

Sonoma County Winegrape Commission

IPM Meeting Notes by Laura Breyer, MS, PCA May 12-14, 2015

Welcome and Announcements

Old Business

- At last month's meeting in Sonoma Valley there was a question regarding spraying oil and whether it removes the bloom (the white waxy coating) from grapes. In normal spray applications it does not remove it, but flattens the wax scales. Hand washing fruit with oil to eradicate mildew may remove bloom.
- Suppress herbicide worked pretty well at 9% rate on medium sized weeds for Eric Pooler. UC weed adviser John Roncoroni said he's had it in trials and it works well. At a Napa site, it did not control bindweed very well. However, it was a 6% rate applied to a thick mat of vegetation in cool possibly damp conditions. The grower may try again with a higher rate in warmer dry conditions.
- Do grapes need chill hours? This question came up at the Russian River meeting in response to speculations regarding poor mid-cane bud push this year and UC Adviser Larry Williams was noted as a resource. His response to the question of whether grape vines need chill hours:
Vitis vinifera grapevines are grown in the tropics where there is no chilling units. However, budbreak on those vines is very erratic and many blind buds mostly mid-cane (I have visited vineyards in the tropics). The same thing occurs in the Coachella Valley where again there is little if any chilling units (erratic budbreak and blind buds). Growers in the Coachella Valley used to leave many more spurs and/or canes on their vines due to the lack of bud push and low bud fruitfulness.

What I understand is that to get more uniform budbreak growers in the tropics used to spray ethephon (an ethylene releasing compound at very high concentrations) just after pruning which would help some. They would also go along a cane and 'crack it' (sort of bend the cane, until they heard a crack, between nodes along its length). However in the 1990's a compound called hydrogen cyanamide (H₂CN₂) was found to alleviate the lack of chilling units to assist in advancing the time of budbreak and increase the number of buds that broke. Hydrogen cyanamide is now always used after pruning grapevines in the tropics and the Coachella Valley. Growers in the Coachella Valley and other desert locations around the world will use evaporative cooling (spraying or misting the vine's canopy to wet the canes canes) prior to pruning the vines. Evaporative cooling will reduce the temperature of the buds and assist in helping the vines' chilling requirements. This can be done due to the low relative humidity (high vapor pressure deficit) in those areas (deserts).

So, do grapevines have a chilling requirement? Yes. However, the total hours needed are much less than say for deciduous tree crops. I tried using hydrogen cyanamide here in the San Joaquin valley and results were no different than that of the control (no H₂CN₂). This indicates that the chilling units here are adequate for grapevines. There are some papers out there that indicate the approximate chilling units required by grapevines but as of now, I've been unable to locate them. I'll keep looking. I looked at the temperature data from the Windsor CIMIS station (from 1 November to 1 March) and the low temperatures looked reasonable for chilling (but I didn't quantify it!). I should also point out that chilling units accumulated for vines or trees may be negated by high temperatures during this period.

Heads up

- Mildew starting to show up. If you had to stretch an interval past a scheduled spray date (say for wind), assume you have it and adjust your program accordingly. It won't become visible until it's pretty well established, so don't try to judge whether it's present or not right after a missed spray date. Being proactive in your program will help prevent infestations.
- Fluvellin and morning glory (field bind weed) are starting to bloom, so now is the time to manage them before they set seed. Morning glory starts sending energy towards the roots at bloom, so systemic herbicides have a chance of doing more than just burning the tops off.

- For organic eradication of morning glory or Bermuda grass, it has to be dealt with every two weeks during the growing season, over several years. Mechanical or organic contact herbicide.
- Mowers and other under-the-vine mechanical weed management can bruise phloem through the bark. A hard hit by a mower can kill phloem without disturbing the outer bark. It becomes visible as a barkless dead spot over time.
- Watch young vines for water status
- At the Alexander Valley meeting, Mike G, Mark H and Scott Z all agreed that vines on 039-16 have more death to PD than other rootstocks. I shared this with Andy Walker and he replied that ungrafted 039-16 did show greater susceptibility than some other common stocks, but it hadn't been confirmed for grafted vines in the field.
- Vines more stressed with drought – mites love hot stressed dusty vines.
- More dead arm disease likely due to drought and high crop stresses. My observation is that weak vines seem to suffer more dead arm, perhaps they are less able to heal.

Monitoring Points

- Virginia Creeper Leafhopper
 - ADULTS: Our normal Grape Leafhopper adult has a spot on each shoulder. Virginia creeper adults do not have that. You can catch leafhopper adults on your hand with duct tape wrapped sticky side out. Or yellow sticky traps such as used for bluegreen sharpshooter monitoring.
 - EGGS: VCLH eggs are covered with a faint whitish film, and are often laid several right next to each other.
 - NYMPHS: VCLH nymphs have several prominent red dots on their back.
- Grape leafhopper nymphs are just emerging in the warmer areas. Monitoring consists of 5 to 10 basal leaves selected from random vines, counting the nymphs and dividing by the number of leaves. First instar nymphs are very small, about 1 mm. Do this every week and see the population peak in about 3 weeks. If you are using oil for control, aim for the peak, or bracket before the peak and after. If you wait too long, you will miss the nymphs. Oil doesn't kill adult leafhoppers. Coverage on the underside of leaves is critical for oil to work.
- Anagrus wasps parasitize leafhopper eggs. Look for a 1 mm bean-shaped red blister on the leaf.
- Bluegreen sharpshooter trap counts have dropped off, so the spring flight into the vineyard is about at an end. They will be laying eggs, and those eggs hatching in the next weeks.
- Vine mealybug: Look for wet spots on the trunk, particularly at the base near the graft union. Peel back the bark to see the mealybugs, or if there are a lot of ants on the vines, the bark won't be wet. The wetness is honeydew that the ants eat. When a vine is suckered, sap bleeds look just like the wet honeydew spots. These are the adult mealybugs. The immature mealybugs can be very small, like a speck of barely visible dust.

VMB differ from other mealybugs in a number of ways, one of which is the presence of all stages, adults and immatures, are usually present. Guys working on vines can easily have little VMB hitchhikers and give them a lift to new places without knowing.
- Watch for botrytis strikes on vines in tubes.
- Thrips moved onto some vines after cover crop mowing. If the vines normally grow well, then any early damage will likely not be an issue. Thrips help control mites.

Miscellaneous

- Mildew index has been up and down, and it seems that everyone uses the index either directly by looking at the numbers, or indirectly using experience and estimating based on their site's weather.
- If you don't have grape leafhopper problems it's thanks to beneficials, and particularly the tiny Anagrus wasp parasite. Some relatively recent work by Houston Wilson, UCB, found Anagrus coming from:
 - coyotebrush (*Baccharis pilularis*),
 - California buckeye (*Aesculus californica*),
 - willow (*Salix* spp.).

All three of these had more Anagrus than blackberry in this study. Alder (*Alnus* spp.) also had high levels of Anagrus. Anagrus spend the winter with leafhoppers other than grape leafhopper, so finding those habitats and incorporating them into intentional insectary plantings may be a way to reduce chronic GLH issues.

More work needs to be done to confirm and refine these findings. It is a good step towards improving biological control of grape leafhoppers.
- John Kiger had what looked like crown gall that was growing over budding tape. Normal callus tissue can look similar. He had St. George from Novavine and 110R from Vintage – he is checking which rootstock had it.
- Other growers have noted more crown gall, likely from harder winter freeze 2013/2014. It generally isn't a notable issue here, but can be severe in really cold growing regions.

- Lyle and Karen mentioned Bargain Basement deals on fungicides online, but they were rightfully wary about it.
- ProTone (Valent) is abscisic acid used by table grape growers to advance ripening. There is some work showing it can decrease frost damage when applied sometime early dormancy. It may be useful for improving color on blocks affected by red blotch virus.
- Replanting into old vine site can be difficult for a new vine to thrive. This is called replant disease. Pathogen loads in the soil increase over time, and new vines can be overwhelmed. In the old days, methyl bromide disinfested the soil. Also depleted the normal benign and beneficial organisms.

Fallowing is a way to help reduce the old pathogen population. Without the vines, the specific pathogens will decrease over time. They will not likely ever completely disappear, but reducing the level can help new vines establish better.

Another approach is brassica seed meal. This is a variation on mustard cover crops intentionally planted for soil-borne pathogen control. With seed meal, the application is more precise. Farm Fuels out of Watsonville sells Brassica seed meal. USDA in Washington State has done research for apple replant disease using seed meal and had favorable results.

- Jon D rents sheep for weed management.