

## Vine news

### Viticulture Information News, Week of 20 July 2015

#### Columbia, MO



#### Weeds, Water, and Vine Nutrition

Weeds within the vine rows could be considered a friend or foe this growing season. On the friend side, weeds do remove a lot of soil moisture. For example, common lambsquarters (*Chenopodium album*) uses 79 gallons of water to produce 1 pound of dry matter and common ragweed uses 109 gallons of water to produce 1 pound of dry matter. Weeds are very good at extracting soil moisture and certainly with the excessive rainfall that most areas of Missouri have experienced in May and June a few extra weeds may be beneficial. In addition, weeds within the vine rows also help reduce soil erosion. However, as the grape crop matures and the berries enter veraison there maybe some problems encountered from excessive weed density and growth.

Weeds compete with the grape crop for soil nutrients. Different weed species respond and utilize soil nutrients differently. In general, most weeds readily consume nutrients more readily than crops. In addition most weeds have luxuriant consumption of added nutrients, meaning, weeds will take up added nutrients even if they are not needed for growth and development. Therefore the application of limiting nutrients to a crop is not corrective action for limited or no weed control.

If you believe your vines are showing symptoms of a nutrient deficiency, a petiole sample could provide you the answers about the potential problem. Petiole samples can be taken any time when trying to diagnose a potential nutrient deficiency. When trying to diagnose a potential nutrient deficiency using petiole sampling, you need to submit two petiole samples. The first sample should be petioles from leaves that were exhibiting symptomology. The second petiole sample should be from leaves of healthy plants that are of a similar age class as the symptomatic leaves. The results will provide you a comparison of healthy vines to symptomatic vines.

Last week I had the opportunity to visit a couple vineyards and came across a couple of visual nutrient deficiencies. The first problem was phosphorous deficiency and the second magnesium deficiency. For those of you that did not petiole sample at bloom this season there still is an opportunity to get this completed this growing season. Petiole sampling at veraison and associated analysis will provide you with the nutrient status of your vines. If you have not determined the nutrient status of your vines in over a year then consider petiole sampling at veraison. If you petiole sampled at bloom there is no need to petiole sample at veraison. I would recommend submitting soil samples at the same time as petiole samples. A soil analysis report provides added information that can help troubleshoot potential nutrient deficiency problems.

See page 2 for details on petiole sampling

## Petiole Sampling Reminders

A few reminders of what to sample and when to sample for petiole analysis.

**When to sample for tissue analysis.** There is differing opinions on this topic. If you have been sampling consistently over time at a specific phenological stage such as full bloom or veraison then I would suggest that you continue this trend. This will allow you to chart the nutrients over time.

The trend in the industry is to sample at full bloom. Full bloom is when 50% of the inflorescences have shed at least 50% of their caps.

**What to sample.** Sample 50 to 100 petioles. Petioles are the structure that connects the leaf blade to the shoot. Place the petioles in a paper bag. Varieties should be sampled separately. Do not mix petioles from one grape variety with another. Grape vines selected for sampling should be representative of the vineyard block. Take one leaf per shoot and no more than 2 per vine. The leaves should be free of pest damage.

At full bloom petioles should be collected from leaves that are directly opposite the first or second basal flower clusters (See Figure 1)

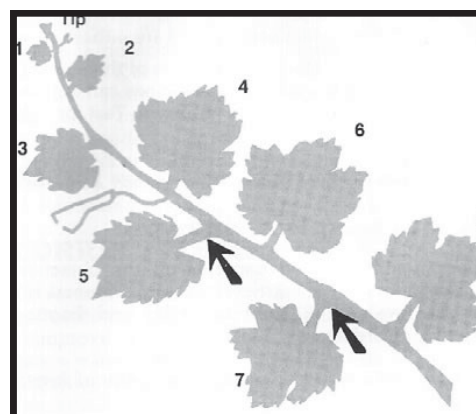
At veraison petioles should be collected from the youngest fully mature leaf which typically is the 5th to 7th leaf from the shoot tip (See Figure 2). If grape vines have been hedged or skirted collect petioles from primary leaves near the skirting or hedging. Avoid collecting petioles from leaves that are from lateral shoots.

## Troubleshooting suspected nutrient deficiencies

Collect 50 to 100 petioles from leaves displaying nutrient deficiency symptoms regardless of leaf location on the vines. Also collect 50 to 100 petioles from leaves of healthy vines. Try to collect leaves from healthy vines from a similar location as the leaves collected displaying nutrient deficiency symptoms. Petiole sampling to diagnose suspected nutrient deficiencies can be done anytime during the growing season.



**Figure 1. At full bloom collect petioles from leaves directly across from basal flower clusters.** Photo credit: University of Minnesota.



**Figure 2. At veraison collect petioles from the youngest mature leaves, leaves 5 to 7 from the shoot tip.** Photo credit: University of Minnesota.

From the Mailbag



**Magnesium deficiency**



**Black rot**



**Japanese beetles**



**Grape Root Borer. Adults are now flying and will lay eggs in weeds near vines. Removing weeds around the base of vines reduces sites for egg laying.**



Phenology from Gasconade County



Chambourcin on July 20, 2015. Gasconade County



Vignoles on July 20, 2015. Gasconade County

## Cumulative Growing Degree Days for the Seven Grape Growing Regions of Missouri from April 1 to July 20, 2015.

Region	Location by County	Growing Degree Days <sup>1</sup>		
		2015	2014	30 Year Average
Augusta	St. Charles	2005	1920	1914
Hermann	Gasconade	1912	1799	1832
Ozark Highland	Phelps	2098	1991	1961
Ozark Mountain	Lawrence	2136	1984	1997
Southeast	Ste. Genevieve	2114	2001	1971
Central	Boone	1903	1789	1878
Western	Ray	1860	1840	1838

<sup>1</sup>Growing degree days at base 50 from April 1 to July 20, 2015. Data compiled from Useful and Useable at <https://mygeohub.org/groups/u2u/tools>. Click on link below to determine growing degree days in your area.

**To determine the number of growing degree days accumulated in your area since April 1, click this link [Search for GDD at your location using this tool](#).**

Please scout your vineyards on a regularly scheduled basis in an effort to manage problem pests. This report contains information on scouting reports from specific locations and may not reflect pest problems in your vineyard. If you would like more information on IPM in grapes, please contact Dean Volenberg at 573-882-0476 or volenbergd@missouri.edu

### Grape Berry Moth (GBM) Update

We are still a ways off from the third generation of GBM. As of July 13, 1,630 (Cape Girardeau County), 1,451 Boone County, and 1,352 (Gentry County) growing degree days have accumulated since May 15 at base 47. A total of 1,620 growing degree days need to accumulate before egg laying begins for the third generation.

Third generation egg laying began in Cape Girardeau on Monday July 13 with 1,631 GDD at base 47. In Central Missouri, 3rd generation egg laying began on July 18 with 1,629 GDD at base 47. In Gentry County 1,573 GDD at base 47 have accumulated as of July 20 and egg laying is predicted to begin on July 22.



Grape berry moth adult captured in a pheromone trap.