TO: All Ohio Commercial Wineries

FROM: Todd Steiner, Enology Program Manager and Outreach Specialist

DATE: March 24, 2020

SUBJECT: COVID 19 Response

This letter comes with the hope and prayers that each of you are safe, healthy and able to cope during these challenging times we are currently observing with COVID 19 and its repercussions.

I am hopeful that all our wineries will be able to pull through with unique ideas in terms of creative wine sales during these troubling times which also involve an entire statewide shutdown of Ohio residents to essential services only. Hopefully wholesale accounts will pick up and consumers will purchase Ohio wine to support the wonderful people we have involved and employed in our great industry.

I realize that you are all dealing with employee concerns, potential layoffs and staffing issues to help get through these troubling times were experiencing. I am hopeful that other potential state and governmental re-sources will help prepare a way for some relief and get us through this disaster. This letter is to simply let you know that I am available for wine production and quality consultation via e-mail and phone as they arise.

The Ohio State University (OSU) took a proactive stance early with COVID 19 by implementing practices with the goal of limiting the potential spread of this disease. Early measures included shutting down face-face classroom teaching in going to online and virtual classes. This has been followed by moving all on campus students at main campus and all remote campuses back to their primary or safe residence.

Since then, there has been many directives given by both President, Michael Drake, Dean, Cathann Kress among other Senior OSU Leadership in taking additional measures to further reduce the spread of COVID 19 to faculty, staff, students and citizens of Ohio. This is all being done despite the temporary disruption of both research and extension activities. Telework is being accomplished by nearly all OSU staff except for critical workers identified by OSU for essential services to be on campus.

These changes have obviously affected the enology program greatly. Like nearly all OSU employees, we are not allowed on campus but are working on projects remotely. Although we are not allowed to perform winery site visits, I am still available as mentioned above by both e-mail and phone calls for winery consultation and troubleshooting advice in helping to make sure wines are of sound quality during this time.

It is important to emphasize that after these challenging times have passed; we will be able to come out stronger than ever with quality wine offerings for the consumer. Fortunately, we are at

a more reasonable time in the winemaking process with cellar aging mainly taking place during this time. Therefore, with limited staff availability and our valued time in dealing with COVID 19, I have supplied several key elements listed below which are best to address presently in helping retain wine quality attributes in our cellar.

1. **Sulfur Dioxide:** This is the most important thing we can monitor for retaining sound wine quality during this time! It is essential to make sure sulfur dioxide additions are where they need to be based on wine pH at 0.8 ppm for whites and Rosé wines and 0.60 ppm for reds which have gone through malolactic fermentation. This involves performing initial analysis and adjusting as necessary. Propper SO_2 levels will help keep our wines free of potential chemical and microbial instabilities from occurring. Having the correct sulfur dioxide content in our wines will help provide some extra time for some extended aging time while we are looking into other important factors and activities dealing with COVID 19 at this time.

2. **Visual Inspection:** It is also important to visually inspect our tanks for any headspace or surface growth of yeast or bacteria during this time. Headspace in tanks or barrels has an initial concern for excess dissolved oxygen increasing the chance for both chemical and microbial oxidative concerns.

    - Chemical oxidation concerns the increased levels of acetaldehyde representing a "nutty" or sherry-like aroma which is objectionable.

    - Microbial oxidation can be observed through an opaque haze in the case of *Acetobacter* or a "pellicle" (mat) in the case of film forming yeast growing on the surface of our wines.

    These aerobic microorganisms can be problematic during cellar aging and are important to catch early in being able to act appropriately. There are other microorganisms that can also cause problems and concern in our wines to be cognizant of as well during this time. Generally, appropriate pH levels, the proper use of SO_2 and lower temperatures can significantly help prevent some of these problems from arising.

    - In the case of a surface haze or pellicle, it is best to be proactive now since this can ultimately lead to a rather quick reduction in wine quality. It is best to analyze initially for sulfur dioxide concentration and adjust accordingly based on wine pH. Sulfur dioxide additions can be added upon racking over to another tank leaving the surface disturbance behind.

    - Anytime wine is moved from tank to tank, it is important to remember to incorporate an inert gas such as nitrogen, carbon dioxide, nitrogen/carbon dioxide mix or argon to hoses, the receiving vessel and any storage vessel headspace in helping prevent excess oxygen from entraining into our wines. Although red wines with higher concentrations of phenolics (tannin) can withstand a little more oxygen than white or Rosé wines, it is a good practice at this time of cellar aging to limit oxygen which can be detrimental to wine quality.

    Other haze formations such as protein, tartrates, phenolic precipitates etc. can be ignored at this time unless providing an off sensory evaluation, change in pH or volatile acidity indicating a concern of additional microbial activity and potential wine flaws

developing in our tanks. Time permitting, excess suspended particles or haze developments can be fined or rough filtered to help clarify our wines if needed.

3. **Sensory Evaluation**: Sensory evaluation of our wines during this time is critical in making sure we are not observing the formation of wine flaws or fruit loss in aroma or taste. Some flaws at beginning stages may observe an initial loss of varietal fruit aromatics prior to further degradation in the production of more perceivable off aromas and flavors reminiscent to their respective flaw. Therefore, catching these potential flaws at the early stages helps preserve wine quality with potential actions being applied.

4. **Temperature:** Since **the** disruption from COVID 19 has occurred during late winter and early springtime we are fortunate that lower temperatures are still being experienced in our cellars. Temperatures near 50°F or below provides an unfavorable environment for most microbiological growth issues observed in wine. Although there are microbes that can proliferate at lower temperatures, this will surely help in the prevention or slow down the growth of many troublesome microorganisms we generally observe in wine. This in combination with the correct amounts of sulfur dioxide described above are very important to preserve wine quality.

5. **Blending:** Although blending can be important at this time of cellar aging, I would not recommend blending at this time since this process can be addressed after we have more time available from current COVID 19 response activities. Blending can be utilized at this time however if providing a viable remedy to help aid in the reduction of a certain perceived wine flaws at lower thresholds. Generally, blending for obtaining better balance, body and overall sensory perception can be accomplished later under the current circumstances.

In providing a general overview, with all the confusion from COVID 19, the above measures represent the limited essential cellar procedures to follow during this time. The proper SO_2 concentration, use and maintenance of our wines during this time is by far the most important factor in preserving wine quality. Hopefully, this will allow more valuable time to focus on other COVID 19 issues during these challenging times.

Again, our thoughts and prayers are with everyone within the grape and wine industry and all citizens in the state of Ohio. I am hopeful and optimistic that we will pull through this and in many ways become a better nation, state and industry by managing these difficult issues.

Please let me know if you have any winemaking questions or concerns at this time for further quality discussion.

Sincerely,

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