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Fresno County

June 2010

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Managing European Grapevine Moth in SJV Vineyards

Stephen Vasquez, Walt Bentley, and Lucia Varela

Introduction

European grapevine moth (EGVM), *Lobesia botrana*, was recently found in Fresno County. Traps set in the southeast portion of Fresno County, detected a small population of European grapevine moth (EGVM) in the Fowler/Del Rey farming community. The moth finds resulted in a quarantine being placed on a 96 sq mile area that will necessitate special management protocols for growers. The insect has the potential to cause great economic harm to California's diverse grape industries. Common to Europe and the Mediterranean, European grapevine moth has been intercepted across the US where international travelers, cargo and/or mail disembark from planes originating from overseas. Currently, the grape industry organizations, the University of California and local, state and federal governments are working hard to eradicate EGVM from Fresno County and end the quarantine.

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Updates to Open Burning Rule

On May 20, 2010, the San Joaquin Valleys Air Pollution Control District's (APCD) Governing Board approved the "Staff Report and Recommendations on Agricultural Burning" described in Section 6.3 of District Rule 4103 – *Open Burning*. The report identified the agricultural material that met the criteria described in Section 5.5.2, allowing the postponement of the prohibitions required by California Health and Safety Code 41855.5. This amended bulletin identifies the types of agricultural materials that are eligible to be on an agricultural burn permit as they relate to vineyards. The complete bulletin can be found at the SJV APCD website. Section 6.3.2 requires the District to review and update the report at least once every five years, with a new review to take place on vineyards and related practices in 2015.

Effective June 1, 2010, the District may issue agricultural burn permits for the following agricultural waste materials as it relates to vineyards:

- **Vineyards**, which include untreated grape stakes, paper raisin trays, and vineyard removals.

- **Vineyard Attrition,** which include suckers, and dead or broken stump and trunks from a vineyard. Attrition materials do not include annual prunings (vines and canes) from a vineyard, which may no

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Managing EGVM

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What Does It Mean To Be A Quarantine Pest?

A quarantine is "triggered" when two adult moths or one egg, larva or pupa are found within a three mile area. The quarantined area covers a five-mile radius from the location of the first properly identified insects. A quarantine area could also become larger if additional insect life stages are found further from the "original" location. When a quarantine is in place for a specific pest (i.e. EGVM), movement restrictions out of the quarantine area are placed on all commodities and their respective products. In the case of EGVM, grapes for crush, raisin and table, as well as fresh fruit other than grapes, nursery stock and green waste coming from host material are regulated. To move restricted plant material out of the quarantine area, growers must sign compliance agreements.

European grapevine moth identification

European grapevine moth adults can be confused with American grape berry moth (*Endopiza viteana*) native to the eastern United States or European grape berry moth (*Eupoecilia ambiguella*). These two species are not present in California. Wings of the invasive European grapevine moth, *L. botrana*, have a mosaic pattern mottled with black-brown and cream blotches, and gray-blue bands. Fully grown larvae tend to develop a purple cast after feeding and will often be found inside the berry or the cluster. Samples should be taken to a trained entomologist affiliated with the local Ag Commissioner, university or state for proper identification and documentation. It is important to note that samples should be enclosed in a sealed container, jar, or vial if found prior to moving the insect (all stages) from an infested site.

Damage

Damage can be seen to both grape flowers and developing fruit. Larvae feed on flowers prior to and through bloom. At peak bloom, larvae protect themselves forming nests by webbing flowers parts together and feeding on neighboring flowers and parts. Second and third generation larvae feed on berries hollowing and contaminating them with excrements. Cultivars that naturally have tight clusters—like Chardonnay, Pinot noir and Zinfandel—will suffer the most damage. Much like infestations from other worm pests, feeding damage will lead to infections by bunch rot fungi. Raisin and table grape cultivars will also experience damage, especially when bloom is prolonged due to weather, making flowers less responsive to applications of gibberellic acid used for bloom thinning. Table grape cultivars with tight clusters have the least tolerance for the moth due to fruit feeding damage and contamination with webbing, excrements and rot. All life stages are found in vineyards infested with European grapevine moth but larvae from the second and third generations have been found to be the most damaging when fruit is maturing.

Host range

The host range for European grapevine moth is diverse. In addition to *Vitis vinifera* (cultivated grape), they may also feed on other fruit like cherry, nectarine, persimmon, plum, pomegranate and olive (flowers only). However, they do not complete the three generations on these hosts. Larvae may feed on alternate hosts when the fruit is ripe, thus, they serve as hosts in backyards and not in commercial operations. It has been documented that some grape cultivars are preferred for oviposition. Plants should be inspected for eggs, larvae and pupae. Larvae can be found in flower or fruit clusters along with webbing and in berries or other fruits. Pupae may be found inside a silken cocoon, inside clusters, and under the bark of any of the previously mentioned host. At this time regulations are in place regarding the movement of fruit or other plant material from Napa County and other locations that have had positive finds. Trapping beginning at budbreak, using a commercially available pheromone has been the best approach to monitoring vineyards for activity. Pheromones attract males to traps and are used to follow European grapevine moth flights. With cooler fall temperatures, adult moths will be absent and only the diapausing

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Tractor Rollover Injuries are Preventable

Research shows that rollover protective structures (ROPS), when used in combination with a seatbelt, are 98 percent effective in preventing death and serious injury in the event of a tractor overturn.

Nevertheless, more than a third of tractors in use today still do not have these lifesaving structures.

"We know rollover injuries are preventable," said Mark Purschwitz, Extension professor and agricultural safety and health specialist for the University of Kentucky, College of Agriculture. "We just need to help farmers see the importance of having ROPS on their equipment and then provide information that helps them do it."

To that end, Purschwitz and his colleagues at UK developed The Kentucky ROPS Guide to help farmers locate retrofit ROPS for older tractors or even "gray market" tractors (i.e., non-U.S. made tractors imported without manufacturer authorization). The guide is now available online at: http://www.ca.uky.edu/rops

"The guide is designed for farmers, dealers and technicians, not only in Kentucky, but also throughout the United States and Canada," he said. "It enables users to quickly determine what ROPS are available for which tractors, which companies supply retrofit ROPS, and how and where to obtain these ROPS."

Purschwitz explained the guide offers a full search capability, enabling any tractor owner, equipment dealer or technician to find timely, detailed information about ROPS suppliers and types. Guide users may also determine the availability, source and ordering procedures for retrofit ROPS for any domestic or imported agricultural tractor in the United States for which a retrofit is available.

"The days of searching through scattered computer records and paperwork are over," he said.

Several features of the new online guide are particularly easy to use. Notably, users can search the guide by simply selecting a tractor make and model number. The guide's database includes makes and models of "gray market" tractors, particularly Japanese compact tractors, frequently sold in the U.S. market today.

Development of The Kentucky ROPS Guide was supported by the Southeast Center for Agricultural Health and Injury Prevention, University of Kentucky College of Public Health, through Centers for Disease Control and Prevention's National Institute for Occupational Safety and Health Cooperative Agreement U50 OH007547-07S1.

Aimee Nielson is a agricultural communication specialist with University of Kentucky.

Preventing Heat Illness

1. **Training:** Train all employees and supervisors about heat illness prevention.
2. **Water:** Provide enough fresh water so that each employee can drink at least 1 quart per hour and encourage them to do so.
3. **Shade:** Provide access to shade for at least 5 minutes of rest when an employee believes he or she needs a preventative recovery period. They should not wait until they feel sick to do so.
4. **Planning:** Develop and implement written procedures for complying with the Cal/OSHA Heat Illness Prevention Standard.

To learn more, visit the Cal/OSHA Heat Illness website:

http://www.dir.ca.gov/DOSH/HeatIllnessInfo.html

Open Burning

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longer be burned.

- **Disease Prevention:** An agricultural burn permit may be issued with specific conditions after the county agricultural commissioner has determined that open burning is the only means available for disposing of the diseased materials.

- **Weeds from Surface Waterways**, primarily from ponding and levee banks associated with agricultural operations.

- **Tumbleweeds:** Landowners must implement Best Management Practices (BMPs) or reasonable alternatives to open burning. Managing tumbleweed growth may be accomplished by using herbicides, mowing, stabilizing soils, planting competitive species, or a combination of these practices. However, tumbleweeds often accumulate on property from which they did not originate. A burn permit may be issued for burning tumbleweeds once the District has deemed that the only disposal method for the site is by open burning and the smoke will not affect smoke sensitive areas or contribute to a nuisance.

- **Noxious Weeds** are those species identified by the USDA as being noxious to a crop, such as yellow star thistle and dodder weed. Growers must implement BMPs for controlling noxious weeds in their crops. Many practices or combination of practices are indeed reasonable alternatives to open burning; however, an agricultural burn permit may be issued if the grower demonstrates to the District that open burning is a BMP for abating the noxious weed.

- **Ditchbanks and Canals** maintained by an irrigation district or an agricultural operation. As with tumbleweeds and noxious weeds, feasible alternatives to open burning must first be examined before an agricultural burn permit may be issued.

- **Fertilizer and Pesticide Paper Sacks:** Alternatives to burning paper sacks include disposal in a landfill or purchasing fertilizers and pesticides in returnable, refillable bulk bags. A burn permit may be issued only if the BMP for disposing the paper sacks is by open burning. Burning burlap sacks, cardboard boxes, or plastic containers is prohibited.

Please note that additional information orchards, rice and bee hives can be found on at the District's website or in the full bulletin.

When requesting burn authorizations, growers should report only the amount of material that can be expected to be burned on that date.

Agricultural burn permit holders are encouraged to use the automated smoke management system SMS) when seeking a daily burn authorization. The SMS may be reached by telephone at 1-800 -665-2876 or via the Internet at http://sms.valleyair.org

For any questions on open burning and agricultural burn permits, please call 1-800-665-2876 between 6:00 AM and 11:00 AM. Additional information on agricultural burning can be found at: http://www.valleyair.org/BurnPrograms/Ag_Burning.htm

Managing EGVM

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pupal stage inside a silken cocoon can be found protected by grapevine bark. In the spring, as the weather warms, the moths will emerge and begin their life-cycle of laying eggs, developing into larva, pupating and emerging as moths. It has been suggested that San Joaquin Valley growers may experience at least three generations. Growers should consult with their County Agriculture Commissioner or University of California personnel to determine the best approach to monitoring and properly identifying European grapevine moth.

Management

Currently, EGVM management is being focused on the second generation of EGVM in the core quarantine area of Fresno County. To date, ten moths have been trapped, with the most recent finds being considered the second moth flight. Because the population is small, it is difficult to identify the optimal time to apply insecticides. Therefore, it is important to follow UC Guidelines regarding this pest because it is not established in the San Joaquin Valley. Management strategies are being developed on the best information that is available and the experience of the grape industry in Napa and Sonoma Counties. The second moth flight has also begun June 10 in the Napa area where EGVM abundance is much greater than in the San Joaquin Valley.

It is important to note that insecticides will be less effective after bunch closure, which makes the current application timing critical. There are several reduced-risk insecticides registered for use in grapes to control tortricid larvae. These include insect growth regulators, spinosyns, and *Bacillus thuringiensis*.

There are also the traditional insecticides that work well against EGVM too. However, growers should consult with their PCA, packer, shipper or other industry personnel responsible for marketing their fruit so the best management protocol can be identified and implemented. Growers should note that financial assistance is available to those located in the core quarantine area from National Resource Conservation Service (NRCS) to help offset the cost of insecticides. Growers should contact their local NRCS office for the most recent information.

The most recent moth find has prompted the industry to strongly encourage growers to apply insecticides now in order to minimize further moth development and spread. Don't hesitate. Act now. This is the time for all grape growers to join the fight to eradicate this destructive pest from our valley.

Pay attention for future information from University of California and industry organizations on EGVM. In the meantime, if you have any questions please do not hesitate to contact your University of California Cooperative Extension farm or IPM advisor, Ag Commissioner or industry representatives.

Stephen Vasquez is the UC Cooperative Extension viticulture farm advisor in Fresno County.

Walt Bentley and Lucia Varela are UC IPM advisors in Fresno County (based at the UC Kearney Ag Center in Parlier, CA) and Sonoma County, respectively.

EGVM Hotline

For the most current information on European grapevine moth (EGVM) the Fresno County Agricultural Commissioner has set up a hotline for growers. As information develops it is added to the automated message. Quarantine issues, compliance agreement status and other information is available 24/7.

EGVM Hotline information can be accessed at: 559-600-3486

USDA Announces Financial Support for Small, Socially Disadvantaged Agricultural Producers

Agriculture Secretary Tom Vilsack announced that USDA is accepting grant applications to assist small, socially disadvantaged agricultural producers and cooperatives in rural areas.

"Helping small agricultural producers better market their products creates economic opportunity and these grants will help small business owners add profit and efficiency to their operations so they can grow and create jobs," Vilsack said.

Approximately $3.5 million in grants are available with funding being awarded through USDA Rural Development's Small, Socially Disadvantaged Producer Grant Program, which was authorized by Congress in the Food, Conservation, and Energy Act of 2008. It is part of the Department's ongoing effort to expand outreach to rural residents to ensure that all communities have equal access to USDA programs and services. Funding is available to cooperatives or associations of cooperatives where at least 75 percent of the governing board or membership has annual gross agricultural product sales of $250,000 or less in the last three years. Grants can be used for product improvements, business plan development or economic development activities.

The grants are intended to assist eligible producers. For example, in 2009 Piedmont Farmers Marketing Cooperative, Inc. in Greenwood, S.C., used a $43,600 Small, Socially Disadvantaged Producer Grant to complete several seminars and workshops on animal husbandry, vaccination requirements, and techniques on breeding and proper raising of offspring. The 31-member co-op developed a marketing study on a certification mark, collective brands, consumer assurance and alternative livestock planning. The grant also will allow co-op members to visit a livestock operation that uses livestock waste for renewable energy, reducing the operation's energy costs.

Meanwhile, SCF Organic Farms, LTD received a $33,100 Small, Socially Disadvantaged Producer Grant in 2009 to expand the farm, which in turn led to a greater presence in the community and higher sales of the farm's organic vegetables. SCF has completed several workshops and provided technical assistance to other small, socially disadvantaged producers interested in organic farming. SCF is located in a rural area of Sumter County, S.C.

Applications for Small, Socially Disadvantaged Producer Grants are due July 27, 2010. Application materials may be obtained at: http://www.rurdev.usda.gov/rbs/coops/ssdpg/ssdpg.htm or by contacting the USDA Rural Development State Office. A list of these offices is available at: http://www.rurdev.usda.gov/recd_map.html.

For additional information, see the April 28 Federal Register, page 22358 at : http://edocket.access.gpo.gov/2010/pdf/2010-9820.pdf.

USDA Rural Development administers and manages more than 40 housing, business, and community infrastructure and facility programs through a network of 6,100 employees in 500 offices at the national, state and local level. These programs are designed to improve the economic stability of rural communities, businesses, residents, farmers and ranchers, and improve the quality of life in rural America. Rural Development has an existing portfolio of more than $134 billion in loans and loan guarantees. Further information on rural programs is available at a local USDA Rural Development office or by visiting USDA Rural Development's web site at: www.rurdev.usda.gov/rbs/coops/csdir.htm.

CALENDAR OF EVENTS

Local Meetings and Events

Table Grape Integrated Pest Management
June 28, 2010
12:00 p.m. — 4:00 p.m.
Kearney Agriculture Center,
9240 South Riverbend Avenue, Parlier, California
Contact: Stephen Vasquez (559) 456-7285
Register online:
http://ucanr.org/grapepestmanagement

Table Grape Plant Growth Regulator Workshop
June 29, 2010
10:00 a.m.—2:00 p.m.
Visalia Convention Center
303 E. Acequia Avenue, Visalia, CA 93291
Contact: Stephen Vasquez (559) 456-7285
Register online:
http://ucanr.org/tablegrapeworkshop

U.C. Davis University Extension Meetings

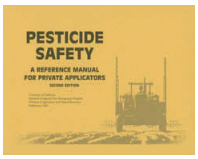
(800) 752-0881

Small Vineyard Series, Integrated Pest Management, Cover Crops and Erosion Control
July 10, 2010
9:00 a.m. — 4:00 p.m.
Da Vinci Building
1632 Da Vinci Ct.
Davis, CA
Section: 101VIT227

Introduction to Wine Chemistry
July 24—25, 2010
8:30 a.m. — 4:30 p.m.
Da Vinci Building
1632 Da Vinci Ct.
Davis, CA
Section: 101VIT218

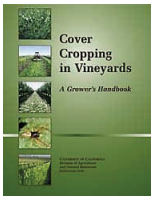
Winegrape Irrigation: Principles, Practices and Consequences
August 4, 2010
9:00 a.m. — 4:00 p.m.
Da Vinci Building
1632 Da Vinci Ct.
Davis, CA
Section: 101VIT221

Publications from the University of California



Pesticide Safety: A Reference Manual for Private Applicators
ANR Publication 3383
Price - $7.00 + tax and shipping

Updated in 2006, this manual covers information essential for anyone using pesticides on California farms, including growers, managers and employees. The manual covers pesticide labels, worker safety (handlers and fieldworkers), how to mix and apply pesticides, calibration, the hazards of pesticide use including heat related illness, and pesticide emergencies.



Cover Cropping In Vineyards
ANR Publication 3338
Price - $20.00 + tax and shipping

This guide features cutting-edge methods for using cover crops to enhance vineyard performance. Based on extensive research, this guide details technical and theoretical information on how cover crops affect vineyards and promote ecological stability.

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Vine Lines

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