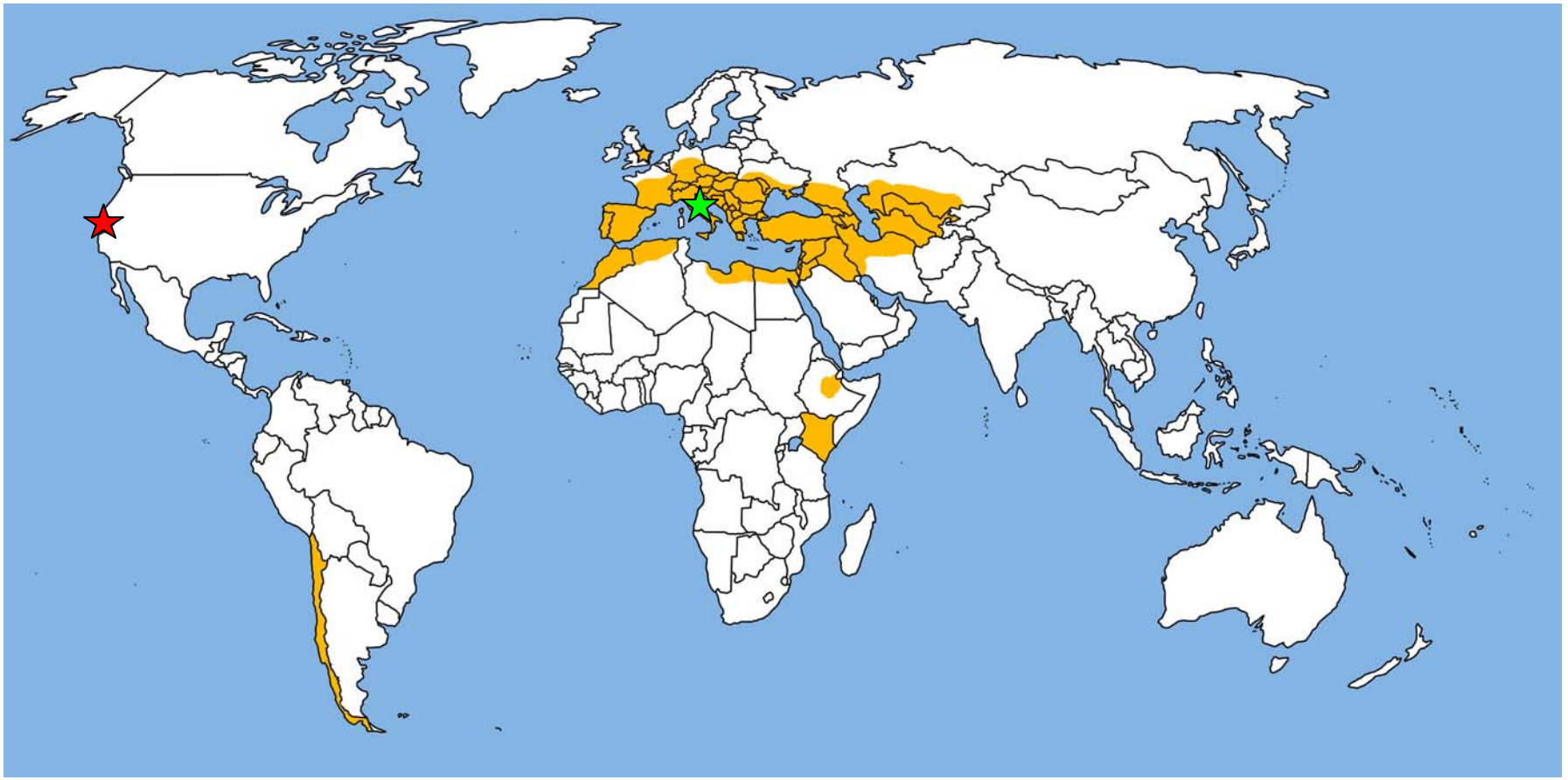
European Grapevine Moth Biology and Management

Monica L. Cooper
UC Cooperative Extension
Viticulture Farm Advisor

Lobesia botrana

Distribution of *Lobesia botrana*

★ Origin: Italy



Adapted from Distribution Maps of Pests, Commonwealth Institute of Entomology (1974) with additions of subsequent findings.

Life cycle

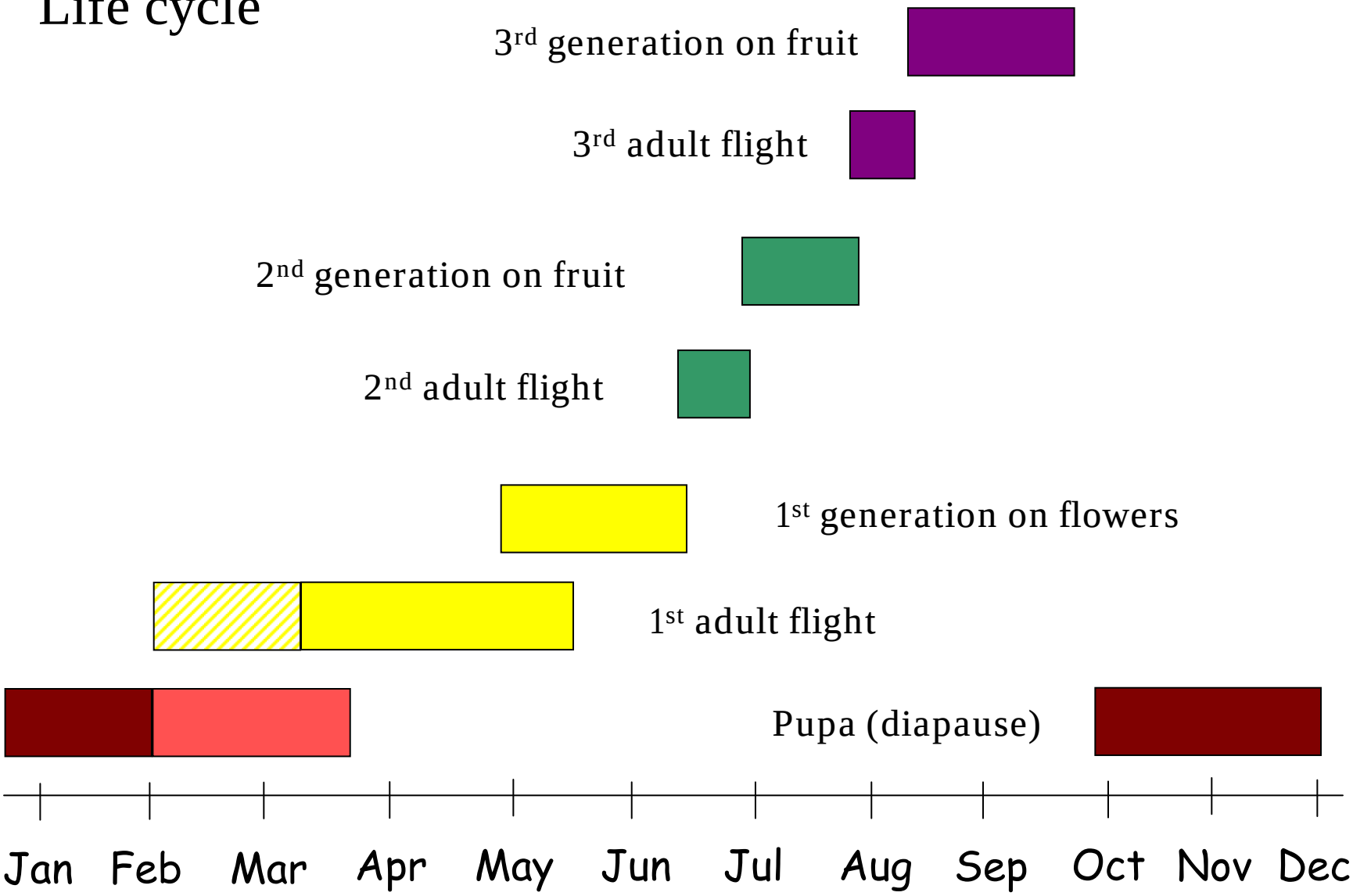
Adult (Moth)

Egg

Larva (caterpillar)

Pupa

Life cycle



adapted from Maher, 2002 PhD thesis, Aquitaine,France

Development thresholds:

Upper: 86° F

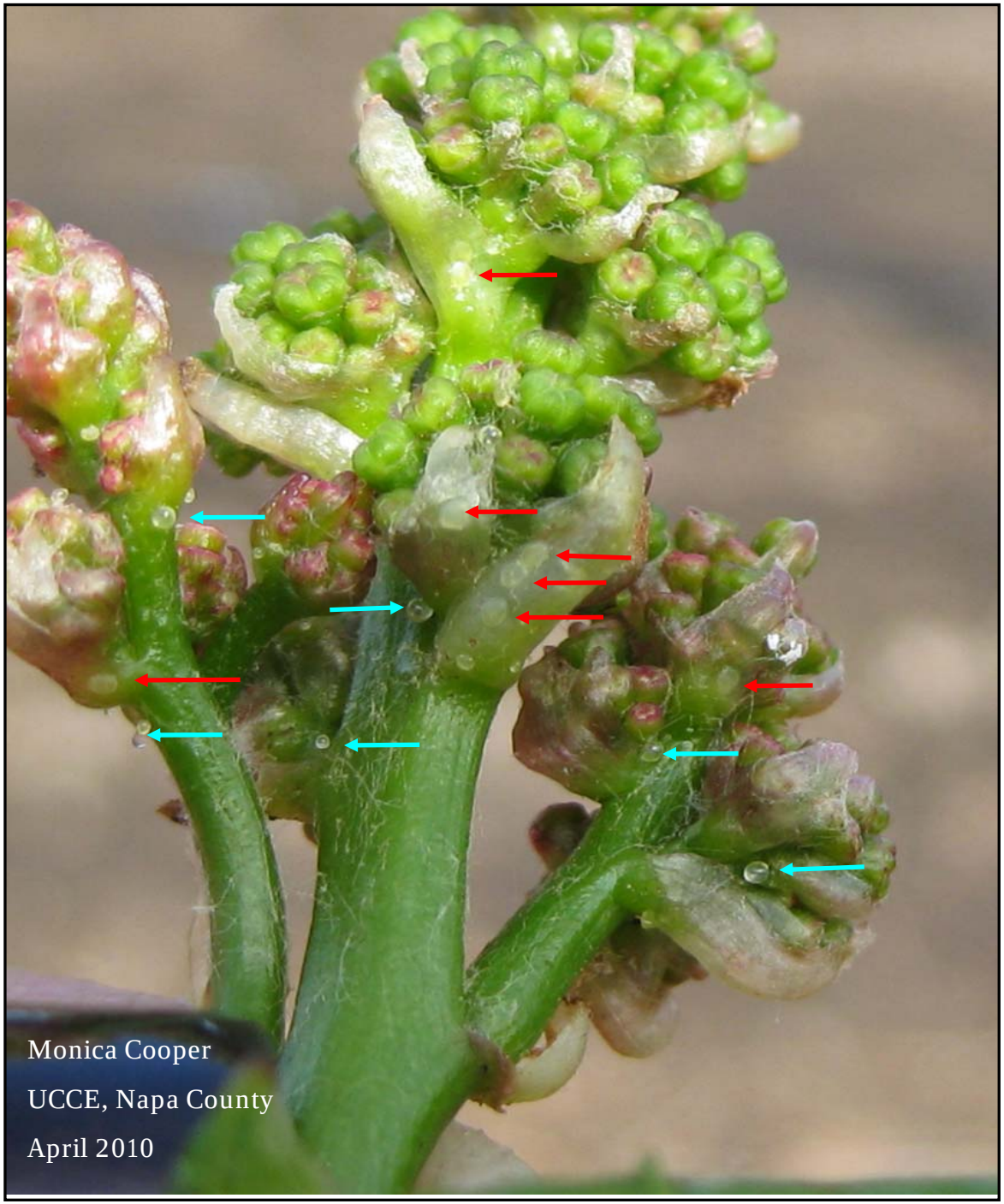
Lower: 50° F

Optimal: 70-84° F

RH: 40-70%

80-160 eggs per ♀ per lifetime

Eggs
1st generation



Eggs: red

Xylem drops: blue

Eggs change color as they develop

1st generation: damage

1st generation: damage


Andrea Lucci


Bruno Bagnoli


Bruno Bagnoli

1st generation: damage

1st generation: damage

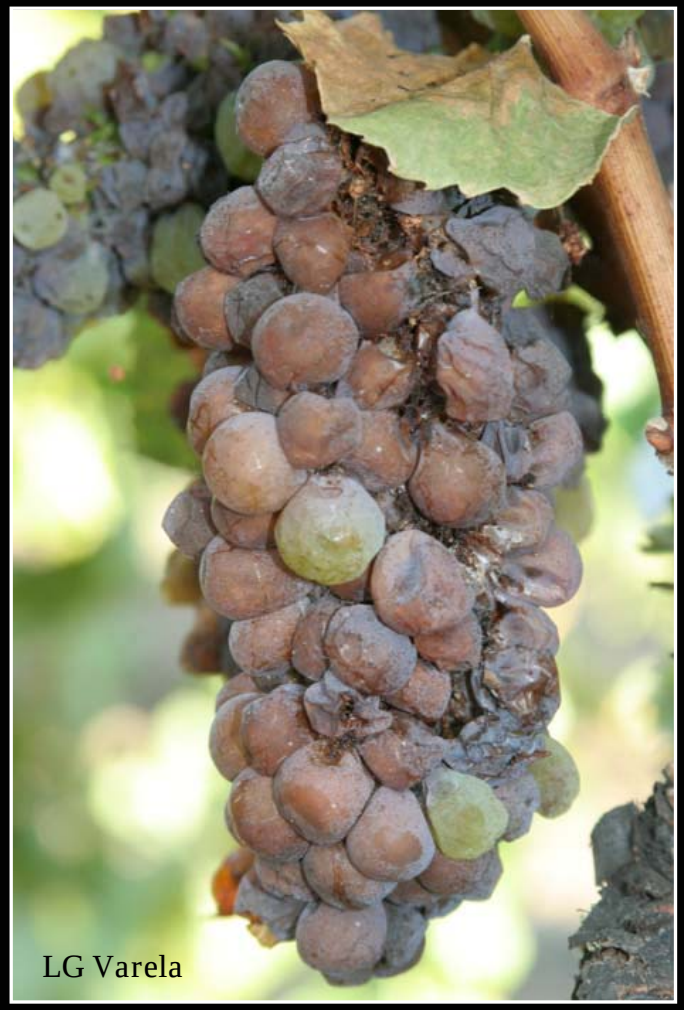
2nd generation

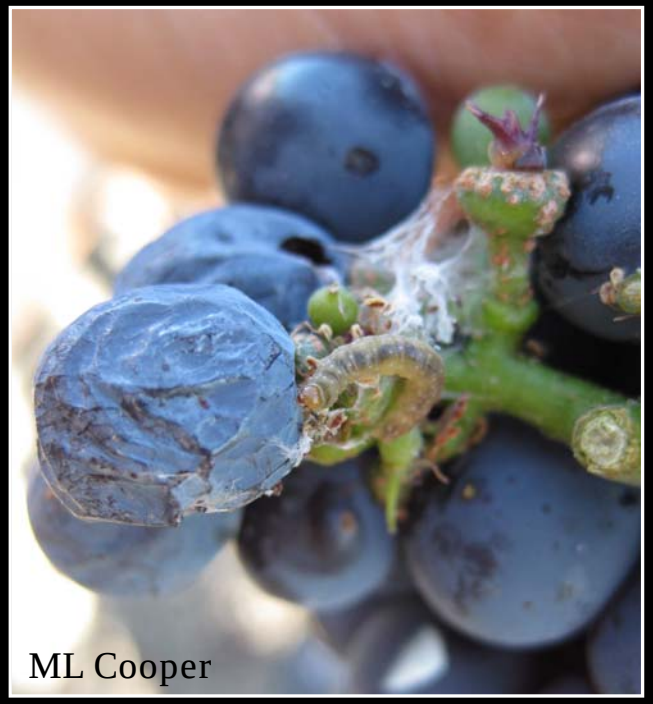
Eggs laid on green fruit

Larvae feed in fruit

Pupae in bunches, under bark

3rd generation


LG Varela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Eggs laid on ripening fruit

Larvae feed in ripening fruit

Botrytis bunch rot develops

Pupae overwinter under bark, in soil crevices

3rd generation


ML Cooper


JK Clark

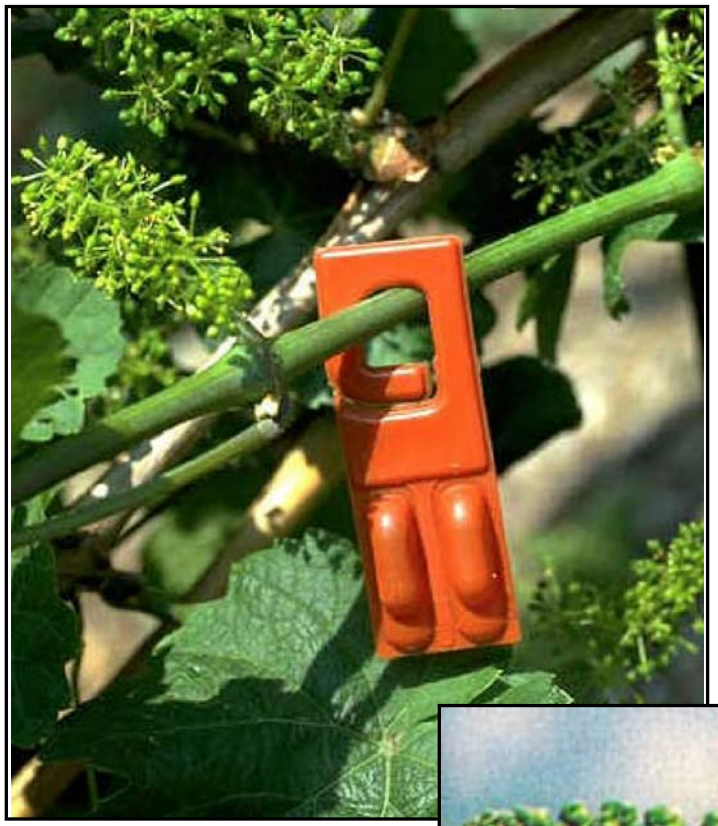

JK Clark

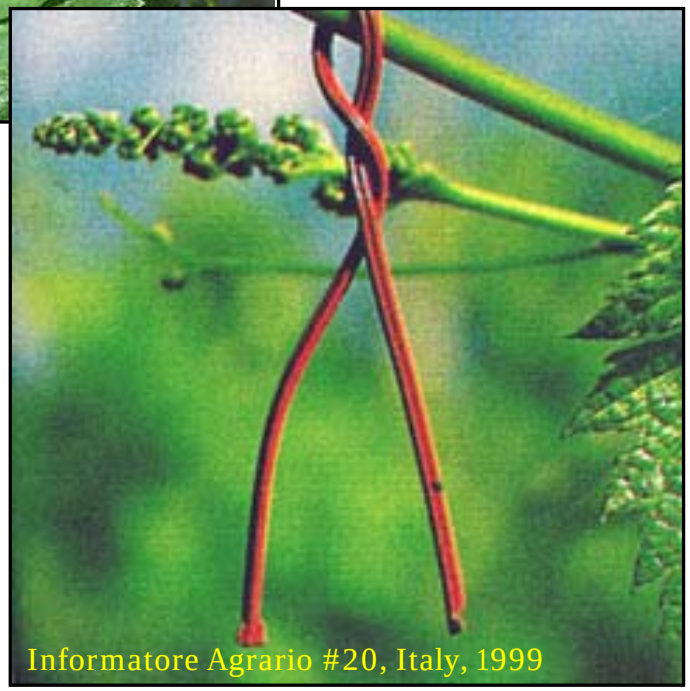
3rd generation

3rd generation

Insecticides

Insecticide	OMRI	Ovicide/ Larvicide	Toxicity Predator/Parasitoid
Insect growth regulator (Ecdysone mimic)—IRAC grp. 18			
Intrepid (methoxyfenozide)	N	Y / Y	low/low
Microbial (disrupts midgut membranes)—IRAC grp. 11			
Dipel (*Bt* Kurstaki)	Y	N / Y	low/low
Biobit (*Bt* Kurstaki)	Y	N / Y	low/low
Diamides (nerve and muscle targets)—IRAC grp. 28			
Altacor (chloranthraniprole)	N	Y / Y	low/low
Belt (flubendiamide)	N	N / Y	low/low
Sodium channel blockers (paralysis)—IRAC grp. 22			
Avaunt (indoxacarb)	N	N / Y	low/ med
Spinosyns (nicotinic AChR—nervous system block, paralysis)—IRAC grp. 5			
Success (spinosad)	N	N / Y	low/ med-high
Entrust (spinosad)	Y	N / Y	low/ med-high
Delegate (spinetoram)	N	N / Y	med/ high





Informatore Agrario #20, Italy, 1999

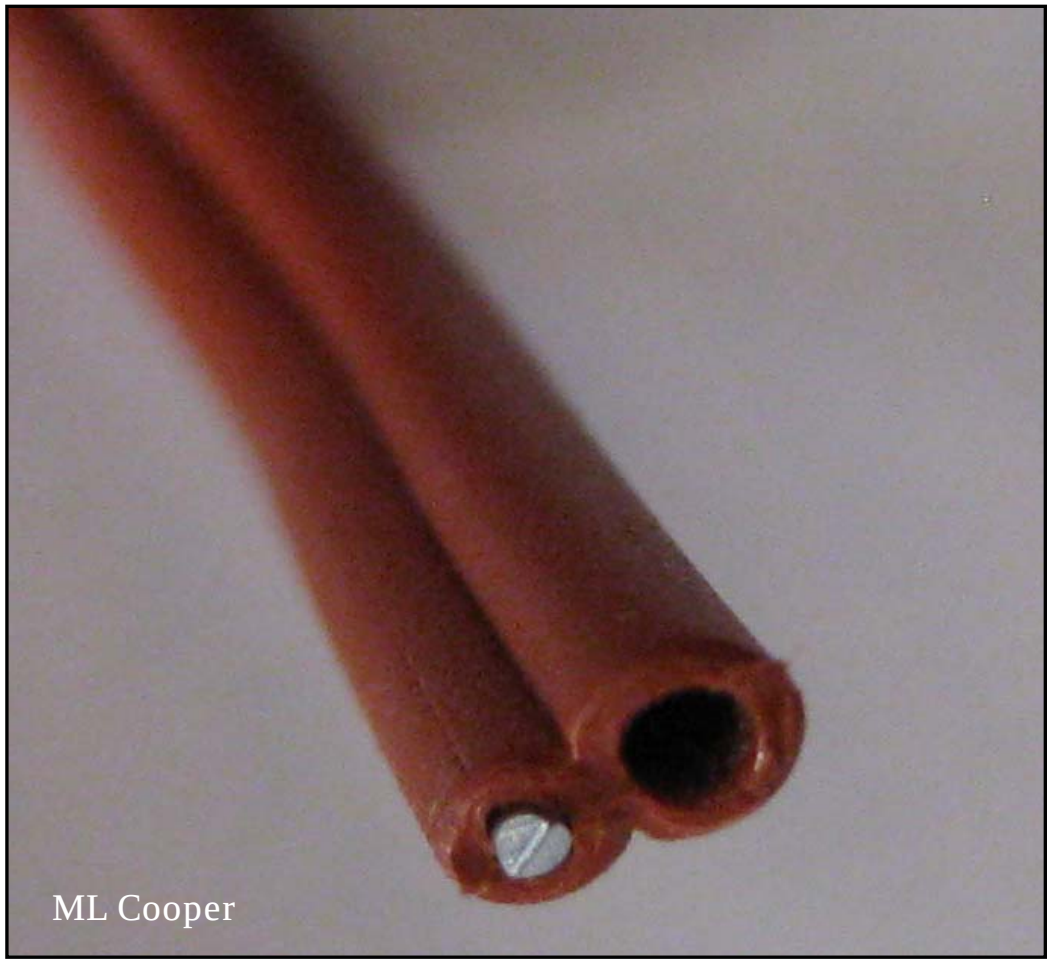
Mating Disruption

Recently registered in CA

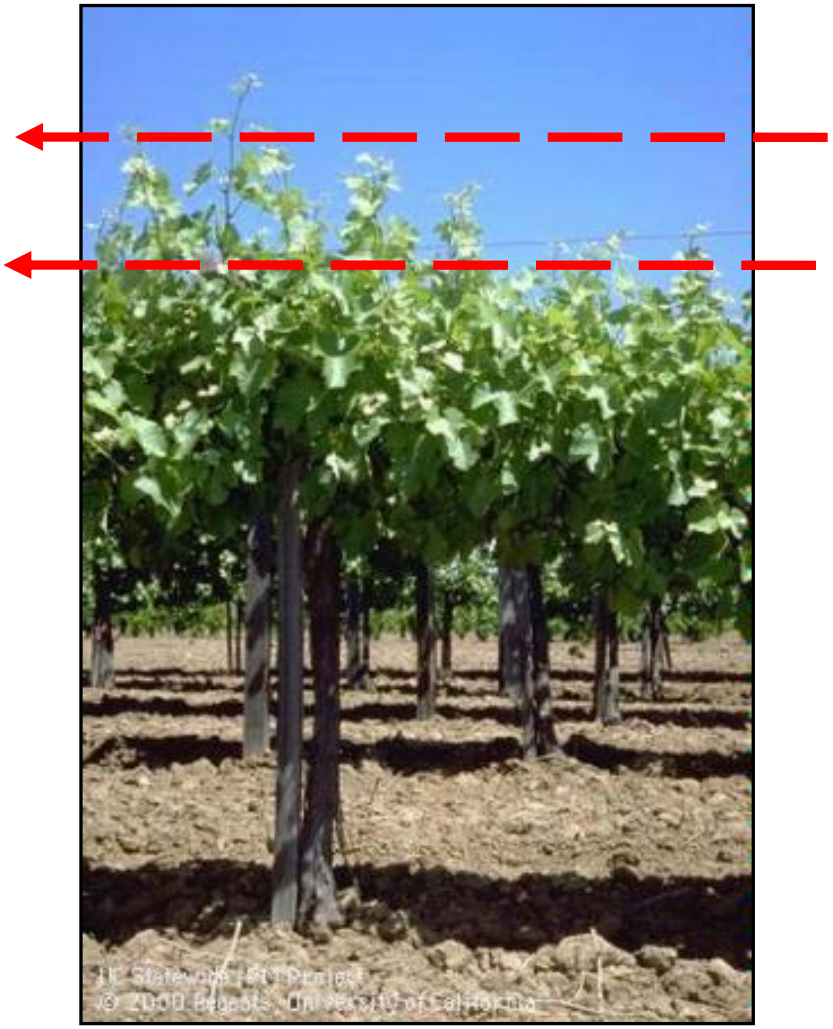
Best as Area-wide program
& when populations are low

Mating disruption

Pacific Biocontrol Corporation, Shin-Etsu Fine Chemicals Division



Monitoring



Delta Traps

Monitor male flights

Ranches w/o mating disruption

Traps for Delimitation

Determine extent of *Lobesia* populations in the state

25 traps per square mile in vineyards state-wide

Ag Commissioner's office and CDFA

Checked every **14 days**

Interactive map on Napa Ag Commissioner's website:
http://www.countyofnapa.org/AgCom/

Traps for Monitoring (Treatment)

Follow development for timing treatment applications in Napa County

38 traps deployed in Oakville, Rutherford, 3rd Ave.

Ranches with **KNOWN** populations

UC Cooperative Extension (Monica & Lucia Varela)

Checked **3** times per week (M-W-F)

Results reported weekly

Results available through *Lobesia* newsletter:
http://ucanr.org/egvm newsletter

Main hosts:

V. vinifera

Daphne gnidium

Secondary hosts:

Olive
Blackberry
Gooseberry
Black & Red currant
Cherry
Prune
Persimmon
Kiwi
Pomegranate

Host range

Olive flowers host 1st generation in Italy, Greece

Unique characteristics of *Lobesia botrana*

Lay eggs singly...

NOT in masses

Orange Tortrix

Omnivorous Leafroller

Unique characteristics of *Lobesia botrana*

Feed on flowers and fruit...

NOT on leaves

Unique characteristics of *Lobesia botrana*

Overwinter as pupae under the bark...

not as larvae in mummied berries or on spurs

UCCE Napa (Viticulture):

http://cenapa.ucdavis.edu

UCCE Sonoma (Pest Management):

http://cesonoma.ucdavis.edu

NEWSLETTER:

http://ucanr.org/egvm newsletter

Napa County Agricultural Commissioner:

http://www.countyofnapa.org/agcom

California Department of Food and Agriculture

http://www.cdfa.ca.gov/phpps/egvm/index.html