Producing Melissa Table Grapes
Nick Dokoozlian, Don Luvisi, Bill Peacock and Stephen Vasquez

Melissa, a newly-released USDA table grape cultivar, is currently being planted at a rapid pace in the San Joaquin Valley. This mid- to late-mid season white seedless grape, formerly known and tested as USDA selection #C45-59, was released in the spring of 1999. The cultivar produces large, white berries that ripen in late August to mid-September, just after Thompson Seedless. Clusters are conical with small to medium shoulders, and generally less compact than Thompson Seedless. Berry shape is generally cylindrical or similar to table Thompson Seedless, although berry size may be greater with proper cultural practices. The berries are firm and have a slight floral or muscat character when fully mature. The commercial appeal of Melissa rests on its large berry size, late maturity and excellent eating quality.

Site Selection and Planting

Melissa is highly vigorous when planted on its own roots. No information on rootstock adaptation is currently available, but trials are underway. Rootstock selection should be based on site specific soil pest or soil chemistry problems, so recommendations vary significantly depending upon location and production history. At present the standard rootstocks generally used for table grape production in the San Joaquin Valley (Freedom, for example), are likely the best choices. Both own-rooted vines and vines grafted to rootstocks are extremely vigorous when planted in deep, fertile soils. Excessive nitrogen fertilization and irrigation should therefore be avoided. Vines are typically spaced 7’ to 8’ between vines and 12’ between rows.

Training and Trellising Systems

Initial observations indicated that Melissa required cane pruning for adequate yields. However, it also appears that adequate yields can be obtained with quadrilateral cordon training and spur pruning. This year, for example, mature spur pruned Melissa vines averaged between 35 and 45 clusters prior to thinning. Although 2000 is a very fruitful year in the San Joaquin Valley, the potential for spur pruning looks quite promising. We are currently conducting a trial at the Kearney Agricultural Center in Parlier to compare the productivity and fruit quality of cane and spur pruned vines.

Due to the cultivar’s high vigor, a large, expansive trellis such as the open gable may be preferable to the standard “T” system. If the open gable is employed, one option is to head train and cane prune the vines initially, reserving the option to retrain the vines to quadrilateral cordons in the future. With larger trellises such as the open gable, as well as proper canopy management practices, vine capacity and yield potential are typically greater compared to the standard “T” system. The primary advantage of gable system is that more canes or fruiting wood can be retained per vine without a proportional increase in canopy density. Eight to 12 canes per vine are typically retained on this system, depending upon vigor.

1 Nick Dokoozlian is an Extension Viticulturist in the Department of Viticulture and Enology at the University of California, Davis. Don Luvisi, Bill Peacock, and Stephen Vasquez are Viticulture Farm Advisors, University of California Cooperative Extension, in Kern, Tulare, and Fresno Counties, respectively. The authors thank the California Table Grape Commission for their financial support, as well as the growers who provided their vineyards for this research.
Vine Mealybug in Fresno County

Vine mealybug, *Planococcus ficus*, was introduced to Fresno County in 1998. We suspect that it came in on harvesting equipment or gondolas from Coachella Valley. First found in the Fowler/Del Rey area it has spread into nearby vineyards from the initial site of infestation, with man being the primary vector. Although vine mealybug looks similar to grape mealybug, *Pseudococcus maritimus*, they can be distinguished from each other. Vine mealybug is present at all the different life stages at any one time throughout the year (Fig. 1). Vine mealybug also overwinters at the base of the grapevine near the root system, surviving the coldest of winters. Vine mealybug also can be seen crawling over the canopy in greater numbers, and the adults are smaller than grape mealybug adults. Vine mealybug exudes honeydew much like grape mealybug but in much greater amounts and resembles candle wax, which leads to sooty mold covered canopies, spurs, and clusters (Fig. 2). Ants have been observed tending to both vine mealybug (Fig. 3) and grape mealybug, protecting them from predators.

Figure 1. Various growth stages (eggs, instars, adults) of vine mealybug can be found throughout the year.

Figure 2. Spurs can become totally infested with vine mealybug, encouraging sooty mold growth.

Figure 3. Ants have been known to tend vine mealybug colonies and protect them from parasites.

To learn more, attend the Vine Mealybug Field Day on Wednesday, June 14, 2000 (See opposite page)
**Vine Mealybug Identification and Control Field Day**

Sponsored by
UCCE Fresno County and Kearney Agricultural Center

Questions: Contact Stephen Vasquez @ 559-456-7285

One and a half hours PCA credit has been applied for.

**TOPICS TO BE DISCUSSED**

- Crop injury
- Identification
  - Contrast of characteristics between vine and grape mealybugs
- Biology
- Movement in/between vineyards
- Management
  - Monitoring
  - Control (biological and chemical)

**TIME AND LOCATION**

Del Rey, CA
Wednesday, June 14, 2000
10:00 a.m. to 11:30 a.m.

**SPEAKERS**

Richard Coviello, Entomology Farm Advisor, Fresno County
Walt Bentley, Integrated Pest Management Advisor, KAC
Kent Daane, Entomology Specialist, KAC
Stephen Vasquez, Viticulture Farm Advisor, Fresno County

**Tulare County Receives Funding Commitment From CDFA**

**Emergency Money to Fight Glassy-Winged Sharpshooter**

SACRAMENTO: Assemblyman Mike Briggs (R-Clovis) is pleased to announce that the Tulare County Agricultural Commissioner's Office today received full-funding commitments from the California Department of Food and Agriculture (CDFA) in the battle against the Glassy-Winged Sharpshooter. The CDFA approved the work plan submitted by the Tulare County Ag Commissioner's Office, which will mean more than $173,000 in immediate funding and nearly $363,000 in the next fiscal year, which begins July 1.

"I am pleased that Tulare County Agricultural Commissioner Leonard Kraft has received the assurances he needs to battle a pest that threatens to suck the life out of the Central Valley's wine, table, and raisin grape industry," said Assemblyman Briggs. "The money will help pay for increased trapping and immediate eradication efforts."

The emergency funding comes from SB 671, an emergency funding measure co-authored by Assemblyman Briggs and signed into law by Governor Davis. SB 671 allocates nearly $7 million in funding to fight pests like the GWSS. An additional $6.9 million in pest eradication funding is also included in the yet to be approved state budget for the coming fiscal year.

The emergency funding will allow the Tulare County Ag Commissioner's Office to pay for hundreds of extra traps and hire the personnel needed to fight the pest. In addition, the CDFA has already sent ten trappers to Tulare County to help with trapping and eradication efforts.

According to the CDFA, the pesticide Dursban will be used against the recently discovered GWSS infestation in Tulare County. Dursban is the most widely used home and garden insecticide, and can be purchased over the counter at nearly every home improvement or gardening store.

For more information about the latest funding developments, or to schedule an interview with Assemblyman Briggs, please contact Communications Director Bill Bird at (916)319-2029.
Pierce’s Disease “Hot Spots” in Fresno County

With the recent finds of glassy-winged sharpshooter (gwss) in Tulare, Fresno, and Madera counties, farmers have shown an interest in PD “hot spots” in Fresno County. From 1935 to 1941 severe PD outbreaks occurred in towns west of 99 (Fig. 1). Four-year-old Cabernet Sauvignon vines which I sampled last year near the Rolinda area tested positive for Xylella fastidiosa, the bacterium that causes PD. Sanger, Centerville, Del Rey, Reedley, as well as other towns near the foothills had outbreaks of PD in the '70's. Due to the new finds of gwss in the three neighboring counties (Fig. 2), it is imperative that proper identification and vigilance for this pest be taught to all vineyard personnel and any insect finds be brought to the attention of the local Ag Commissioner or UCCE farm advisor. Proper identification and distribution of new finds of gwss will aid in determining what control measures need to be taken.

Figure 1. Pierce’s Disease “hot spots” in Fresno County

○: Cities that experienced Pierce’s Disease during the ‘30’s and ‘40’s in Fresno County.
△: Cities that experienced Pierce’s Disease during the ‘70’s in Fresno County.

Figure 2. Current Distribution of GWSS in California
Melissa Table Grapes (Continued from page 1)

If the standard California “T” trellis is utilized, the quadrilateral cordon trained/spur pruned system offers several advantages over the head trained/cane pruned system. First, spur pruning is less complicated and generally less expensive than cane pruning. Second, because clusters are borne within a defined region of the canopy, fruit management practices (cluster thinning) and harvest are easier to perform. Basal leaf removal and other practices used to improve canopy microclimate are also easier to perform. Third, this system generally has lower humidity and in the fruiting region, an important consideration for a late ripening cultivar. Regardless of the pruning method, at present the standard “T” system can be covered with plastic (in order to protect fruit from fall rains) more easily than the open gable system. Under the standard “T” trellis, 8 canes are typically retained on head trained vines, while 28 to 36, 2-bud Spurs are retained on quadrilateral cordon trained vines (i.e. 7 to 9 Spurs per cordon).

Productivity

Because this is a new variety, little information is available regarding commercial production potential. Over the past two seasons, production in our field trials has ranged between 400 and 800 boxes (22 lb.) per acre for vines trellised to the standard California “T” trellis (head trained/cane pruned). We expect yields to increase as the vines mature, and as more information regarding optimum management practices is developed. Yields may also be higher when more extensive trellising systems, such as the open gable, are used.

Fruit and Crop Load Management

The cultivar appears to be moderately fruitful, thus cluster thinning may only be necessary in years of high bud fruitfulness. Due to the moderate size of the cluster tipping, or the reduction of cluster length, is normally not necessary.

Gibberellic Acid (GA)

Berry thinning. In many cases the natural fruit set of Melissa can be excessive, resulting in tight bunches. Our preliminary work suggests that approximately one gram of GA (gibberellic acid) per acre, applied at approximately 80% to 90% bloom, is sufficient to reduce fruit set and significantly increase berry length and weight. If combined with girdling at fruit set this application does not significantly reduce total or packable yield per vine, primarily due to the fruit sizing effects. Effects on return fruitfulness the following year are not well documented, but appear minimal (see table below). Note that this application had no significant effect on cluster number per vine, but that cluster size was reduced nearly 50%. Higher rates of GA result in excessive berry thinning (straggly clusters) and unacceptable reductions in vine fruitfulness the following year.

Berry sizing. The return fruitfulness of this cultivar is quite sensitive to GA, and rates as little as 10 g/ac applied at fruit set may reduce budbreak and return fruitfulness of both cane pruned vines the year following their application. High rates of GA applied at fruit set also appear to increase berry shatter at harvest. However, when either 10 or 20 g/ac GA is applied 2 weeks after fruit set the detrimental effects on return fruitfulness and cluster size the following year are greatly reduced (see table below). We are currently evaluating the impact of berry sizing applications performed at fruit set and at fruit set + 2 weeks on return fruitfulness and fruit quality.

Girdling

Trunk girdles applied at berry set (4-5 mm berry diameter) increase the berry weight and yield of Melissa 15% to 20%. Girdles applied at berry set also delay fruit maturity. Girdles applied at berry softening or veraison advance fruit maturity, but have no effect on berry size.

Canopy Management

Canopy management practices, including shoot thinning, basal leaf removal and summer pruning, should be performed as with Thompson Seedless. Excessive sunlight exposure of clusters leads to ambering or russetting (surface browning) of the berries.

Special Problems

Melissa appears to be quite susceptible to early bunch stem necrosis or inflorescence necrosis. This is a physiological disorder which results in clusters shriveling and drying prior to or shortly after bloom. In some cases the entire cluster is affected, while in others only the main rachis stem or isolated shoulders are affected. Affected tissues initially turn purple or black, then become brown or necrotic as they dry. Fruit set is reduced as a result, and affected clusters which remain on the vine appear straggly with large open areas (excessive shatter). We believe that this disorder is regulated by environmental conditions near bloom, and results from a temporary accumulation of ammonia in the rachis tissue. At present, little is known about the control of this disorder.

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Melissa Table Grapes (Continued from page 5)

The susceptibility of Melissa to this disorder seems to vary significantly, depending upon vineyard site and environmental conditions during bloom. We have observed the disorder in several vineyards over the past two years, with severity ranging from minimal (<1% of the clusters affected) to severe (over 50% of the clusters affected). Further observations are needed as more vineyards of this cultivar mature in order to determine the true extent of this problem.


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<td>0.42b</td>
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\(^{1}\) Numbers followed by the same letter within columns are not significantly different at the 5% level (DMRT).

\(^{2}\) Date represents the mean of six, two-vine replicates per treatment.

Meeting Announcements and Events in the Area

Vine Mealybug Identification and Control Field Day
Location: Del Rey, CA on Bethel Avenue between North Avenue and Central Avenue
When: Wed., June 14, 2000, 10:00 a.m. – 11:30 a.m.
Contact: Stephen Vasquez at (559) 456-7285
One and a half hours of PCA credit has been applied for.

San Joaquin Valley Viticulture Technical Group
When: Wednesday, July 12, 2000
Open to everyone but reservations required
Contact: Rob Roy at (800) 242-4494
Email: wecomal@lightspeed.net

Biological Integrated Vineyard Systems (BIVS)
Location: Brooks Ranch Restaurant, Chestnut/Highway 99, Fresno
When: Tuesday, June 6, 2000, 7:00 a.m.
Contact: Jo Harper (559) 242-4322

UC DAVIS UNIVERSITY EXTENSION CLASSES

Wine Stability Workshop: Lecture/Laboratory
Instructor: Roger Boulton
Location: UC Davis, East Conference Room, Memorial Union
When: Monday-Thursday, July 17-20, 2000, 8:30 a.m. – 3:00 p.m.
Contact: UC Davis University Extension at (800) 752-0881
Winegrape Variety Identification Workshop  
Instructor: Andy Walker  
Location: UC Davis, Viticulture Field House, Hopkins Road, Davis, CA  
When: Monday, July 31, 2000, 9:00 a.m. – 4:00 p.m.  
Contact: UC Davis University Extension at (800) 752-0881  

Rootstock Identification Workshop  
Instructor: Andy Walker  
Location: UC Davis, Viticulture Field House, Hopkins Road, Davis, CA  
When: Tuesday, August 1, 2000, 9:00 a.m. – 4:00 p.m.  
Contact: UC Davis University Extension at (800) 752-0881  

Publications from the University of California  

Raisin Production  
ANR Publication 3393  
280 pages, 77 color photos, 1999  
Price - $40.00 + tax and shipping  

Weeds of the West  
ANR Publication 3350  
640 pages, 1996  
Price - $35.00 + tax and shipping  

Grower's Weed Identification Handbook  
ANR Publication 4030  
272 pages, 1998  
Price - $80.00 + tax and shipping  

Publications are available at Fresno County Cooperative Extension, 1720 S. Maple Avenue, Fresno, CA (Located on Maple south of Butler Avenue--by the Fresno Fairgrounds). For questions or for a free catalog, call (559) 456-7285.  

Please make checks or money orders payable to UC Regents.  

Send to:  
UC Regents - Cooperative Extension  
1720 S. Maple Avenue  
Fresno, CA 93702  
Attn: Publication Order  

Introduction to Grapevine Canopy Management  
Instructor: Nick Dokoozlian  
Location: University of California Kearney Ag Center  
When: Thursday, August 17, 2000, 9:00 a.m. – 4:00 p.m.  
Contact: UC Davis University Extension at (800) 752-0881  

Grape Publications  

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The Original Vine Lines

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Printing: Leo Mariano
Senior Editor: Wanda Grove