



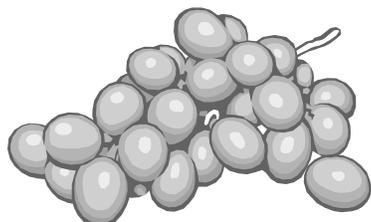
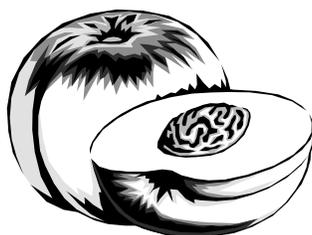
THE SCOOP

on fruits and nuts in Stanislaus County

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by Roger Duncan

Pomology and
Viticulture Advisor



Vine Mealybug Workshop for Stanislaus & Merced County Grape Growers

Stanislaus County Ag Center (Room H & I)
Corner of Crows Landing & Service Roads, Modesto
Saturday, May 21, 9:00 – 10:30

8:30 Registration, coffee & donuts
9:00 Program begins

Introduction

Roger Duncan & Maxwell Norton
UCCE Stanislaus and Merced County Farm Advisors

Vine Mealybug Identification and Control

Walt Bentley, Entomology IPM Advisor, UC Kearney Ag Center

Monitoring Your Vineyard

Kris Godfrey, Entomologist, CDFA

10:30 ADJOURN

1½ hours of continuing education credits are pending

For questions call (209) 525-6800

The Vine Mealybug Threat

This insect is an economic pest in many areas of the world. It was first discovered in California's

U.S. Department of Agriculture, University of California, and Stanislaus County Board of Supervisors cooperating

Coachella Valley in 1994. In the last few years it has been found in many of our state's grape growing counties. We DO NOT want it to become established in the northern San Joaquin Valley. Although VMB was identified in two Stanislaus County vineyards a few years ago, we think the infestations were eradicated because the growers identified the problem early and went after it.

The vine mealybug is a more serious pest than the grape mealybug we are used to. The grape mealybug is only an occasional pest and rarely reaches economically damaging levels in Stanislaus County winegrapes. In contrast, the vine mealybug appears in much larger numbers, causes significantly more problems and is more difficult to control. VMB produces more eggs, has a greater number of generations per year and can smother clusters, producing copious amounts of a sticky substance called honeydew.

Mealybugs are phloem feeders that can feed on all portions of the vine. VMB feeding can reduce vine vigor and lead to the collapse of clusters or whole spurs. Mealybug feeding and excretion of honeydew can lead to sooty mold and bunch rot. VMB has the potential of spreading some viruses from vine to vine.

What to look for. Just like other mealybugs, look for white, cotton-like insect bodies and egg sacks under the bark or in grape clusters, only in larger numbers than grape mealybug. Look for ants active on the vines as they move mealybugs around and protect them from predators. VMB produce copious amounts of honeydew. Badly infested clusters can look like they are covered with melted sugar or candle wax. If mealybugs are found, look at them with a lens. VMB do not have "tails" like grape, obscure and long-tailed mealybugs. VMB is found on all portions of the vine and is present year-round. During the winter, eggs, crawlers, nymphs and adults are found under the bark, within developing buds, and on roots. However, most VMB are found on the lower trunk near the soil line and on roots. As temperatures warm in

spring, VMB increase in numbers and become more visible. By late summer, VMB can be found on all portions of the plant, including canes, leaves and clusters.

Management. The best management tool is prevention. VMB cannot fly. Although ants can move mealybugs short distances and infested leaves can be blown into adjacent vineyards, long distance movement requires the activities of man (or birds). Due to the vast amount of honeydew produced, infested plant parts are very sticky. VMB hitches a ride on vineyard equipment, mechanical harvesters, people, clothing, picking buckets, - just about anything that comes into contact with infested plant parts. VMB can also be brought in on infested nursery stock or cuttings. In fact, we suspect this was the primary way VMB was spread through the state.

Closely inspect any equipment coming from other vineyards, especially if they have been used in infested counties. Clean your own equipment before transporting it to other locations. If you suspect you have VMB in your vineyard, bring a sample by our office, the Ag Commissioner's office or send it to a CDFA lab. I encourage grape growers and PCA's to hang pheromone traps in local vineyards to detect if VMB is present, especially if you have planted a new vineyard or replanted vines within the past five years. If VMB is verified, come after it with heavy guns and try to eradicate it before it becomes established. Although control strategies are still being refined, some treatments look promising. Lorsban® @ 4 pints per acre applied just prior to bud break is important to reduce populations. Growers should follow with Imidacloprid (Admire®) injected through the drip system in late May. Finally, apply dimethoate, Lorsban® or Applaud® after harvest. Timing is very important for good control.

To simplify information, trade names of products have been used. No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.

should train their crews to identify the damage. Come to the Vine Mealybug Workshop at our office

on Saturday, May 21. Learn to identify this pest and teach your workers what to look for. Pick up some free pheromone traps. Posters and other publications with excellent photographs and descriptions in English and Spanish will be available at the meeting.

It's Baaack...

Almond Anthracnose

We have been spoiled the past few years with fairly dry springs. Many almond and stonefruit growers got by just fine with only one or even no spring-time fungicide sprays. However, the 2005 spring has been one of the heaviest disease pressure years we have had in quite a while. Phytophthora root rot is fairly widespread, especially in the foothills. It was not difficult to find shothole in most almond and peach orchards in the county, sprayed or not. Even brown rot was pretty common and led to fairly severe losses in some local orchards.

Perhaps most alarming are the reports of anthracnose from North San Joaquin Valley almond orchards. As in past years, symptoms became obvious about two weeks after an infective rainy period. Up to now, most cases have been limited to a few strikes scattered throughout orchards with highly susceptible varieties. However, in the last two days, reports are coming in from orchards west and south of Modesto with fairly severe damage.

My concern is that anthracnose inoculum has built up to dangerous levels. As I am writing this newsletter (April 28), it is drizzling on and off outside and high temperatures are in the high 60's and lower 70's – perfect for anthracnose. The weather is supposed to stay like this for a few days, which means the trees will never dry completely. Growers with susceptible varieties certainly remember the widespread damage we had a few years ago when we had warm rains in late April and May. Growers should be prepared to protect their almonds for the remainder of this spring if a significant period of wetness with high temperatures in the mid 60's is predicted.

Although all varieties are susceptible to anthracnose, the ones to really watch include Thompson, Merced, Fritz, Monterey, Butte and Price. Nonpareil nuts are fairly tolerant of the anthracnose fungus, but appear to get more leaf infections than many other varieties. Abound[®] and Flint[®] both have excellent activity against anthracnose and can be used past the “five weeks after petal fall” cut off. Remember, you may have fewer nuts this year than in recent memory, but what you do have is worth more than ever before.

Powdery Mildew

The powdery mildew fungi that affect grapes and peaches are different species, yet their management in the field is very similar. These mildew fungi grow and disperse very quickly when temperatures are between 70° and 85° F and do not need (or even want) rain to infect your plants. If you feel comfortable outside with a T-shirt on, you can bet mildew is in high gear. A mildew model was established a few years ago to help grape growers manage their mildew sprays. When temperatures are mild (warm, not hot), mildew sprays should be applied on a tight schedule. On the other hand, if temperatures are too high or too low, growers can stretch their mildew spray intervals and perhaps save a spray or two. Although the model was developed for grapes, I think peach growers can use it as a good general guide also.

The model is simple to use as long as you have access to hourly temperature data. Hourly temperature data can be accessed for the Escalon area by going to the University of California Integrated Pest Management webpage (<http://ipm.ucdavis.edu>), clicking on weather data, and then selecting the Escalon weather station in San Joaquin County. All Stanislaus County weather stations only have daily weather summaries – you need hourly summaries to use the model.

The model is based on a point system that ranges from 0 – 100. Each day that we have 6 or more continuous hours of temperatures between 70° & 85° F, we add 20 points. If we have less than 6

hours between 70° & 85° or if temperatures exceed 95° F, we subtract 10 points. Total points can never go above 100 or below 0. For example:

	No. of Hours 70°-85° F	Daily Points	Total Points (Mildew Index)
Day 1	2	0	0
Day 2	5	0	0
Day 3	6	20	20
Day 4	8	20	40
Day 5	3	-10	30
Day 6	6	20	50
Day 7	7	20	70
Day 8	8	20	90
Day 9	6	20	100
Day 10	7	20	100
Day 11	2	-10	90
Day 12	0	-10	80

When the index is low (0 - 30), growers can comfortably double mildew spray intervals. For example, sulfur is usually applied on a 7 – 10 day interval. When the index is low (as it has been for most of this year so far), sulfur can be safely applied on a 14 – 20 day schedule. If the index hovers in the 40-50 point range, mildew sprays should be applied at moderate intervals (about every 10 days for sulfur). If the index stays at 60 points or more, intervals between sprays should be very short (every 7 days for sulfur). Last season the mildew index stayed near 100 points all spring. A few growers who stretched their mildew sprays had mildew problems. Due to the cool spring so far this year, the mildew index has been zero for most of this season. That means that growers could have saved money by skipping mildew sprays or significantly stretching intervals between sprays. For more information on how to use this model, contact me at 525-6800 or go to our IPM website at <http://ipm.ucdavis.edu> and click on interactive tools and models.

IPM Breakfast Meetings

Kathy Kelley-Anderson & I are continuing our Tree & Vine IPM Breakfast Meetings every first and third Wednesday of each month from March

through June. Please note the days have changed (they used to be on the 2nd & 4th Wednesdays). These meetings offer casual discussion on current insect and disease issues of fruit and nut crops. The meetings are held at the Peach Tree Restaurant, 2535 E. Whitmore Avenue in Ceres from 7:00 a.m. to 8:00 a.m. One hour of continuing education credit is offered at each meeting. Meetings are free (you buy your own breakfast) and open to any interested growers and pest control advisors.

Pest Telephone Hotline

Flight activity and optimal treatment timing for oriental fruit moth, peach twig borer, codling moth, & omnivorous leaf roller is available on our prerecorded Tree & Vine IPM Telephone Hotline. Information can be accessed 24 hours a day at 525-6841. Information is based on insect traps monitored by farm advisors in local orchards. The tape will be updated every Tuesday afternoon. The tape is intended as a guide only and growers should monitor their own traps because biofixes, trap catches and damage history vary among orchards.

Light Crop = Less Fertilization

Old leaves, blossoms and pruned limbs (in orchards where the brush is shredded) stay in the orchard and their nutrient components are recycled into the soil. Therefore, the largest loss of nutrients from an orchard by far is in the harvested crop. This means the demand for nitrogen and potassium fertilizer in mature orchards is largely driven by crop load. For fruit trees, where crop load is thinned to a fairly consistent level each year, fertilizer requirements do not fluctuate much from year to year. For almonds, where crop loads can fluctuate greatly from year to year, fertilizer requirements can vary considerably.

The old rule of thumb for nitrogen fertilization is about 1 pound of N for every 10 pounds of almonds that will be harvested. Therefore, if a grower estimates that an orchard has a 2000-

pound crop, he or she might apply about 200 pounds of N per acre, in order to replenish what the crop will use that year. In a year with a light crop, trees will use far less nutrients and growers should reduce their fertilization rates accordingly. Applying 300 pounds of nitrogen to a 2000 pound crop will not turn it into a 3000 pound crop, nor will it mean that next year's crop will be 3000 pounds. Be sure to take leaf samples in late June or July to monitor your nutrient levels. Leaf nitrogen should be between 2.2 – 2.5 %. Higher than necessary nitrogen levels will result in excessive growth, higher pruning costs, premature shadeout of lower wood, and increased brown rot and hull rot. If nitrogen is applied at a rate higher than a tree can take it up, it will leach through the soil profile and contaminate the ground water. Not only is that a waste of money, it is irresponsible.

Calculating nitrogen and potassium needs has become a little more sophisticated in the past few years. If you want to calculate exactly how much nitrogen and potassium fertilizer to apply in each orchard, you can use UC Davis Specialist Dr. Patrick Brown's simple internet calculator. Go to <http://fruitsandnuts.ucdavis.edu>, click on the Fruits & Nuts button, then choose almonds. You can then scroll down under "Production Management" to

"Nitrogen Fertilization Recommendation Model for Almond". Note that growers using drip or microsprinklers can reduce their fertilizer use substantially because of increased application efficiency.

Paint Late Planted Trees

Due to the wet winter, many growers were forced to put trees in cold storage and plant their new orchards in March or even April. Unfortunately, I have noticed that many of these late-planted trees were not painted. Late planted trees are especially susceptible to sun burn because there is insufficient foliage to shade the trunks from high intensity sunlight in April and May. Remember, tree cartons protect against rodents and herbicides, but do not adequately protect against sunburn. In fact, cartons actually can cause sunburn by reflecting intense sunlight onto the young tree right at the top of the carton. If you did not paint your late-planted trees, I suggest you apply a 50:50 mixture of water and white interior latex paint in a band that extends at least two inches above and below the top of the carton. Protecting the south and west sides of the tree is most critical.

28th ANNUAL NICKELS FIELD DAY

Nickels Soils Lab, Marine Avenue Orchard, Arbuckle, CA
Wednesday, May 11, 2005

8:30 a.m. Registration

Honey Bee Problems in Almonds, *Eric Mussen, UC Apiculturist*

Achieving Optimum Boron Nutrition in Almonds, *Franz Niederholzer*

Slip Plow Use in Orchards, *Allan Fulton*

Phosphonates for Root Rot Control & Injector Demo, *Greg Browne*

Nutrient Sampling in Tree Crops, *Scott Johnson*

New Projects at Nickels, *John Edstrom*

Late Season Navel Orangeworm Management, *Joe Connell*

Dust Reduction Efforts in Orchards, *Randal Southard & Ken Giles*

Luncheon Speaker: *Doug Youngdahl, CEO, Blue Diamond Growers*

12 p.m. Lunch by reservation will benefit Pierce Youth Foundation

Contact John Edstrom UCCE Colusa County. 530-458-0570



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- ⊕ 28th Annual Nickels Field Day



Wheelchair accessible facilities available. With advance request, efforts will be made to provide accommodations for persons with disabilities.