British Columbia Guild of Wine Judges
Monthly Training Program

BRITISH COLUMBIA
GUILD OF WINE JUDGES

"WITH SKILL AND INTEGRITY"

Acid Additions through Bench Trials - Rev 2

Background

There is a growing trend for grape growers to leave the grapes hanging for extended periods of time to increase the aroma and flavour components in the resulting wine but this practice does leave the grapes with lower than ideal acid levels.

There are many articles written on how to scientifically measure acid in both grape must and in finished wines and how to then make acid additions to bring the must or wine up to the recommended levels. However, this does not always translate into what tastes best. The following article will show you how to set up practical bench trials samples so that you can experiment on what wine sample tastes better, allowing you to make acid adjustments based on your personal tastes.

If your wine tastes a bit flat or has some bitterness in the finish, then it will likely benefit from acid additions and the following will help you to determine if acid will help and also how much is required.

Both citric and tartaric acid additions will change the aroma and taste profiles of the wine even though the acids do not really have any aroma or taste in themselves. Acid additions can increase the perception of both fruit and floral notes in the wine.

Equipment required to do bench trials

1) 60ml syringe or other accurate measuring device to measure 50ml wine samples
2) 3ml syringe
3) 6 wine glasses
4) Non-permanent felt tip marker or masking/painters tape
5) Tartaric acid solution (see below)
6) Citric acid solution (see below) This is only used in white wine acid additions and then only in limited quantities

Solutions

Prior to doing bench trials you will need to make up a couple of solutions. The concentrations of these solutions correlate to 1 gram per liter in a batch of wine when 1ml of solution is added to 50ml of wine. This makes the calculations of how much acid to add to your total batch of wine very simple.

1) Tartaric acid solution - Add exactly 5 grams of tartaric acid to a 100ml graduated cylinder and then add warm water to bring it up to the 100ml mark. Transfer this solution to a clean 100ml bottle or other suitable storage container.
2) Citric acid solution - Add exactly 5 grams of Citric acid to a 100ml graduated cylinder and then add warm water to bring it up to the 100ml mark. Transfer this solution to a clean 100ml bottle or other suitable storage container.

Procedure for Red Wine

1) Place 50ml of wine into the 6 wine glasses
2) Using the non-permanent felt tip marker of masking tape write on one glass “Base wine”. This will be the unaltered wine that you can compare to the other samples to ensure that you are going in the right direction with your acid additions.
3) Using the tartaric acid solution start by adding .5ml to one glass, 1 ml to the next, 1.5 ml to another and so on. Label the glasses with the amount of solution added.
4) Now the fun part, start tasting the wines starting with the base wine and then working your way from the lowest acid addition to the highest. Eventually you will find a point where the acid is too much. It is helpful to have others taste to confirm the best amount to add. For example you may eventually determine that 1.5ml is best and that 2ml is too much.
5) You can further refine the amount of acid that needs to be added by redoing the bench trials, starting at 1.5ml and working up in .25ml or even smaller increments based on the sensitivity of your pallet until you find the ideal amount that you like.
6) **NOTE:** It is generally recommended that you do NOT make any acid adjustments to your whole batch of wine on the day of the bench trials. Wait at least 1 day and then repeat the above procedure to confirm that you are in fact happy with the amount of acid that you think you would like to add. It is time consuming and somewhat

difficult to remove excess acid from your wine without having detrimental effects on the wine.

Procedure for White Wine

1) The procedure for white wine is the same as the procedure for Red Wine with the option of adding a small amount of citric acid for increased freshness or complexity.
2) Prior to trying different combinations of Citric and Tartaric acid, it is recommended that you first find out how much total acid is required using just Tartaric acid.
3) Care must be taken with how much citric acid is added. It is generally recommended that most of the acid that you add to white wine is tartaric acid but there can be exceptions. Bench trials are the key to finding which acid or combination of acids works best in the style of wine that you are trying to achieve.

Adding acid to your wine

Once you have determined how many ml of solution is required to improve your wine the math for how much acid to add is very simple. If you found that 1.5ml of solution worked best then that equates to 1.5 grams of tartaric acid per liter of wine. So if you have 23 liters of wine then you need to add 34.5 grams of tartaric acid to your batch of wine (1.5x23=34.5).

NOTE: Tartaric and Citric acid do NOT dissolve and mix very well in a wine solution. Always mix the acid powder with a small amount of warm water prior to adding it to the wine to ensure that it mixes into the wine and does not precipitate out.

Use of this technique during judging

This technique can be used during judging to give valuable feedback to winemakers. If you detect that a wine has low acid it will generally need at least 1 gram per liter of acid additions to fix it.

Simply stating that a wine needs more acid does not really help a winemaker, however if you can give a recommendation of how many grams per liter of acid is required, this will significantly improve the feedback to the winemaker and give them a starting point of what they need to do.

When providing this feedback always recommend that the wine maker do bench trials to ensure that they find the optimum acid levels.