

Hawaii Commercial Sharwil Avocado

Systems Approach to Northern-tier States, D.C.,

November 1-March 31

Registration of grove



Grove sanitation

Trapping and orchard control

Harvesting requirements

Packing house requirements

Limited distribution

Inspection

Compliance Agreements



Hawaii Sharwil Avocado

Systems Approach to Northern-tier States, D.C., Registration of grove

Application for Registration of a Sharwil Grove

Name of applicant: Mailing address: Phone number: e-mail;

Places of Production:

Name of Farm (OBA):

Location of Farm: GPS:

Elevation:

Estimated harvest period for your location start/stop:

Number of Acres: Number of Sharwil trees:

Other avocado varieties and numbers in grove:

Growers need to provide local PPQ a map of the grove



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Registration of Packing House

Application for Registration of a Sharwil Packinghouse

Name of applicant: Name of Packinghouse (DBA)

Mailing address of applicant: Phone number: e-mail;

Location/address of packinghouse:

NOTE: Packers need to work closely with local PPQ to review *plans* and the *site* they wish to register to ensure the planned, and then the actual packinghouse meets the safeguarding standards required. The diagram of the proposed packinghouse after review and if approved, will be kept on file with the signed compliance agreement.

Packinghouse must provide updated list of registered grove clients to the local PPQ office.

Hawaii Sharwil Avocado to Northern-tier States and D.C.:

Grove Sanitation, Trapping and Orchard Control

Excerpts with thanks to Grant T. McQuate, Roger Vargas & Peter
Follett, USDA-ARS, Daniel K. Inouye U.S. Pacific Basin
Agricultural Research Center, Hilo, HI



Trapping Requirements (1)

Trap Type: Yellow bottom McPhail trap

Trapping Timeframe: Trapping must begin one month before harvest and continue through the end of the harvest period

Trap Numbers: A minimum of two (2) traps per place of production are required, with at least one trap per 24 acres.



Trapping Requirements (2)

Trap Bait: Protein bait (attracts both male and female Tephritid fruit flies).



- A) Three (3) protein bait pellets in 300 ml water (quarter not needed!); or
- B) 30 g of NuLure (10%) + 15 g of borax (5%) added to water to make 300 g solution.

Trapping Requirements (3)

Trap Location: Traps must be placed in avocado trees, at least 4 feet off the ground and nestled within avocado foliage. One trap should be in an avocado tree in a border row of the orchard, and one trap should be within the orchard, preferably near the middle.



Good location

Poor
locations:



Too low; no foliage



Height ok; no foliage

Trapping Requirements (4)

Trap Servicing: Traps must be serviced weekly, with recovered fruit flies identified and counted. The bait should be topped off with water to 300 ml at the one week service and replaced with fresh bait at the two week service. In addition to catching **Oriental fruit fly**, it could also catch **melon fly** or **Mediterranean fruit fly**.



Oriental fruit fly



Melon fly



Mediterranean fruit fly

Trapping Requirements (5)

Trap Records: Records of the number of traps, location of traps, and trap catch results must be maintained for one year and made available to APHIS staff on request.

McPhail Trap #	Sharwil Avocado Certified Grove					
Date Installed:	Fruit Fly Trapping & Treatment Record					
Week	Service Date	Service Action (replenish /new bait)	Number of Oriental Fruit Flies	GF-120 Treatment Date	Name of Grower:	
1						
2						
3						USDA GROVE #:
4						
5					Grower's Phone Contact:	
6						
7						
8						

Trapping Requirements (6)

Trigger for Bait Spray Requirement: Average catch of Oriental fruit fly per trap per day should be calculated:

$$\frac{(\text{Catch - trap 1}) + (\text{catch - trap 2})}{(2 \text{ traps}) \times (7 \text{ days})} = \frac{\text{Total Catch}}{14} = \text{___ flies/trap/day}$$

E.g., $\frac{(1) + (4)}{(2 \text{ traps}) \times (7 \text{ days})} = \frac{5}{14} = 0.36 \text{ flies/trap/day}$ **No spray Needed!!!**

If the average catch of Oriental fruit flies for a week > 0.4 flies/trap/day (this will be reached if ≥ 6 flies are caught over the course of one week), then orchard **bait sprays** must be initiated.

Bait Sprays (1)

Dow AgroSciences

GF-120[®] NF Naturalyte[™]
Fruit Fly Bait

Insecticidal Bait

For sweet fruit attractants and control of multiple species of larvae of fruit flies on and around fruit, nut, vine, vegetable and food crop and ornamentals, and in vegetation which may serve as mating sites for adult flies.

Group	%	INSECTICIDE
Active Ingredients:		
Spinosad (as methyl spinoacetate) (Sigma-Aldrich, St. Louis, MO)	0.02%	
Other Ingredients (incl. dye, color, stabilizer, and inert processing aids)	99.98%	
Total	100.00%	
Permeable (0.1%) active ingredient on a weight basis (0.002% active ingredient)		

For Organic Production

OMRI
Listed

Approved by the Organic Materials Review Institute (OMRI) for use in organic production.

Keep Out of Reach of Children

CAUTION

Department of Agriculture
STATE OF HAWAII

LICENSED

Agricultural Use Requirements:
Use this product only in accordance with the labeling and with the Worker Protection Standard (WPS) for 1970. Refer to the label for the Agricultural Use Requirements of the Worker Protection Standard for information about this standard.

For additional Precautionary Statements, First Aid, Storage and Disposal and other use information see inside this label.

Notice: Read the entire label. Use only according to good uses only. Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitations of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.

In case of emergency contact your health or the manufacturer regarding this product. Call 1-800-802-5004

AVOID FREEZING

EPH Reg. No. 52710-436 EPA Est. No. 545-66771

*Trademark of Dow AgroSciences LLC
Produced in:
Dow AgroSciences LLC
5500 Zionsville Road
Indpls, IN 46268

PERIOD 2012-2014 LIC. NO. **9786-234** 1 gal 1 gal

This is an environmentally friendly bait spray. The active ingredient concentration is very low (0.02%) ($\leq 0.008\%$) when diluted with water) and it is listed by OMRI as acceptable for use in organic production.

Bait Sprays (2)

- Apply bait as a spot spray to the underside of the avocado leaves
- Apply also under leaves of other Oriental fruit fly host plants within the production area or within ten (10) feet of the avocado production area.
- Where possible, spray spot application should include the underside of upper canopy leaves, because Oriental fruit flies can frequent upper canopy areas.



Bait Sprays (4)



The GF-120 spray must be repeated at 7-10 day intervals (more frequently during rainy periods) until the fruit fly population drops below 0.4 flies/trap/day, or harvesting is completed for the season.

Sanitation

- All fallen avocado fruits within the certified orchard must be removed, and disposed of in an approved manner, at least once every seven days.
- Other fallen fruits, that are hosts of Oriental fruit fly, must also be removed, and disposed of, throughout the orchard and throughout the area extending 10 feet beyond the orchard.

Sanitation: Some options for fruit disposal

Compost: compost pile covered and “working” (> 140°F internal heat).

Animal Feed: but avoid leaving fruit piled on ground for more than a day.

Drowning: fruits must be submerged in water for at least 48 hours.

Bagging: make sure there are no holes in the bags.

Grinding: must be as thorough as a garbage disposal.

Burying: fruits should be buried at least 18 inches deep.

“Augmentorium”: Use of a tent-like screen structure designed to retain fruit flies while allowing fruit fly natural enemies to re-enter the farm environment.

Value of Sanitation

Helps decrease field Oriental fruit fly population levels:

In plots where no bait spray was applied, the number of adult female Oriental fruit flies captured in protein baited traps increased as sanitation conditions worsened (higher numbers of ground fruit).

Piñero, J. C., R.F.L. Mau, & R. I. Vargas. 2009. Managing Oriental fruit fly (Diptera: Tephritidae), with spinosad-based protein bait sprays and sanitation in papaya orchards in Hawaii. *J. Econ. Entomol.* 102: 1123-1132.

The relative density of male oriental fruit fly adults was lower in orchards where ripe fruits on trees and on the ground were removed twice a week.

Liquido, N. J. 1993. Reduction of Oriental fruit fly (Diptera: Tephritidae) populations in papaya orchards by field sanitation. *J. Agric. Entomol.* 10: 163-170.



Ground Fruit Papaya

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Who. Criteria? Registration of grove

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Other Concerns?

