



# Fruit fly elimination program in stone fruit orchards

**Bait spraying is the most reliable and integrated pest management friendly way to reduce Queensland fruit fly numbers in a stone fruit orchard.**

**By suppressing the population in your orchard you also help suppress numbers across the whole district.**

### **What is a bait application?**

A bait for Queensland fruit fly (Qfly) contains a food attractant (protein) and a toxicant (insecticide). The bait mixture is applied as a low-volume spray onto tree foliage or bark. Queensland fruit flies are attracted by the protein in the bait. Insecticide mixed with the protein kills flies that feed on the protein. Using a bait, control is achieved with only a very small amount of insecticide, without applying any chemical to the fruit.

### **Why apply bait, when the orchard is already treated to control other insect pests?**

Pest management in stone fruit orchards focusses on strategically timed control of pests including aphids, earwigs, oriental fruit moth, carpophilus beetle, western flower thrips, two spotted mite and light brown apple moth. However, those treatments are not necessarily the best way to control Qfly, for the following reasons:

- Queensland fruit fly is active in stone fruit orchards from spring until after harvest, outside the optimum windows for treatment of most stone fruit pests.

- Not all cover sprays kill adult Qfly, or are registered for use to control Qfly. Always read and follow **Directions for Use** on product label.
- Even if a cover spray does kill adult Qfly that are active at the time of spraying, it is unlikely to kill larvae in fruit and will not persist to kill the next generation of Qfly. This is why bait spraying should be resumed within 7 – 14 days after applying a cover spray.

Make sure you continue the weekly Qfly bait spray program if the cover sprays you use in your orchard are not registered for control of Qfly.

Bait applications are compatible with integrated pest management because the bait does not attract beneficial insects.

### **How should bait be applied?**

Bait is applied to tree foliage or bark as a coarse spot spray or as a band spray. Apply the bait to trees in every second row. Do not allow the bait to contact fruit.

Bait is applied in very low spray volumes, varying between products from 6-20L/ha once mixed. Refer to labels for directions.

Some growers add gum to the bait mixture to help it persist longer in the orchard. If you are adding gum, dissolve the gum in water for 24 hours before adding it to the bait mixture.





## Active ingredients and trade names extracted from the Agricultural Pesticides and Veterinary Medicines Authority (APVMA) database in May 2020.

The list includes products that were registered, or permitted under permit, for control of Qfly in stone fruit in NSW and Victoria, in May 2020.

Chemical labels and the status of registration or permits can change. Refer to label **Direction for Use** for application rates and restrictions on use.

### 1. Bait – Spot spray or band spray weekly onto foliage or bark. Avoid contact with fruit.

PURPOSE	ACTIVE INGREDIENT	PRODUCT NAME	COMMENT
A food source in the bait mixture attracts Qfly	Protein	Fruition® Natflav® 500 yeast bait	Add insecticide
		Hym-Lure® Protein Bait	
		Bugs for Bugs Fruit Fly Lure Yeast Autolysate	
		Cera Bait® hydrolyzed protein	
An insecticide in the bait kills Qfly that feed on the protein or yeast	Chlorpyrifos	Lorsban 750 WG, Pyrigran (NSW and Qld)	Add protein attractant
	Maldison	Fyfanon® 440, Fyfanon® 1000, Hy Mal®	
	Trichlorfon	Lepidex® 500, Dipterex® 500, Tyranex® 500 SL Surefire Trepidex 500, AC Tripster500 SL	
Some bait products contain a food source and insecticide as a pre-mix	Protein + sugar + spinosad	Amgrow organix fruit fly control	This is a pre-mix of attractant and an organic insecticide
		Eco-naturalure® fruit fly bait concentrate	
	Fipronil plus yeast protein autolysate	Amulet Gel Insecticide	

### 2. Cover spraying – If fruit has sting marks, or numbers of flies in traps increase, a cover spray may be warranted. Follow the product label Directions for Use. Wet the canopy to run-off.

PURPOSE	ACTIVE INGREDIENT	PRODUCT NAME	COMMENT
Foliar cover spray	Acetamiprid & Novoluron	Cormoran Insecticide	Labels include directions for use for cover spraying
	Alpha-cypermethrin	Permit PER14875 allows use of alpha-cypermethrin as Fastac Duo® or Conquest Alpha Forte® 250 SC	Cormoran is moderately toxic to bees
	Clothianidin	Sumitomo Samurai® Systemic Insecticide	
	Etofenprox	Trebon Insecticide	Withholding periods must be sufficient to meet export and domestic maximum residue limit (MRL)
	Maldison	Fyfanon® 440 EW	
	Spinetoram	Permit PER12590 allows use of products containing 250 g/kg spinetoram for suppression only	
Foliar cover spray for removal of adult insects immediately prior to harvest	Trichlorfon	Lepidex® 500, Dipterex® 500, Tyranex® 500 SL, Surefire Trepidex 500, AC Tripster500 SL	Note that cherries are excluded from some labels
		Pyrethrins	

### 3. Post-harvest applications – Permit (PER13859) allows treatment of ground under the fruiting crop, or the foliage, after harvest.

PURPOSE	ACTIVE INGREDIENT	PRODUCT NAME	COMMENT
Apply as a foliar and/or ground cover spray to both fallen and retained fruit	Dimethoate	Permit PER13859 applies to registered products containing 400 g/L dimethoate as their only active constituent	DO NOT apply more than 2 applications after harvest. Re-entry periods apply

**Disclaimer:** Always read and follow the label before using any of the products mentioned. Off label use is not recommended. We do not guarantee that this publication is without flaw of any kind or is wholly appropriate for your particular purposes, and therefore disclaim all liability for any error, loss or other consequence which may arise from you relying on the any information in this publication.

# An example of integrating Qfly bait spraying into your pest management program.

	Dormancy	Bud swell	Flowering	Fruit set	Fruit development	Ripening	Harvest	Post harvest
Growth stage								
Pest	San Jose scale	European earwig	Peach aphid	Qfly	European earwig	Qfly	Qfly	Carpophilus beetle
Monitoring								
Qfly bait spray								
Cover spray								



## Install traps



Install monitoring traps in early spring and check them for flies each week.  
Refresh or replace traps as per label.



## Check traps for Qfly and check fruit for sting marks or larvae.



The adult Qfly is about 7 mm long and is reddish-brown in colour with distinct yellow markings.



Check traps weekly for Qfly. There are various traps available commercially.



Sting marks or wounds can be seen on the outside of fruit. The fruit also starts to rot.



Larvae are 1.5 to 9 mm long, creamy white in colour and eat the fruit.



## Qfly bait spray



Apply bait to the trunk or foliage. Avoid contact with fruit. Applying bait early in the morning when Qfly are likely to feed is most successful.



## Cover spray



Pest management in stone fruit orchards focusses on strategically timed controls of pests. However, not all cover sprays for other pests kill adult Qfly or are registered for use to control Qfly.  
Make sure you continue the weekly Qfly bait spray program if the cover sprays you use in your orchard are not registered for control of Qfly.

**For more information on incorporating bait spraying into your integrated pest management program visit [www.pestfreearea.com.au](http://www.pestfreearea.com.au)**

**Disclaimer:** Always read and follow the label before using any of the products mentioned. We do not guarantee that this publication is without flaw of any kind or is wholly appropriate for your particular purposes, and therefore disclaim all liability for any error, loss or other consequence which may arise from you relying on this publication. Photographs have been generously supplied by Department of Jobs, Precincts and Regions, Hort Innovation Australia, Alison MacGregor, Andrew Jessup, Australian Table Grape Association, Citrus Australia and Jake Prosser.

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