



## Common Winemaking Faults and Flaws

### Flaws

- Flaws are a mistake made in the winemaking process that leads to a property in the wine that is not characteristic of the varietal.
- Stylistic Choice vs. Flaw
- Imbalance Flaw  
Acid vs Sugar, Oak Levels, Alcohol Level  
Solution: test must for acid levels and track pH throughout fermentation (whites 3.2-3.5, reds 3.5-3.9), only oak part of a batch so that you may blend if heavily oaked, adjust original Brix before fermentation to 24-28 to avoid too high or low alcohol in finished wine
- Visual Flaws  
Haze, Sediment, Effervescence, TA Crystals, Floaters, Lack of Color Saturation  
Solution: heat stabilize with bentonite to avoid haze, cold stabilize with Cream of Tartar to avoid TA crystal dropout, degas to avoid fizz, use opti-red or FT Rouge to help with color saturation
- Aroma/Bouquet Flaws  
Lack of Aroma, Non-varietal aroma, Over-oaking  
Solution: keeping fermentation temps at or below 75F to preserve aroma, using booster rouge or booster blanc to preserve aromas, watching oak level and adding it in small increments

### Faults

- Faults are often a microbial or chemical reaction within the wine in some part of its life that significantly alters a wine, eventually leading to the point of spoilage.
- Oxidation Faults
  - Acetaldehyde – oxidation of Ethyl Alcohol smells like sherry, or old apples, browning
    - Causes: headspace, low sulfites, poor corks, bacterial contamination
    - Solution: top off vessels, addition of sulfites every 2 months, sulfite addition can help aroma bounce back slightly, winery cleanliness with metabisulfite solution as sanitizer
  - Acetic Acid – Vinegar
    - Causes: Acetaldehyde, Acetobacter bacteria react with ethanol, Fruit Flies
    - Solution: keep vessels sealed or covered during fermentation, eliminate standing water/wine for fruit flies to breed in, use sulfites to sanitize to prevent bacteria



- Ethyl Acetate – Nail Polish Smell
  - Oxidation of Acetaldehyde and Acetic Acid
  - Causes: headspace and bacterial contamination
  - Solution: preventing the above from developing, eliminate headspace, use sulfites to sanitize all equipment
- Sulfur Faults
  - Hydrogen Sulfide – Rotten Eggs Smell
    - Causes: lack of yeast nutrients, yeast stress, sulfur sprays, yeast bi-product, high temps
    - Solution: use yeast nutrient to prevent them from getting stressed conditions, stir the lees throughout fermentation, cool must throughout fermentation to avoid high temperature spikes
  - Sulfur Dioxide – Burnt Match Smell
    - Causes: over sulfating, wild yeast
    - Solution: check levels of SO<sub>2</sub> before additions, add 50ppm of SO<sub>2</sub> prior to fermentation to eliminate wild yeast
  - Complex Sulfur Faults- Mercaptans, DMS, DES, DMDS, DEDS
    - Causes: Hydrogen Sulfide reacting with Ethyl Alcohol
    - Solution: Consult a professional winemaker at Musto Wine Grape regarding ascorbic acid and copper bench trials.
- Microbial Faults
  - Brettanomyces – Barnyard, Horse Saddle, Antiseptic Ointment, Band-Aids, Bacon, Clove
    - Causes: spoilage yeast cells that are incredibly dangerous and difficult to eliminate. Most often found in contaminated barrels, winery cleanliness, resistant to acid and SO<sub>2</sub>
    - Solution: Only buy barrels from a reputable source, if barrel is contaminated then remove from winery and destroy
  - Geranium Taint – Fresh cut geranium leaves
    - Causes: Reaction of potassium sorbate with Lactic Acid Bacteria in the presence of Ethyl Alcohol
    - Solution: Purposefully inoculate MLF bacteria originally, ensure that MLF is complete, add lysozyme to kill off any remaining bacteria, avoid use of sorbate.
  - Refermentation – Fizzy wine, popped corks
    - Causes: Yeast or microbial fermentation of residual sugar



- Solution: Ferment to dryness, use at least 50ppm of sulfites to prevent refermentation, sterilize bottles with sulfite, degas wine before bottling, use potassium sorbate on whites with desired residual sugar
- Other Faults
  - Cork Taint – Wet basement, wet old newspaper, mildew
    - Causes: strain of trichloanisole on cork (cork taint); mold that contacts chlorine and wood
    - Solution: avoid using any sort of chlorine cleaners (bleach) in winery, use fresh corks from reputable vendor
  - Heat Damage – Cooked fruit smell, brick red color, similar to oxidation
    - Causes: leaving wine in a hot car, in the sun, etc.
    - Solution: Proper storing temperatures below 65F