



Grape soundness – how does it work

The FOSS grape soundness concept is based on the interaction between microorganisms and their media – the grapes. Each microorganism consumes metabolites from the grape (sugars, amino acids, etc) and produces microbial metabolites (ethanol, glycerol, etc). For instance, yeast transforms sugars to ethanol which is the fundamental process in the vinification.

At harvest, no ethanol or other microbial metabolites is expected and indeed, their absence is a prerequisite for grape soundness.

With FTIR, it is possible to measure those metabolites that may be present in high concentrations. In addition, the presence of the individual metabolites at different levels supplements the winemaker’s local knowledge of history and climate to give a good indication of which microorganism is causing the disorder.

	Glycerol	Gluconic Acid	Acetic Acid	Ethanol	Citric Acid
Botrytis cinerea	***	**			
Acetic bacteria		*	***		
Indigenous Yeast	*			***	
Aspergillus niger		**			***

Multiple parameters give a comprehensive, multi-dimensional view. The * scale indicates potential to predict a disorder, for example, ethanol is a good indication of indigenous yeast. Glycerol is also an indicator, but not as strong.