

Landholders/households to check traps weekly and contact HVFF Monitoring Coordinator with results (text, phone or email) quoting trap code and the result, eg. “HVL/1GRID14, all clear” or “HVL/1GRID 21, 2 flies”

Check traps in public or roadside areas and report to HVFF Monitoring Coordinator.



Provide community /neighbourhood update after four weeks of monitoring. Reiterate importance of hygiene and monitoring. Encourage residents to purchase their own traps and assist with monitoring. Suggest regular checking of fruit for sting marks and larvae/eggs. Provide options for control, exclusion, fruit removal.

Post update on Council website as above.

10. Eradicate and Exclude - both male and female flies

If one male fly is found in a two week period, initiate a baiting and trap control program within 1.5km of the identified trap.

The most proven, effective eradication strategy is to use both baiting and male traps. A number of products are available. For more information and support on baiting and trapping contact HVFF.

The onus is on you to ensure that any chemical - and organic -treatment is registered for use against QFF and that you follow the label. The APVMA has up to date information: https://portal.apvma.gov.au/home.

NOTE: Eradication on roadsides/public land will be the responsibility of Council.

Bait.

To kill both male and female flies use a protein bait every seven days. Bait contains liquid protein and an insecticide. Spray baits 1.5m to 2m above the ground. Spray early in morning to minimise harm to bees and other beneficial pollinators. Baits are most effective when young female flies are emerging, two weeks after hatching. Use large droplets and a low pressure spray; the bait should stick to the foliage or trunk, not run off. Record details and wear protective gear. Take care when using chemicals - refer to the product MSD sheets and follow the label for how much to apply per tree or per hectare. Reapply if 5mm or more rain falls. Continue baiting for two weeks after crop harvesting.

***** For certified organic enterprises and where landholders/residents prefer a lower toxicity option, derived from soil bacteria (spinosad), is available. Follow the label.

Trap.

Male Trapping - Male traps use a pheromone or scent attractant and either chemical or organic insecticide to kill or drown them. Install traps at a tighter spacing than for monitoring, eg. every 20m where male flies tend to gather - in moist, shady areas and tree canopies. Replace after 3-4 months. (Note. Male trapping can affect the monitoring results and suggest a decrease in populations when females are actually increasing. Place traps at intervals suggested by the manufacturer).

***** For certified organic enterprises and where landholders/residents prefer a lower toxicity option a 'wet trap' based on essential oils is available to attract the male flies and they either drown or dehydrate. Traps need to be recharged as soon as the liquid evaporates, especially in hot weather.

Female Trapping - Less effective than male trapping, female traps are food, not pheromone, based. They use a food/protein attractant and an insecticide and need to be kept refilled. Set them near sources of protein, eg compost heaps, chook yards, and soft fruit sources, at closer spacing than for the male traps, eg. every 4-5m. (Note. Place traps at intervals suggested by the manufacturer).

***** For certified organic enterprises and where landholders/residents prefer a lower toxicity option, organic traps are available - the females drown in the protein syrup - placement and replenishment are crucial for them to work. These traps will also attract male fruit flies.

Exlude.

Use netting, fruit bags and other exclusion measures to prevent female fruit flies from accessing the fruit and laying eggs. Consider wildlife friendly netting. White coloured shade cloth or other coverings with fine mesh can also be effective.

Remove.

Remove and destroy all fallen, stung and damaged fruit by boiling, solarising, microwaving or freezing. Remove annual plants that are affected (eg tomatoes, capsicums). Consider removal of abandoned or unmanaged host trees.

Provide community /neighbourhood update after 12 weeks of eradication program. Reiterate importance of hygiene and monitoring. Encourage residents to purchase their own traps and assist with monitoring.

Continue eradication program until monitoring traps are clear.

11.Review Program with landholders/residents, HVFF Team, Council:

Hold debrief with HVFF Outbreak Team, seek feedback from landholders/residents and Council on successes, failures and major issues and practicalities of EOP. Make changes to EOP where necessary.

Review role and effectiveness of Council website, potential of adaption of EOP for other areas of the Shire.

Restock outbreak kits, plan locations for monitoring traps next season.

OTHER USEFUL INFORMATION:

Contacts

Mount Alexander Shire
Tracey Watson,
Public & Environmental Health
T: 5471 1769 | M: 0428 594 154
tracey.watson@mountalexander.vic.gov.au

Ag Victoria/DJPR (Department of Jobs, Precincts and Regions)
Call 136 186 and you will be directed to the appropriate person

Harcourt Valley Fruit Fly Action Group
Terry Willis
harcourtfruitfly@gmail.com

Agribusiness Yarra Valley
Bronwyn Koll
Queensland Fruit Fly Regional Coordinator (Yarra Valley)
0490 381 999
qff@agribusiness-yarravalley.com

References

- Fruit Fly Management for Vegetable Growers, Jenny Ekman, Applied Horticultural Research (AHR), Horticulture Innovation Australia (HIA).
- Mount Alexander Shire - Queensland Fruit Fly in Home Gardens - videos featuring Ernie the Queensland Fruit Fly: https://www.mountalexander.vic.gov.au/FruitFly
- Plant Health Australia - Prevent Fruit Fly Website: http://preventfruitfly.com.au
- Organic control in home gardens: https://youtu.be/DY7XCLL6t7U
- https://greenharvest.com.au/PestControlOrganic/FruitFlyControlProducts.html
- Video produced by the Australian Applied Horticultural Research Agency - https://www.youtube.-com/watch?v=hzZYhH5CC0Y&feature=youtu.be.
- https://bugsforbugs.com.au/whats-your-pest/fruit-flies/
- https://ecoorganicgarden.com.au/products/pest-disease/eco-lure-male-queensland-fruit-fly-trap/
- Harcourt Valley fruit Fly Regional Action Plan 2018-2019
- “Fruit Fly Best Practice Notes” from the Grow Great Fruit Program, Mount Alexander Fruit Gardens
- Area Wide Management -https://area-wide-management.com.au

Mount Alexander Shire dedicated QFF website address:
https://www.mountalexander.vic.gov.au/FruitFly

Other local resources:

Where to buy a trap, lures, baits and exclusion nets in Castlemaine and On-Line:

Mt Alexander Timber and Hardware
125 Main Road Campbells Creek
Phone: 03 5472 1270
Stock: male traps and lures/wicks, bait spray, organic bait traps and liquid refills.

Rodeslisa Plant Supplies,
4 Midland Highway Castlemaine
Phone: 03 5470 6527
Stock: organic bait traps and liquid refills.

Home Hardware Hardware
185 Barker St Castlemaine
Phone: 03 5472 1922
Stock: organic bait traps, male organic attractant bait, male traps

ASQ Skydancers
Cnr Blackjack Rd and, Midland Hwy, Harcourt
Phone: 03 5474 3800
Stock: male traps and lures/wicks, replacement wicks, exclusion netting

Greenharvest (Qld)
https://greenharvest.com.au/PestControlOrganic/FruitFlyControlProducts.html
Stock: Exclusion netting, exclusion bags and sleeves, organic bait traps and refills, organic protein bait, male traps and lures/wicks, replacement wicks, male organic attractant bait.

Biotrap Australia
http://www.biotrap.com.au
0437 455 409; sales@biotrap.com.au
Stock: a range of male and female traps and baits.

OCP - Organic Crop Protectants
https://ecoorganicgarden.com.au/product-category/pest-disease/
1800 634 204; ecoorganicgarden@ocp.com.au

Stock: male traps and lures/wicks, replacement wicks, organic protein bait

Bugs for Bugs
https://bugsforbugs.com.au/whats-your-pest/fruit-flies/
(07) 4646 2628, info@bugsforbugs.com.au
Stock: male traps, lures,lures, wicks and baits, organic protein bait

JujubeRedDate
https://jujubereddate.com/fruit-fly%2Fbird-protection
0418929237; jujubereddate@outlook.com
Stock: Exclusion netting

**NOTE - This is not an exhaustive list of suppliers - there are also a number of home made traps that can be found by searching on-line. Details are correct at the time of printing.

APPENDICES:

A Resident/Landholder Alert Letter (2019)

IF TASMANIA CAN BEAT FRUIT FLY, SO CAN HARCOURT!

By now you've probably heard that we've had a confirmed case of Queensland Fruit Fly (QFF) in Harcourt.

Last year the Harcourt Valley Landcare Group set up a Fruit Fly Action Group and got a small Victorian government grant to write an action plan in preparation for this day —we were just hoping it wouldn't come for many years (or ever!)

It's a sad day, but hopefully not a life sentence. Our small volunteer group has a plan in place, but we need YOUR help. We're determined to contain this outbreak—if Tasmania can do it, so can Harcourt!

If everyone gets informed, together we can protect our vital horticultural industry (so important for jobs, tourism and the identity of Harcourt), and also protect the lifestyle we all love and value of being able to grow fruit & veg in our backyards.

Unfortunately Harcourt isn't eligible for ongoing Victorian government funding to fight fruit fly, and this is how our situation is different to Tassie—in Harcourt, it's up to us, the government's not going to save us.

Our group is made up of community volunteers, under Harcourt Valley Landcare, with no budget for this project. We're now putting in place an Emergency Action Response. Here's what's happened so far:

- 15 male QFF monitoring traps have been put out in a grid around the outbreak, and there's still have another 5 to put up (Mt Alexander Shire Council has helped by purchasing these traps). There's been nothing found in the traps, and no new reported cases. **A big thanks to all the residents that have allowed us to install traps**—you are helping all of the community by your actions and ongoing monitoring.
- We've set up a database of traps, including the grid we're establishing, traps in commercial orchards and other traps in the community.
- We're writing articles, speaking to the media and trying to get the word out to the community as much as possible.
- We're seeking corporate partners and funding from a variety of sources to give us a "fighting fund".

Here's what YOU can do to help:

1. If you have fruit trees or are growing vegies in your garden, please take responsibility for your own monitoring and put out a trap. We don't get any government funding for this, so it's up to us. **Get in touch if you want to know what sort of traps you should use.**
2. Please **let us know** at harcourtfruitfly@gmail.com:
    - when you put out a trap (or if you already have one) as we're collecting data from all the traps in Harcourt;

- the results of your monitoring, especially if you find suspected larvae or QFF in traps.

3. Have a plan in place for what you'll do if you find QFF. Please get in touch if you want help with writing your plan. Here's some things to think about:
   - QFF pupae can stay in the soil for up to 90 days waiting for the ideal time to emerge. If we get some coming out in the next couple of weeks, they'll be the adults that will overwinter, because if they stay in the ground they die from the cold. If we can catch them now we can prevent them hanging around to re-infect fruit next season;
   - Rain events can trigger them to emerge. If this happens you'll see them in traps about 10 days later;
   - Doing the right thing with infected fruit and tree hygiene is critical to stop this from spreading—boil, solarise (double plastic bagged and left in the sun) or freeze fruit with maggots/larvae in them. Then put in rubbish bin not your compost;
   - Strip trees of fruit not eaten and pick up off ground.
4. Donate to the "fighting fund" under Harcourt Valley Landcare (specify that your donation is for the Fruit Fly Action Group). This will be used for workshops, more traps, possibly spraying if required, and being able to plan a proper response in the event of a bigger outbreak. Even small amounts will help.
5. Don't share infected fruit, bring fruit home from known QFF infected areas, or let anyone else bring it here—ask your friendly tradie from Bendigo who's doing work for you about any fruit they're eating.
6. Talk to your friends and neighbours about the issue to help spread information—ask them whether they've put out a trap.

What would it mean for the people of Harcourt if QFF lived here permanently?

- less fruit and veggies for backyard growers to eat;
- increased cost of buying fruit fly netting for trees and traps;
- removal costs of trees that are prone to fruit fly, like stone fruits;
- mental health and stress that comes with fruit fly (just ask the people in Bendigo).

We don't want QFF in Harcourt. Once established in towns it's nearly impossible to get rid of, so now is our window of opportunity to make sure it doesn't settle in.

If you want to join our group or get more information please get in touch at harcourtfruitfly@gmail.com.

Thanks for your ongoing support.

B - Data Collection Monitoring Sheet and Letter for Trap Holders

HARCOURT OUTBREAK FRUIT FLY MONITORING GRID 1 - MARCH 2019

Thanks for helping your community by letting us put a male fruit fly monitoring trap on your property.

20 traps have been placed in a grid (100m apart) on private properties and road sides in your area. These traps are to help us get a snap shot of where the fruit fly activity is.

The trap is a Lynfield BioTrap with a male fruit fly attractant and insecticide wick inside. They will attract only male fruit fly and kill them. Sometimes you may find other insects like earwigs, beetles and cockroaches - but in my experience the amount of non-target insects is very minimal. This *traps will stay active for 6 months* and you can keep them for future use.

What we need you to do is to **report weekly via email or text our fruit fly monitoring coordinator**, Judy Hutchins. You would **quote the trap code and the result**.

For example: HVL/1GRID14, all clear.

But I encourage you to check regularly. **IF YOU SEE ANYTHING THAT LOOKS LIKE A FRUIT FLY - CALL JUDY AND TERRY STRAIGHT AWAY.**

Terry Willis 0403 898866 harcourtfruitfly@gmail.com

Judy Hutchins 0407 330186 judithhutchins@iinet.au

Your Trap/s

Date installed -

Type - Linfield BioTrap Male Monitoring Trap

Trap code - HVL/1GRID

Trap location -

C - MSDS for Outbreak Kits

MSDS

MATERIAL SAFETY DATA SHEET

FT CUELURE

1.1 PRODUCT IDENTIFICATION: FT Cuelure

1.2 PRODUCT USE: Insect Attractant

1.3 COMPANY: Bio-Trap Australia Pty. Ltd.
P.O. Box 725
Ocean Grove, VIC 3226

1.4 EMERGENCY TELEPHONE: 0437 455 409

2.0 HAZARD IDENTIFICATION: Risk Phrases (R) R36/37/38 – Irritating to eyes, respiratory system and Skin Xi.

3.0 COMPOSITION:

CHEMICAL NAME	OTHER NAMES	Approx. w/w%	Hazard	CAS	EC/EINECS
4-[4-(acetyloxy)phenyl]-2-butanone	Cuelure	95.0%	R36/37/38	3572-06-3	222-682-0
Other Ingredients		5.0%			

4.0 FIRST AID MEASURES:
CONTACT WITH SKIN
Wash hands thoroughly after handling liquid. If irritation occurs seek medical advice. (S28)

CONTACT WITH EYES
Rinse eyes with copious amounts of water for at least 15 minutes. If irritation occurs seek medical advice. (S26)

INGESTION
Rinse out mouth with water. Do not induce vomiting. If swallowed, seek medical advice immediately and show this container or label. (S46)

INHALATION
If adverse effects are felt, remove patient to fresh air. If symptoms persist seek medical advice. (S63)

OTHER INFORMATION
If further safety data is required, please contact Farma Tech International Corporation.

5.0 FIRE FIGHTING MEASURES:
In case of fire, use water, CO_2 or dry powder. Combustion products include carbon monoxide and carbon dioxide. Wear self contained breathing apparatus and protective clothing.

6.0 ACCIDENTAL RELEASE MEASURES:
Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, using the appropriate protective equipment. Remove all sources of ignition. Provide ventilation.

7.1HANDLING:
Do not open packaging until time of use. Wear suitable protective clothing, gloves and eye/face protection (S36/37/39). Do not eat, drink or smoke when handling the product (S20/21).

7.2STORAGE:
Keep only in original packaging in a cool, dry, well ventilated place (S3/9/49). Store away from heat and out of direct sunlight. Avoid moisture. Keep out of the reach of children (S2).

8.1EXPOSURE LIMITS:
No exposure limits are defined. Avoid skin and eye contact, ingestion and inhalation of vapor.

8.2.1OCCUPATIONAL EXPOSURE CONTROLS:
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Skin: Wear appropriate protective gloves to prevent skin exposure. Clothing: Wear appropriate protective clothing to prevent skin exposure.

8.2.2ENVIRONMENTAL EXPOSURE CONTROLS:
Normal domestic and industrial practices apply. Avoid contamination of soil, water sources and sewers.

9.0PHYSICAL AND CHEMICAL PROPERTIES:
Appearance: Yellow clear liquid

Odor:	Fruity
Flash Point:	>100ºC
Solubility in water:	<1%

10.1CONDITIONS TO AVOID:
Stable under normal temperature and pressure conditions.

10.2 MATERIALS TO AVOID:
Strong acids, strong oxidizing agents.

10.3 HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon monoxide, carbon dioxide.

11.0 TOXICOLOGICAL INFORMATION:
Cuelure: 3038 mg/kg oral-rat LD_{50}; >2800mg/m3 inhalation-rat LC_{50};

12.0 ECOLOGICAL INFORMATION:
Avoid contamination of soil, water sources and sewers.

13.0 DISPOSAL CONSIDERATIONS:
Liquid should be collected and disposed of in accordance with local, state or national legislation

14.0 TRANSPORT REGULATIONS:

ROAD:	Not classified as dangerous
SEA:	Not classified as dangerous
AIR:	Not classified as dangerous

15.0 REGULATORY INFORMATION:
DANGER/HAZARD SYMBOL:

Xi - Irritant

EC RISK AND SAFETY PHRASES:

R36/37/38	Irritating to eyes, respiratory system and skin
S2	Keep out of the reach of children
S20/21	Do not eat, drink or smoke when handling the product
S28	Wash hands thoroughly after handling
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S38	In case of insufficient ventilation wear suitable respiratory equipment

16.0 OTHER INFORMATION:
If further safety data is required, please contact Farma Tech International Corporation.

NOTICE: Information for this product is believed to be reliable, however buyer and user assume all risk of use, handling and storage whether in accordance with directions or not. Biotrap Australia Pty Ltd and its agents give no guarantee or warranty of any kind express or implied concerning the use of this product and will not accept any responsibility whatsoever whether in contract or tort for any loss including consequential loss arising out of the use of this product or caused by this product.

Updated: Nov 2015

BIO-TRAP AUSTRALIA PTY LTD,
ABN: 727 9781 6610
PO BOX 725,
OCEAN GROVE,
VICTORIA 3226

MATERIAL SAFETY DATA SHEET (MSDS)

PRODUCT NAME: BIOTRAP FRUIT FLY ATTRACTANT GEL

PHONE: (03) 5255 3658
EMERGENCY AFTER HOURS NUMBER: 04370455409_

IDENTIFICATION

OTHER NAMES: Nil
USE: Fruit Fly Lure
UN NUMBER: N/A
HAZCHEM CODE: N/A
DANGEROUS GOODS CLASS: N/A
SUB CLASS: N/A
POISONS SCHEDULE: N/A
PHYSICAL DESCRIPTION/PROPERTIES
APPEARANCE: Off-white to light brown gel with characteristic protein/ammonia odour
FLASHPOINT (^{0}C): N/A
BOILING POINT (^{0}C): 100
FLAMMABILITY LIMITS (%): N/A
VAPOUR PRESSURE (___): N/A
SOLUBILITY IN WATER (g/L): Highly soluble
SPECIFIC GRAVITY: 1.12 g/L

INGREDIENTS CHEMICAL ENTITY	CAS NO	PROPORTION
Hydrolyzed Proteins	N/A	96%
Xanthan Gum (food grade)	N/A	2 % W/W
Ammonium Hydroxide	1336-21-6	1.5

HEALTH HAZARD INFORMATION

HEALTH EFFECTS
ACUTE:
SWALLOWED: Unlikely to cause any health effects.
EYES: Moderate eye irritant.
SKIN: No significant skin irritation.
INHALED: Inhalation of product for prolonged periods could cause some irritation.
CHRONIC: Not known
FIRST AID :
Eyes: May irritate eyes
Skin: May irritate skin in some instances and in some individuals from prolonged exposure. Under normal use conditions this is not expected.

Ingestion: Unlikely to cause any health effects.
SWALLOWED: If swallowed induce vomiting immediately by giving two glasses of water and touching back of throat with finger. Never give anything to an unconscious person. Contact a physician immediately.
ADVICE TO DOCTOR: Treat symptomatically

EXPOSURE STANDARDS: Good ventilation is sufficient for use of this product.

ENGINEERING CONTROLS: Ventilation is recommended but no TLV established.

RESPIRATION PROTECTION: Not required

SKIN PROTECTION:
Do not reuse contaminated clothing until it has been laundered properly. Always wash hands, face and arms with soap and water after using and before smoking, eating, drinking, and going to toilet. Shower after work each day.

EYE PROTECTION: Eye protection is not needed for ordinary use of this product.

FLAMMABILITY: None established

HAZARDOUS COMBUSTION PRODUCTS: N/A

EXTINGUISHING MEDIA: N/A

FIRE FIGHTING INSTRUCTIONS: N/A

SAFE HANDLING INFORMATION

STORAGE AND TRANSPORT: Store in original unopened package until ready to use. Avoid areas of extreme heat and store away from children, food and foodstuffs.
SPILLS AND DISPOSAL:
GENERAL: Clean up spilled product immediately. Product that have been dropped should be picked up for reuse or disposal.

STABILITY AND REACTIVITY
CHEMICAL STABILITY: Stable under normal use and storage conditions

INCOMPATIBILITY: Strong acids, oxidizers and strong bases

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

HAZARDOUS POLYMERIZATION: This product will not polymerize.

TOXICOLOGICAL INFORMATION
Not classified as Hazardous by work safe Australia.

IRRITATION: Eye irritation: Irritant
Skin irritation Irritant
SENSITIZATION: Skin sensitization Possible sensitization

CARCINOGENICITY: No clear evidence.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: No data available.

ECOLOGICAL INFORMATION: No data available

TOXICOLOGICAL SYNERGISTIC PRODUCTS: No data available.

DISPOSAL CONSIDERATIONS
Do not contaminate lakes, streams, ponds, estuaries, oceans or other waters by discharge of waste effluents or equipment washwaters.

NOTICE: Information for this product is believed to be reliable, however buyer and user assume all risk of use, handling and storage whether in accordance with directions or not. Biotrap Australia Pty Ltd and its agents give no guarantee or warranty of any kind express or implied concerning the use of this product and will not accept any responsibility whatsoever whether in contract or tort for any loss including consequential loss arising out of the use of this product or caused by this product.

Updated: Nov 2015

October 2019

Ecologica
ecologica@bigpond.com
0439 003 469
PO Box 13, Newstead, Vic 3462