

Evaluating the fate of *Lobesia botrana* in infested grape bunches processed for wine making

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## EGVM Collaborators

### USDA-APHIS

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Monica Cooper, Napa County

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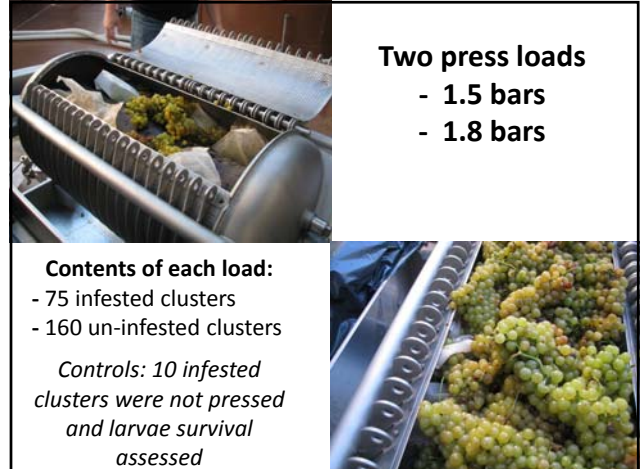
Lucia Varela, North Coast IPM

## 2011 Funding Sources

- PD/GWSS grant - California Department of Food and Agriculture  
“Biology and management of European grapevine moth, *Lobesia botrana*, in California vineyards”
- USDA-APHIS Cooperative Agreement  
“Biology and control of European grapevine moth, *Lobesia botrana*”

Evaluated survival of larvae in trials conducted in 2010 in Napa County and 2011 at UC Davis

- 2010
  - Infested Chardonnay clusters processed in small-scale winery press
  - Infested Cabernet Sauvignon clusters processed in a destemmer
- 2011
  - Infested Merlot clusters processed in small scale stemmer-crusher





## Larvae found in 15.9 pounds of berries

What went into destemmer		What came out of destemmer		
	Percent infested clusters	Berries	Larvae Alive	Larvae Dead
51 clusters	100% (53 actual larvae)	15.9 lbs.	10	6

- 19% of the total larvae that went into destemmer survived inside berries that came out of destemmer.
- No larvae found on stems or waste.



APHIS Animal and Plant Health Inspection Service

### 2011 Trial

United States Department of Agriculture  
 Animal and Plant Health Inspection Service  
 4700 River Road  
 Riverdale, MD 20737

Plant Protection & Quarantine

Permit to Move Live Plant Pests, Noxious Weeds, and Soil

Interstate Movement  
 Regulated by 7 CFR 330


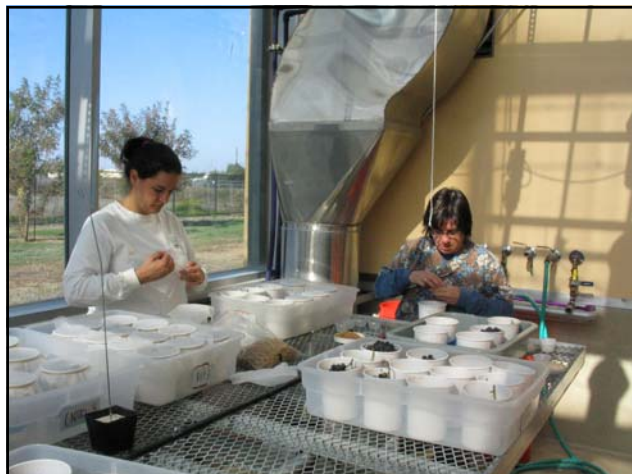
This permit was generated electronically via the ePermits system

PERMITTEE NAME: Dr. Gregory Srinivasan	PERMIT NUMBER: P520F-11-03893
ORGANIZATION: USDA-APHIS-PPQ-CYRIST	APPLICATION NUMBER: P524-110226-006
ADDRESS: 7697 Highway 1 Moss Landing, CA 95039	FACILITY NUMBER: 71
MAILING ADDRESS: 7697 Highway 1 Moss Landing, CA 95039	HAND CARRY: Yes
PHONE: (831) 796-8605	DATE ISSUED: 11/01/2011
FAX: (831) 632-2105	EXPIRES: 11/01/2014
DESTINATION: Contained Research Facility, University of California, 555 Hopkins Road, Davis, CA 95616	
RELEASE: No	

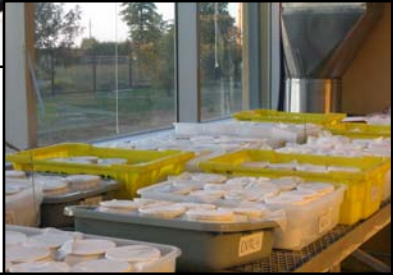
Under the conditions specified, this permit authorizes the following:

Article Category	Invertebrate Pests - Insects	Life Stage(s)	Intended Use	Shipment Origin	Originality/Collected	Culture Designation
Lobesia botrana	Egg, Larvae,	Research - Lab	MA	Originally Collected from USA including territories		





- Each cluster inoculated with 5 larvae.




- Tightly woven cloth was secured on each cup with rubber bands.
- Clusters remained undisturbed for 48 hours




Zambelli stemmer-crusher

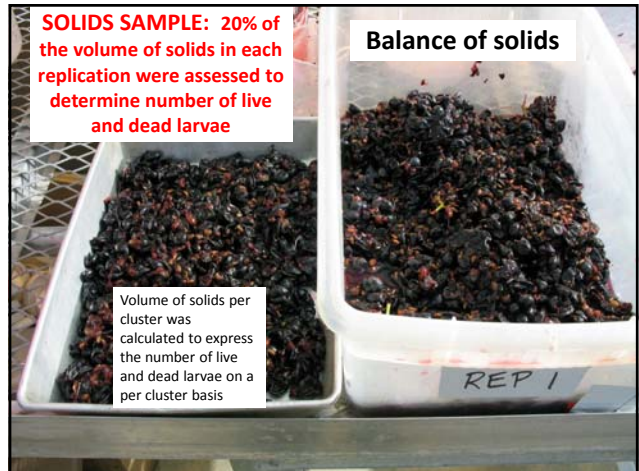
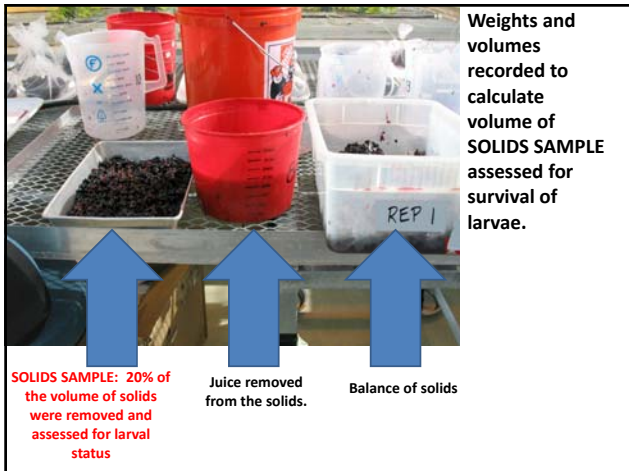


Each cup inspected to insure all 5 larvae were removed



Evaluating **CONTROL** (unprocessed) clusters: counted live and dead larvae

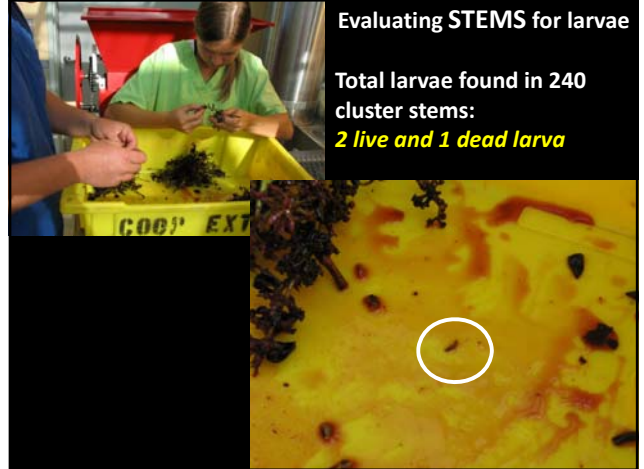




**From 0 to 4 live larvae** were found in the sample of skins, seeds and pulp separated from the must after processing each set of 40 clusters



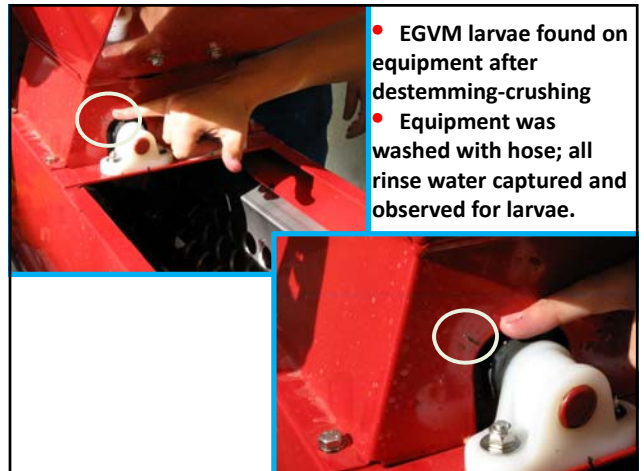
**SOLIDS SAMPLE:** 20% of the volume of solids were removed and assessed for larval status



Evaluating STEMS for larvae  
Total larvae found in 240 cluster stems:  
**2 live and 1 dead larva**



EGVM larvae on wall of destemmer hopper

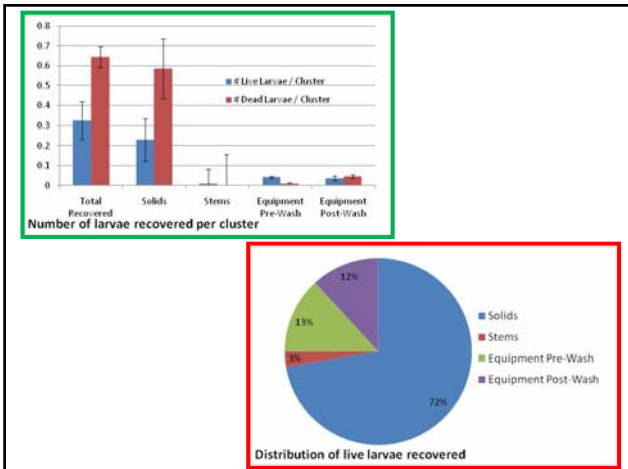


- EGVM larvae found on equipment after destemming-crushing
- Equipment was washed with hose; all rinse water captured and observed for larvae.



Live and dead larvae are counted in rinse water and solids flushed from inside the equipment after each replication was processed.

A total of **9 live larvae** were washed off equipment that processed 240 clusters



### Results of 2011 Destemmer-Crusher Trial

- Live and dead larvae were recovered on the must solids, equipment and to a far lesser extent, stems.
- In 240 clusters, 3 larvae (2 live) were found on the stems
- In 240 clusters, 20 larvae (9 live) were washed off the equipment
- **In this trial, the destemmer-crusher appeared to present a higher risk of contamination than did any other product.**