



**Asia-Pacific
Economic Cooperation**

2017/SOM2/SCSC/WRF/013

Winemaking Education, Common Wine Faults and Their Impacts

Submitted by: Australian Wine Research Institute



**7th Wine Regulatory Forum
Ha Noi, Viet Nam
11-12 May 2017**

 **APEC Wine Regulatory Forum**
May 11-12, 2017 • Ha Noi, Viet Nam

Common Wine Faults and Their Impacts



Dr Eric Wilkes
Australian Wine Research Institute

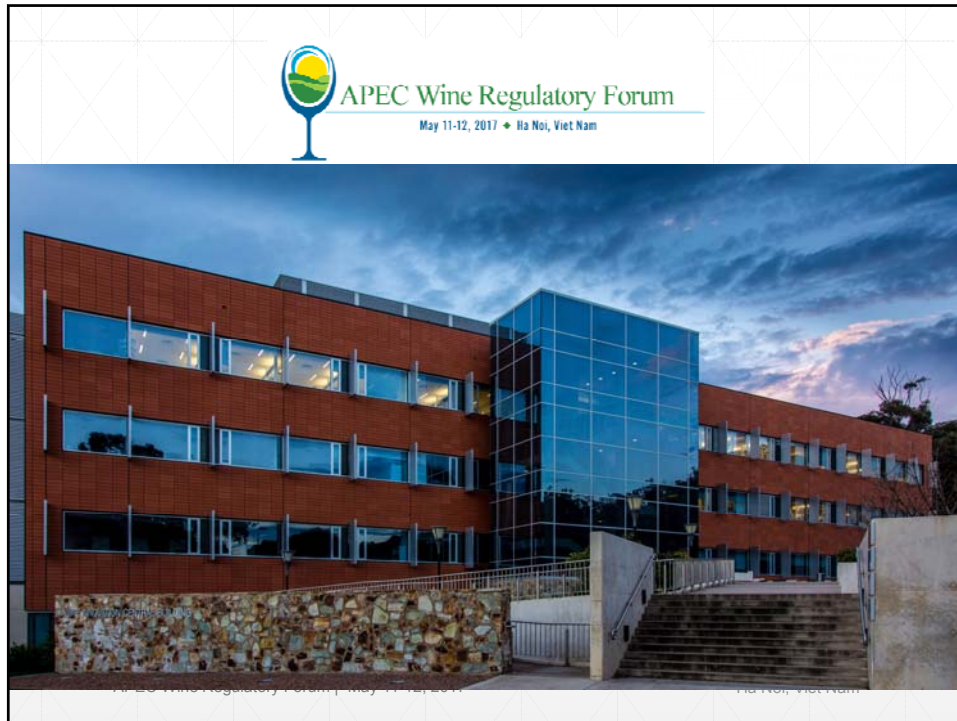
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Wine is a manufactured natural product

- So by definition, things will go wrong.
- One of the roles of the AWRI is to investigate such manufacturing issues.

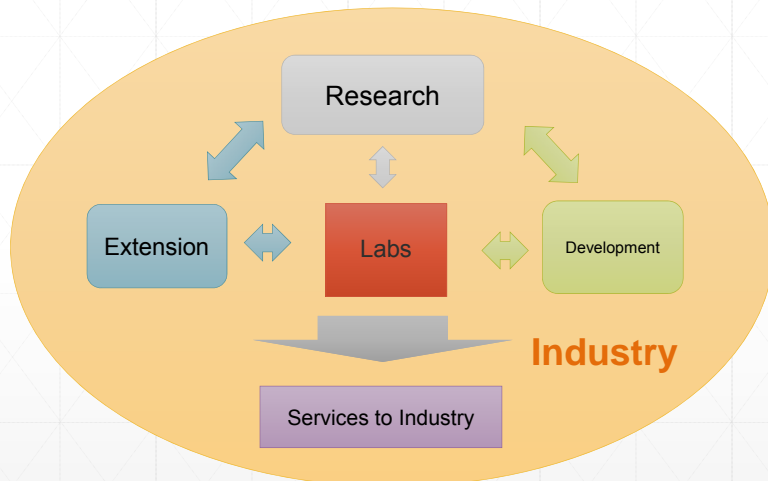




World class facilities



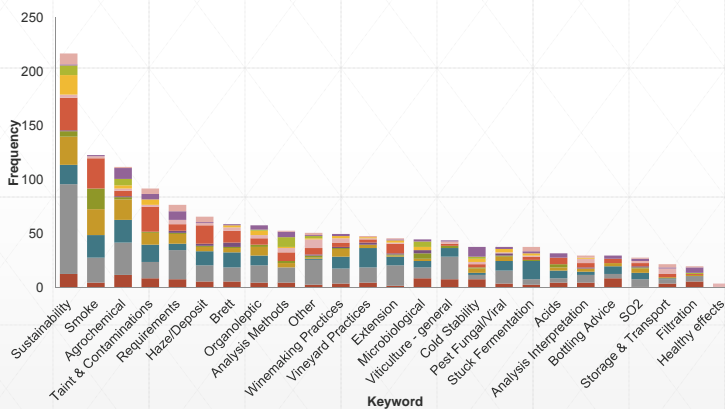
Industry owned business model



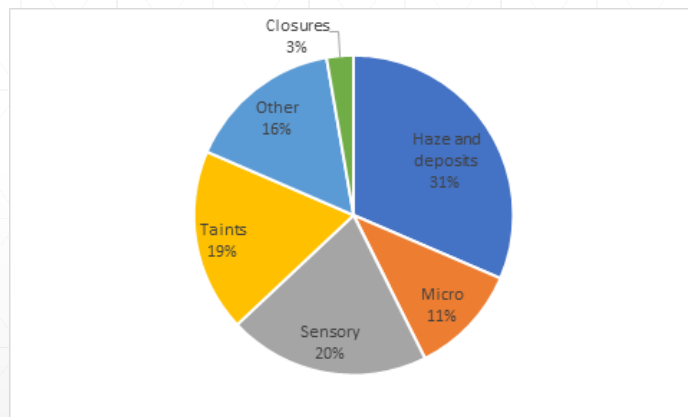


So what do we get asked?

- ~5,000 requests for technical assistance per annum; ~20 every day
- >1,000 problem samples investigated per annum



So what are the major fault investigations?



Wine Hazes

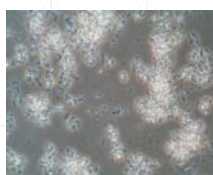
~10% all winemaking investigations are protein/copper-protein related



Hazes



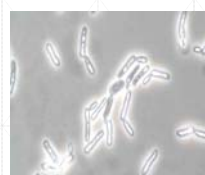
Protein



Copper/Protein



Polysaccharides



Yeast



Pinking



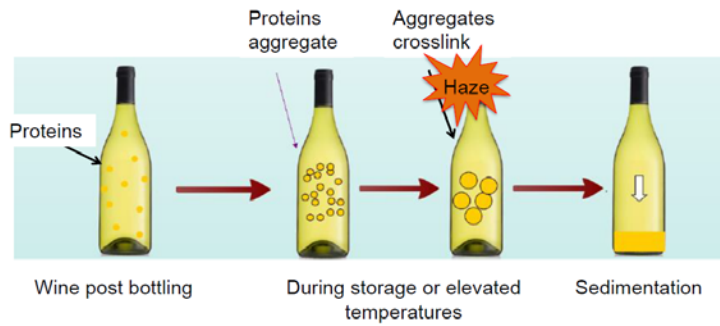
Oxidised phenolics



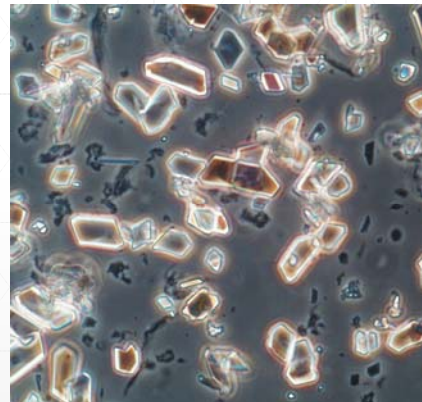
Iron

Wine Hazes are caused by naturally occurring proteins

How haze forms in wine:

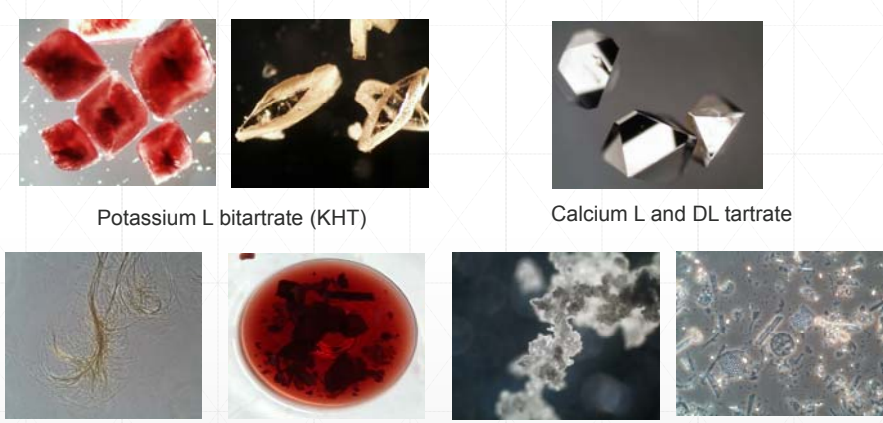


Crystalline deposits



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Crystalline type deposits



Potassium L bitartrate (KHT)

Calcium L and DL tartrate


Quercetin

Cork wax

Diatomaceous earth

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Taints

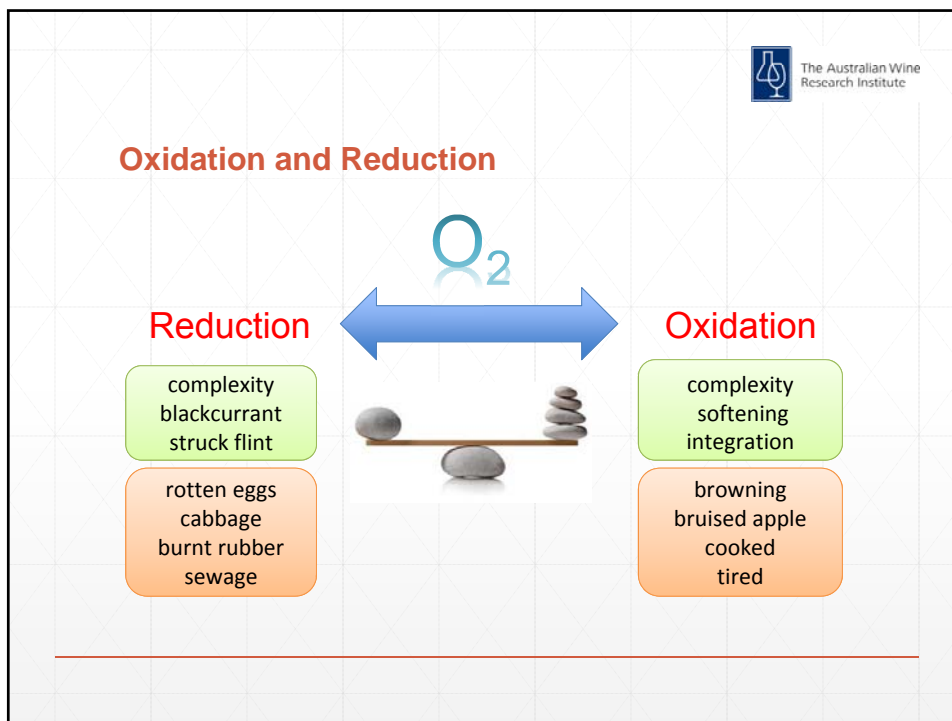


Brett

Musty cork taint

Oxidation

Reduced



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Smoke Taint

- Changes in climate are leading to increased fire events.
- smoky, phenolic, medicinal
- The compounds responsible are generally the same introduced by barrel aging

Cork Taint



Microbiological issues

- Wine does not pose a risk as far as pathogens is concerned.
- However, some yeast and bacteria can cause issue before, during and immediately after fermentation.
- *Oenococcus oeni*, *Pediococcus*, *Lactobacillus*, *Brettanomyces*
- All have the potential to damage the quality of wine
- But none produce dangerous metabolites in wine.
- The taint compounds are usually present in incredibly low concentrations.



So what are wine faults

- In the vast majority of cases they are naturally occurring wine components.
- They become an issue when they become out of balance with the normal expectation due to processing or climatic effects.
- The major impact is on consumer acceptance .

They do not pose any risk to human health and safety.

