Crop Digest: Grapes

A second cool year seems to be in the making; and it continues to challenge all growers this season with high vigor vines, large canopies, a smaller than average crop, scattered disease and insect/mitre problems and a delayed harvest start date.

The positive aspect of the winter and spring rains was to mitigate the dry soil conditions that developed over the 2007-2009 seasons. There have been lots of windy days, but moderate temperatures until mid-July. This year’s total rainfall of 26 inches was only surpassed in 1998 when more than 30 inches fell all the way into July. Overall vine growth has been good, but the negative aspect of this year is that vine vigor was almost excessive and unfortunately the crop is generally light. The crop looks to be below average even after the average to slightly below average crop of 2010. There are exceptions; mostly younger vineyards of healthy vines.

After the hot spell in early July and average to slightly above-average daytime highs more recently, most weather stations are indicating total Growing Degree Days (GDD) are about 250 behind long-term averages and even 50 to 100 GDD behind last year (2010 being one of the five coolest in the last 33 years). Veraison is about 10 to 12 days behind the long-term average. The first Zinfandel berries with color only began to show on July 18. This is compared to more typically beginning to show color and berry softening around Independence Day.

The demand for Cabernet Sauvignon is improved dramatically along with red Zinfandel. Many other varieties such as Chardonnay and Pinot grigio (gris), Pinot noir, Sauvignon blanc, Muscat varieties and Riesling, among others seem to be in good demand. Even Merlot after a fair amount of removals and grafting is better situated in the overall market. The problem is the general economy is down and affects everyone, although local growers are still in a relatively good position compared to many areas of the state, especially those hit by severe frost in April, such as Paso Robles, the Central Coast and even the Delta area. Some of that effect in the Delta was seen mostly in the western part of the Lodi District.

Hot temperatures finally arrived in early July this summer, but so far very little indication of stressed vines and only scattered incidence of berry shrivel. Some of the scattered berry shrivel seen this year was possibly due to Botrytis, which seems to be drying up very quickly and not taking hold as harvest approaches.

Harvest looks like it will be significantly delayed from average, but with the light crop and continued warm weather, it may not drag on as long as currently feared. Last year harvest began about 7 to 10 days behind average, but curiously, most vineyards and most varieties in the central portion of the historic Lodi production areas harvested on schedule. Only the outlying areas of more recent history continued to be delayed as did most of the state in 2010.

Powdery mildew pressure has been light, but there have been a few problems in sensitive varieties such as Chardonnay. Insect pests and spider mite pressure appeared late and is scattered with some problems beginning to show as August begins, but district-wide seems to be average or light.

(Continued on page 2)
Newly arrived pests continue to be of concern. Vine mealy bug is still spreading through the county, so be aware of any new infestations, often indicated by sooty (black) mold or excessive honeydew in clusters, spurs or cordons. A high degree of ant activity in and around vines can also indicate problem spots. Good places to focus on a first look are where birds tend to perch or roost. The light brown apple moth (LBAM) continues to expand its territory in the south county around Manteca since it was found in 2009. It is very similar to omnivorous leaf roller; somewhat in appearance, also in the number of host crops, and definitely in damage; but also in control. It does appear in some areas of the state that LBAM is showing some effects of control by native beneficial insects. Learn more about LBAM at http://www.ipm.ucdavis.edu/EXOTIC/lightbrownapplemoth.html.

The north county quarantine area for European grape vine moth is still in effect, but if no more are found in the next month or two, growers might see a lifting of restrictions. If you have questions, stay in touch with the LWC and the Ag Commissioner’s office in that regard. Or you can check at: www.cdfa.ca.gov/phpps/PE/InteriorExclusion/egvm_quarantine.html. The Ag Commissioner’s staff is working hard to monitor both of these threats.

In addition, a new pest caused problems in cherries this year; the spotted wing drosophila (SWD), Drosophila suzukii. It is closely related to the vinegar fruit fly Drosophila melanogaster that has always been with us and is familiar to many from high school and college biology classes. The SWD is a concern because it can attack sound ripe fruit and has caused problems throughout the state in cherries, strawberries, raspberries and even blueberries and peaches. The situation is being monitored and an effort is being started statewide to prepare for this pest. We don’t know what other crops it may attack locally. If you see problems in your vineyard of bunch rot and vinegar flies call our office or the Ag Commissioner for more details. It is not a quarantined pest at this time, for complicated reasons, but needs to be followed.

This year a smaller grape crop for a second year in a row may be difficult for individual growers; as costs and regulations continue to increase, but it may set the stage for better prices in addition to excellent quality wines. There are lots of unknowns yet to unfold, but Lodi and San Joaquin County are in a good position to weather the stormy economic waters swirling around us.

Paul Verdegaal, Viticulture Advisor

Verticillium Wilt on Young Almond Trees

I visited an orchard last week in Manteca with second-leaf trees exhibiting symptoms of Verticillium wilt. Cool wet spring conditions favor Verticillium wilt on young almond trees. Leaves on one or more branches, often on only one side of the tree, will turn yellow and wilt early in the growing season. Affected young shoots typically resemble a shepherd’s hook (When shoot, branch, or trunk tissue of infected trees is cut, the vascular tissue and often much of the heartwood will display dark discoloration. Foliar symptoms usually appear (Continued on page 3)
only on young trees (first to fifth or sixth leaf). Older infected trees do not normally exhibit symptoms of Verticillium wilt, though yields may be reduced as a result. *Verticillium dahliae*, the causal fungus, can survive many years as hardened spores called microsclerotia, either in soil, in the debris of previous susceptible crops, or in roots of infected trees. The soil borne fungus invades tree roots and then grows up the xylem or water conducting tissues. The fungus eventually plugs up the xylem and shoots wilt because they are not getting enough water. Hot summer temperatures eventually cause the fungus to dieback in scaffolds, but it can continue to live on tree roots.

Verticillium naturally occurs in low populations in the San Joaquin Valley, but years of farming susceptible crops (tomatoes, cotton, cucurbits, strawberries, etc.), have dramatically increased these microsclerotia populations in our soils. When replanting in an area where susceptible perennials were previously grown, try to remove as many roots of the previous crop as possible, and have soil samples taken to determine inoculums levels. Soil samples should be taken from the top 12 inches, where populations will most likely range from 0-60 microsclerotia per gram. Wilt can occur with as little as 1-3 microsclerotia per gram and the ideal environmental conditions (cool wet soil). Pre-plant fumigation with chloropicrin or combinations of methyl bromide and Telone have reduced *Verticillium* populations. Solarization with clear plastic is also effective pre-plant, while black plastic can be used post-plant. To solarize soil before planting, cover moistened soil with clear UV-inhibited plastic in late spring, and leave the plastic in place during the hot summer months. To solarize soil after tree planting, cover the soil around the trees with black plastic and leave in place for one to two growing seasons. The rootstock Mariana 2624 has been shown to be somewhat more resistant to Verticillium wilt than peach or peach/almond hybrid rootstocks. Avoid interplanting young orchards with susceptible cover plants, such as cotton and tomatoes.

Brent Holtz, County Director
**Forage Production & Irrigated Pasture Weeds**

**Forage Production**
This was again an exceptional year with rainfall above normal and extended into the spring. It was very nice to see some areas of green grass still in late May as we finished up our spring production clipping. Both the west side and east side rangelands were well above the normal forage production reported in the soil surveys. The west side ranged from 120% to 170% of normal with one site almost 300% of normal. This equals roughly 2,000 lbs/acre up to almost 7,000 lbs/acre for the most productive site. The east side was equally as productive with most sites ranging from 110% to 250% of normal, ranging from roughly 1,900 lbs/acre upwards of over 5,500 lbs/acre.

Unfortunately we also saw an increase in the weed medusahead as we drove all of the back roads. I doubt that there is one ranch in the area that is not affected by medusahead to some extent. Just as a side note, there is a new program that will be offered through the Natural Resources Conservation Service that we here in Cooperative Extension are putting together. It will be an Integrated Weed Management Program (IWM) and will be a tool for you to use to identify, prioritize, and control three of our big range weeds: yellow starthistle, medusahead, and barb goatgrass. Please be sure to look in future Field Notes for more information as the program becomes available statewide.

**Irrigated Pasture Weeds**
Every year weed management should be a top priority on pastures. Ensuring that you do not have any new weeds slowly coming into your pasture, or small patches that are now starting to explode and take over the pasture. Weeds can be a nuisance by outcompeting more desirable forage species as well as sometimes being poisonous to livestock. One of these weeds that has moved from a low level nuisance to an explosion taking over irrigated pasture is buttercup, primarily bur buttercup or roughseed buttercup. Right now you can see a yellow carpet in irrigated pastures that are infected with buttercup. Buttercups can be poisonous to livestock, horses, goats, and cattle but poisoning does tend to be rare, mainly because livestock typically do not choose to graze buttercups.

Management options should be geared to reducing the seed base of the plant. Buttercups are an annual plant, so if you are able to control and reduce seed production this year, you should see less next year in your pasture. Three options to consider are: mowing, chemical herbicide treatment, and changing grazing management. Mowing early before seeds are developed is one easy management option. Using whatever mower you have available, tractor pulled mower, lawn mower (riding or push), or a weed eater can all be successful at helping control weeds. Herbicides typically are what people want to go to first. But they may not be the best tool to use, they may be a part of the strategy. Most chemicals that will work well on buttercups will also damage your clovers as well, so careful consideration should be taken when deciding to move forward with chemical control. If you are interested in discussing chemical control, feel free to call me to discuss options.

The last option for controlling buttercups, and any other weed, is good pasture management. Weeds normally do not compete well in an established pasture. Having the flexibility to change grazing management where forages can be not grazed as heavily early in the season can allow grasses to outcompete and shade out buttercups that are just starting to grow. Healthy pastures are resistant to weeds of all kinds. Have only a few acres and think there is nothing you can do? Try using portable electric fencing to easily and cheaply create pastures for a rotation system. Good pasture management is the best option for long term health of the pasture and weed resistance. The other tools can be used to help you get there faster, but nothing can replace the value of good management for providing a healthy pasture for your livestock.

**Theresa Becchetti,**
Livestock and Natural Resource Advisor
Managing for More Milk

You cannot simply take one dairy’s diet, feed it to another herd, and expect the same production results. The reason - there are many variables that impact a cow’s ability to make milk. While nutrition is extremely important, and the largest cost of producing milk, it is only one of a number of factors that needs to be routinely evaluated. Table 1 is the typical time budget for a lactating cow (housed in freestalls). Cows spend almost half the day lying down, followed by eating/drinking, standing in the stall or alley, and milking. Within each of these areas is an opportunity to improve management. Let’s take a look at a few areas where small improvements in management may find you more milk.

Table 1. Dairy cow time budget (USDA, 2007)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours/Day</th>
<th>Percent of Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lying</td>
<td>11.3</td>
<td>47%</td>
</tr>
<tr>
<td>Eating</td>
<td>4.4</td>
<td>18%</td>
</tr>
<tr>
<td>Drinking</td>
<td>0.4</td>
<td>2%</td>
</tr>
<tr>
<td>Standing-Stall</td>
<td>2.9</td>
<td>12%</td>
</tr>
<tr>
<td>Standing-Alley</td>
<td>2.4</td>
<td>10%</td>
</tr>
<tr>
<td>Milking</td>
<td>2.6</td>
<td>11%</td>
</tr>
</tbody>
</table>

Feeding Management

Just as important as what you’re feeding is how you feed. In a study published in the Journal of Dairy Science, three of the most influential milk production variables (outside of the ration) were related to feeding: stocking density, feeding for refusals, and pushing-up feed. These may seem like common sense practices, but all three are often overlooked on dairies. Keeping an accurate pen count and allowing for adequate feeding space are imperative to ensuring adequate dry matter intake. When animals are overstocked (more cows than feeding space), there is greater potential for sorting to affect subordinate cows in the pen. Dominant cows eat first, leaving subordinate cows to eat the sorted feed rather than the formulated ration, thus compromising milk production and animal health.

In times of high feed costs, the natural (but not necessarily correct) response is to cheapen rations. One way to accomplish this is to reduce the amount of feed offered to limit refusals. In a 2009 California feeding management survey, 58% of producers reported not feeding for refusals. Unless pen counts are spot-on, and your feeder has turned weighing ingredients into a fine art, you may be underfeeding animals when not feeding for refusals. In that case, the cost of limiting feed intake (thus limiting production and affecting health) outweighs the savings in feed.

Keeping feed in front of cows is another important factor when managing for more milk. This is accomplished by feeding multiple times per day, keeping feed pushed up, and/or a combination of the two. Lack of feed, or feed not within cows’ reach should not be a limiting factor for milk production.

Milk is about 87% water, making water an important (and oftentimes overlooked) nutrient. If you see cows waiting to drink, you need to install more watering space. The majority of free water intake is consumed shortly after milking, so ensure that animals have abundant access to clean, cool water. Both water quantity and quality are important! Water troughs should be cleaned at least weekly, a practice only 40% of producers reported in the 2009 survey.

(Continued on page 6)
Resting Area

We’ve already covered stocking density as related to feeding management, but it is also important for “cow comfort” and adequate lying time. Cows need a clean, dry environment, with adequate “cushion” regardless of bedding type. Studies have shown that lying time increases with increased bedding depth. Cows standing in stalls rather than lying down can be an indication that improvements are needed. Neck rail placement in freestalls is another area where improvements may be beneficial. Table 2 provides recommendations for neck rail placement based on the size of the animals being housed. When neck rails are placed too far forward or too high in the freestalls, animals will stand and urinate/defecate in the beds, creating a hygiene problem. Neck rails placed too far back or too low can prevent animals from utilizing freestalls.

Table 2. Recommendations for neck rail placement by size of animal

<table>
<thead>
<tr>
<th>Stall Dimension (inches)</th>
<th>Body Weight Estimate (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1200</td>
</tr>
<tr>
<td>Height below neck rail</td>
<td>46</td>
</tr>
<tr>
<td>Horizontal distance</td>
<td>60</td>
</tr>
<tr>
<td>between rear edge of</td>
<td></td>
</tr>
<tr>
<td>neck rail and inside of</td>
<td></td>
</tr>
<tr>
<td>rear curb</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from: Dimensions and Design Tips for Free Stall 10.21.05. Nigel B. Cook MRCVS, University of Wisconsin-Madison.

Take Home Message

The objectives of any dairy are to make milk, and make money. Cows searching for adequate resting areas, eating a sorted ration, standing in holding pens for an extended period of time, etc., do not make more milk. The cheapest milk increases are not found by decreasing the cost of your diet, instead they fall into eliminating management bottle necks that decrease productivity on your dairy.

Jennifer Heguy, UCCE Stanislaus & San Joaquin Counties Dairy Advisor, and Jed Asmus, Independent Nutritionist

Calendar of Events

Second Annual Overhead Irrigation and Conservation Tillage Twilight Field Tour and Barbeque
September 8, 2011  4pm - 7pm
University of California's West Side Research and Extension Center, 17353 West Oakland Avenue, Five Points, CA  (559) 884-2411
Learn how San Joaquin Valley farmers are using overhead, mechanized, automated irrigation and conservation tillage, controlled traffic systems to produce crops more cheaply and with less labor while also improving soil quality.
*Introduction program to overhead irrigation
*Overhead irrigation farmer panel
*Tour of overhead irrigation and CT research fields
*Barbeque dinner
*Conservation Tillage Farmer Innovator and Industry Awards Ceremony
*Overhead Irrigation Farm Tour

for more information: mitchell@uckac.edu

Panel Discussion of Entomology in Strawberries and Caneberries in 2011
September 13, 2011  7:45 am until noon
Organized by University of California Cooperative Extension, Santa Cruz County, and the California Strawberry Commission at:
UCCE Santa Cruz County
1432 Freedom Blvd
Watsonville, CA 95076

Meeting Agenda can be viewed here: http://cesantacruz.ucdavis.edu/files/117060.pdf
Select San Joaquin presents

AgVenture 2011-12

October 12, 2011 Starting @ 9 am, MUSD Farm - Manteca
January 25, 2012 Starting @ 9 am, San Joaquin County Fairgrounds
March 7, 2012 Starting @ 9 am, Lodi Grape Festival Grounds

Volunteers Needed

Area Third Graders will be Attending an Educational Field Trip to Learn about Agriculture and Nutrition.

The children will tour the event from 9 am to 1 pm

We Are In Need Of

80 Plant, Animal & Farm Machinery Displays
Plus 200 Volunteers to Accommodate
4,000 Students

To Volunteer Please Contact

Janet Dyk • Mobile: (209) 480-6104 • Office (209) 823-5013
ssjagventure@gmail.com

Sponsored by:
San Joaquin County Board of Supervisors • San Joaquin County Ag Commissioner’s Office
San Joaquin County Office of Education • San Joaquin County Farm Bureau
California Women for Agriculture • Manteca Unified School District
Food 4 Less • Rancho San Miguel Markets

The AgVenture will showcase San Joaquin County’s Agricultural Industry and the Benefits of Making Healthy Eating Choices. Students will form a connection between the food on their plate and the crops grown in our County. They will also become aware of the importance of agriculture in their daily lives.
The survey is online at:  http://ucanr.org/hrwsurvey

Purpose of the Survey:
The goal of this survey is to determine grower, applicator, and pest control advisor perceptions and experiences related to herbicide-resistant weeds in perennial cropping systems. This research is being conducted as a part of a larger project (Evolution and Management of Herbicide Resistant Weeds) which involves several UC Davis, UC Cooperative Extension, and Fresno State University faculty.

Methods:
We will conduct a survey of at least 1,000 weed managers who work in California orchards and vineyards. In late 2010 and early 2011 we used a series of in-person surveys at grower meetings. To expand upon that technique, we developed this web-based survey which has a similar format and will be open from June 2011 through February 2012. Participation is voluntary, all data will be collected anonymously, and no personally identifying information will be kept or shared.

The survey, which should only a few minutes to complete, includes a series of simple questions to gauge:

1. Demographics (respondent farming system, approximate acreage, and region)
2. Weed control practices used
3. Experience and concerns with herbicide resistant weeds

Impact on Weed Management:
Once complete, the results of the survey will be presented to scientific and extension audiences and will be used to help develop future research directions and extension education programs to benefit growers and pest managers. Compared to annual cropping systems in other parts of the country, there has been very little research on understanding the production impacts, economic consequences, or management changes imposed by herbicide resistant weeds in the unique perennial cropping systems in California.

Drawing for Weed and Crop Production Books
After the survey is completed in February 2012, we will draw the names of 15 participants to receive their choice of several UC Publications related to weeds, integrated pest management, or tree and vine crop production. These high quality publications are 150-250 pages and usually are sold for $20-80. To participate in the drawing after completing the survey, you will have the option to go to another webpage where you can enter your name and contact information for the drawing as well as your preferred UC book. This information will not be directly associated with the survey responses to preserve anonymity.

Thank you for your participation.

Brad Hanson; UC Davis Cooperative Extension Weed Specialist
California’s Conservation Tillage, Cropping Systems and Irrigation Workgroup presents...

The Second Annual Overhead Irrigation and Conservation Tillage Twilight Field Tour and Barbeque

Thursday • September 8, 2011 • 4pm - 7pm

at the University of California’s West Side Research and Extension Center in Five Points, CA

17353 West Oakland • Five Points, CA 93624 • (559) 884-2411

Learn how San Joaquin Valley farmers are using overhead, mechanized, automated irrigation and conservation tillage, controlled traffic systems to produce crops more cheaply and with less labor while also improving soil quality.

- Introduction program to overhead irrigation
- Overhead irrigation farmer panel
- Tour of overhead irrigation and CT research fields
- Barbeque dinner
- Conservation Tillage Farmer Innovator and Industry Awards Ceremony
- Overhead irrigation Farm Tour

For more information: mitchell@uckac.edu
Notes from the Field

August 2011

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The University of California working in cooperation with San Joaquin County and the United States Department of Agriculture