PREFACE

In the wine industry there is the challenge to keep unwanted microorganisms from competing with the needed yeasts for the fermentation process. Some competing bacteria produce substances that can affect the taste of the wine and in some instances spoilage. There is therefore the need to implement strict environmental conditions in the must to prevent competing bacteria from taking over the fermentation process. Some wine makers add sulphites to the must to prevent competing bacteria from taking over the fermentation process. Sulphites are dangerous and individuals who consume over a certain concentration of the sulfur compounds can become ill. Additionally some wine makers allow certain bacteria to give a particular aroma and taste to their product. The natural sulphites produced from yeasts are effective in controlling competing bacteria when ideal conditions are met.

Temperature control and the initial concentration of the yeasts added to the crushed grape solution, though ancient, are still the best methods for the production of wine. Because grapes might contain bacteria from the handling and harvesting process, sterilization through washing is still highly recommended.

Detection of bacteria in the must is normally done through some PCR method and plating among other techniques. I recommend plating through the culturing methods I developed and the use of FTIR Spectroscopy to determine the microorganisms in the must.

Because white wines are produced differently from red wines there some different challenges for each. The product (wine) is sterilized and Checked for microorganisms before bottling yet there are reports of microorganisms in the bottled product. FTIR Spectroscopy can be used to check for microorganisms before bottling.

Lysozyme used in the wine industry should be prohibited because of the possibility of its destruction of the gut Flora of human in residual amounts. It should be noted that the

composition of microorganisms changes during the wine making process and Delfini and Formica (2001) outlined three major reasons for monitoring the microbial changes occurring non the wine making process

1. To promote and guide yeasts during alcoholic fermentation
2. To verify the growth of bacteria during melolactic conversion.
3. To ensure stability of the wine before bottling and storage.

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