

## Vinews Viticulture Information News, Week of 2 July 2018 Columbia, MO



### Disease Outlook

This week there has been very little disease occurring. For vineyards that have received scattered rain from pop-up thunderstorms, continue to be vigilant in scouting for diseases that need free-water for disease development. At this point in the season, focus should be on scouting for downy mildew, Black rot, and anthracnose. For those vineyards that have missed rainfall events, focus scouting on powdery mildew. Although high temperatures this week have likely hampered the development of most diseases, it is important to be vigilant.

Mike White from Iowa State University reported that *Botryosphaeria* spp. a grapevine trunk disease was found throughout some surrounding states. These observations were made by Dr. Richard Smart in Iowa, Nebraska and Minnesota in late June 2018. This reminded me of some survey work completed in Missouri and Arkansas about eight years ago. In a survey of Missouri and Arkansas vineyards in 2006 and 2009, vines were surveyed that had characteristic dieback symptoms. Results of the survey showed that *Botryosphaeria* spp. were the most prevalent followed by *Pestalotiopsis* spp. isolated from wedge shaped cankers. Dr. Smart's observations and Urbez-Torres et al. 2012 survey results suggest that moving forward, the time has come to fine tune management for trunk diseases.

Urbez-Torres, J. R., F. Peduto, R. K. Striegler, K. E. Urrea-Romero, J. C. Rupe, R. D. Cartwright, and W. D. Gubler. 2012. Characterization of fungal pathogens associated with grapevine trunk diseases in Arkansas and Missouri. *Fungal Diversity* 52:169-189.

### Insect Outlook

Japanese beetles continue to be problem. There definitely is a lot of variability in population numbers from one vineyard location to another. If you see a limited number of Japanese beetles at one vineyard site do not assume another site, even within a short distance away will have low beetle numbers. You need to scout and apply management practices if damage is becoming harmful to the grapevines. Japanese beetles are progressing northward in the state. A number of regional Horticulture Extension Specialists have reported increasing numbers of Japanese beetles in northern Missouri counties.

## What is the value of an acre of grapes?

I often get this question from clientele whose vineyard has been damaged by herbicide drift. There are a lot of variables to consider when coming up with a cost of an acre of grapes. For example: the grape cultivar, the age of the vine, bearing or non-bearing, amount of damage to the vines, and what is the long term impact of the damage to the grapevines.

When observing herbicide drift in vineyards, I have seen a lot of variability. Damage ranges from defoliated vines to a few leaves having herbicide injury symptomology. A common question posed to me is if I can predict from the damaged observed on the future health and longevity of the grapevine. The simple answer is no. The only exception is when I observe dead vines, obviously next seasons growth will be non-existent. If the damage to vines is variable in the vineyard, consider using some flagging tape to mark grapevines that have extreme herbicide symptomology or have been defoliated. That way you can do follow-up observations next spring and summer.

When considering the cost of an acre of grapes, I like to start at the beginning and work backwards. If a vineyard is destroyed by herbicide drift what is the cost to reestablish the vineyard? After that we calculate the cost of lost production. Finally we can calculate the value loss of the value added product, the wine.

Tools to help calculate vineyard establishment costs. The [Agricultural Marketing Resource Center](#) has winery and vineyard feasibility workbooks. The vineyard feasibility workbooks will estimate vineyard establishment in three different training systems; High trellis, Geneva double curtain, and vertical shoot position. Most all input data can be changed to customize to your operation. The workbook provides both income and expenses for a one-acre vineyard over a 13 year period.

An example from the workbook for a high-wire trellis system with 10-foot row and 8-foot vine spacing or 545 plants/acre. The cost at the end of year 1 is estimated at \$8,823. The accumulated expense is \$10,960 and \$14,029 for year 2 and 3 respectively.

Vine age determines the crop load. In the third year grapevines should be managed to produce about 40% of a full crop. In the fourth year vines should be managed to produce 80% of a full crop. In the fifth year vines are managed to produce a full crop. The yield goal is dependent on the grape cultivar and the grapevine vigor at the vineyard site.

Let's take a look at an example. The cultivar is Chambourcin with a yield goal of 4.5 tons/acre. In year 3, the grapevines should be managed to produce  $4.5 \text{ tons/acre} \times 0.4 = 1.8 \text{ tons/acre}$ . Similarly, in year 4,  $4.5 \text{ tons/acre} \times 0.8 = 3.6 \text{ tons/acre}$ . Now we will move on to wine production.

A ton of grapes produces 150 gallons (range 120 to 180) of finished wine. In year 3,  $1.8 \text{ tons/acre} \times 150 \text{ gallons/ton} = 270 \text{ gallons}$ . In year 4,  $3.6 \text{ tons/acre} \times 150 \text{ gallons/ton} = 540 \text{ gallons}$ . In year 5 and beyond,  $4.5 \text{ tons/acre} \times 150 \text{ gallons/ton} = 675 \text{ gallons}$ .

How many cases of wine in a gallon. A case of wine contains 2.378 gallons of wine. If a 1-acre vineyard was completely wiped out by herbicide drift in year 5, then  $675 \text{ gallons} / 2.378 \text{ gallons/case} = 284 \text{ cases}$  or 3,408 bottles lost.

Adding up all the losses of a vineyard in full production that was wiped out by herbicide drift. The cost to replace the vineyard is estimated to be \$23,600. What other losses are involved? In year 1 and 2 of establishment, the loss is 3,408 bottles per year. In year 3, of establishment a 40% crop will be taken which means 60% of the wine production will still be lost or  $3,408 \text{ bottles} \times 0.6 = 2,045 \text{ bottles}$ . In year 4, 80% of a full crop, meaning 20% of wine production will be lost or  $3,408 \times 0.2 = 682 \text{ bottles}$ . In year 5, the grower/owner is made whole.

Adding up the cost of losing a one-acre of 5-year old Chambourcin grapes with an anticipated yield of 4.5 tons acre.

Year after drift incident	Cost to establish vineyard	Estimated wine loss
1	\$8,800	3,408 bottles
2	\$1,600	3,408
3	\$5,400	2,045
4	\$3,900	682
5	\$3,900	0
Total	\$23,600	9,543 bottles

What is the value lost in potential retail wine sales? A total 9,543 bottles. If the wine was sold at a modest price of \$10.00 bottle, then \$95,430 lost.

In this example, a 1-acre Chambourcin vineyard was destroyed by herbicide drift in year 5 of production it would take 5-years to come back into full production once replanted. The establishment costs could be as high as \$23,600 and the loss of wine over this period of time could be more than \$95,000.

Please make people aware that specialty perennial crops are a substantial investment in both time and money. Unlike commodity grain crops like corn and soybeans which if lost to herbicide drift will result in often less than \$1,000/acre depending on yield.

Disclaimer: The numbers presented in the example above are estimates and the numbers for your operation may vary.

## Introduction to Winemaking Workshop

The Grape and Wine Institute at the University of Missouri will be putting on a one-day Introduction to Winemaking for winemakers looking to cover some essential skills for making quality wine. If you're feeling a little rusty in the lab or winery, this is a great refresher course as well. Topics during the day will include:

- Understanding and determining fruit ripeness for specific wine styles
- Designing a vinification plan with a focus on sparkling wine
- Overview of winery equipment and proper sanitation
- Fundamentals of in-house lab analysis, with hands-on practice
- Interpreting lab results

**When:** The class will be on August 8<sup>th</sup>, 2018 and will start at 10am with registration at 9:30am.

**Where:** Room 245 Eckles Hall, University of Missouri, Columbia, MO

**Cost:** \$80 which includes lunch, please send check to Kwasniewski lab at Eckles room 135, payable to University of Missouri



### Introduction to Winemaking

LIMITED SPACE AVAILABLE  
 CONTACT:  
[MISSOURIGWI@GMAIL.COM](mailto:MISSOURIGWI@GMAIL.COM)  
 TO REGISTER

[FOR MORE INFO CLICK HERE](#)


**Grape and Wine Institute**  
 University of Missouri

#### A one day class with focus on:

- EQUIPMENT OVERVIEW/SANITATION
- LAB ANALYSIS FUNDAMENTALS
- DESIGNING VINIFICATION PLAN

**8/8/2018**

**10AM**

**\$80**

**LUNCH INCLUDED**

Limited space is available, so reserve now to ensure you can take advantage of this opportunity. Email [missourigwi@gmail.com](mailto:missourigwi@gmail.com) to register or for more information.

## Cumulative Growing Degree Days for the Seven Grape Growing Regions of Missouri from April 1 to 2 July, 2018.

Region	Location by County	Growing Degree Days <sup>1</sup>		
		2018	2017	30 Year Average
Augusta	St. Charles	1658	1535	1448
Hermann	Gasconade	1587	1439	1387
Ozark Highland	Phelps	1702	1583	1480
Ozark Mountain	Lawrence	1733	1516	1478
Southeast	Ste. Genevieve	1671	1537	1480
Central	Boone	1703	1512	1422
Western	Ray	1583	1424	1383

<sup>1</sup>Growing degree days at base 50 from April 1 to July 2, 2018. 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. [Use 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