GENCO winemaking notes: Identifying and managing wine defects

Compiled by Bruce Hagen, Dave Schaffer

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Defect	Aroma descriptors	Strategy
Cork taint	Musty, moldy, mildew, basement	**Prevention**: Synthetic corks work reasonably well and are an economic option, high quality, tested corks, OR 'Diam' corks work well but are expensive.
Brettanomyces 1	Barnyard, wet dog, medicinal, band aid, etc.	**Prevention**: Sanitation, improved barrel Maintenance. Replace contaminated barrels. Adequate sulfite levels throughout wine making process. Most problematic in high pH wines. Chitosan products will remove defect-causing bacteria at start of fermentation. Adjust pH of red juice to 3.5, less for whites. Adjust pH of finished wines to 3.7 or less. **Mitigation**: Early detection and use of Chitosan products to remove bacteria followed by Fenol-Free (Enartis)
Brettanomyces 2	Horse sweat, saddle, rancid, cheesy, etc.	(see Brett 1 above)
Oxidation	Bruised apples, sherry like (acetaldehyde), old wine	**Prevention**: Test SO2 monthly until level stabilize. After that, test every 6 weeks. Don't allow SO2 to drop below about 20ppm. Maintain

		adequate sulfite levels level based on pH, throughout winemaking process, with the exception of MLF. Fewer larger additions of SO2 are better than smaller, more frequent additions. Use alcohol-tolerant yeast for high Brix juice and dilute the juice to minimize alcohol yield. Use yeast food to avoid stuck fermentations. To avoid a sluggish fermentation and possible oxidation or bacterial spoilage, don't allow the fermentation temperature to exceed the upperlimit of it ideal range for more than a few hours. You may have to cool the wine with frozen watrer-filled jugs or water bath. Monitor SO2 levels, top regularly, and minimize exposure to air. Purge air space in containers with Argon. Keep wines below 64 °F, preferably below 60 °F. Use a selected ML culture to ensure rapid MLF **Mitigation**: Add at least 50 ppm of SO2 and retest in a few days and adjust accordingly. Fine with casein, or PVPP, Combistab AF or Claril SP (for whites) to minimize oxidized aromas.
VA – Acetic Acid	Vinegary	**Prevention**: (see oxidation above). Maintain adequate sulfite level based on wine pH. Use a yeast that tolerates high alcohol if grape sugar is above 24.5 °Brix. You'll also need to use yeast food to prevent the fermentation from sticking. **Mitigation**: add at least 50 ppm of SO2 and retest in a few days and adjust accordingly to prevent the

		problem from worsening, try blending to reduce the level.
VA – Ethyl Acetate	Acetone, fingernail polish remover	**Prevention**: (see oxidation and Acetic acid above Adequate sulfite levels and frequent topping. Use commercial MLF culture, and MLF nutrients.
Lactic Taint	Buttery smell, sour, cheesy, sauerkraut, pickle, Mousy, geranium-like	**Mitigation**: Sulfite (50ppm), some aeration **Prevention**: adequate sulfite levels, use commercial MLF culture, temperature control. **Mitigation**: There isn't much hope here, but you could try Lysozyme, Chitinase products to remove bacteria and prevent the problem from worsening. Do trials with small lots and experiment with fining agents to see if you can salvage the wine.
Lactobacillus and Brettanomycetes	Mousey, mouse cage	**Prevention**: Adequate SO2, temperature control, use commercial MLF culture. **Mitigation**: Lysozyme, Chitosase products, Fenol-free.
Methoxypyrazine	Green bell pepper, vegetal	**Prevention**: pick when ripe, often affects merlot or cab with dense canopies. **Mitigation**: milk or Potassium caseinate, Neoclar AF (Enartis), Isinglass.
Microbial	Earthy, dirt, beet root etc.	**Prevention**: maintain adequate sulfite levels.

		Mitigation: probably not correctable
Hydrogen Sulfide	Rotten Eggs	**Prevention**: determine nutrient levels before fermentation and use nutrients as needed. For whites, rack juice from heavy sediment before fermentation, and after fermentation for reds. **Mitigation**: Add more nutrient if H2S develops during fermentation as long as the sugar is still above 12 Brix. Use yeasts with low nutrient-demand. Aerate (splash) during fermentation. Treat wine after fermentation and racking. Use copper sulfate or Reduless (Scott) if it remains, rack when smell is gone.
Volatile sulfur compounds	Onion, garlic, cooked cabbage, skunk, natural gas smell	**Prevention**: See hydrogen sulfide above. **Mitigation**: Rack off lees if you detect off aromas – that sometimes helps. If the smell is persistent, add CuSO4, yeast hulls, or Reduless and rack 2-3 days later.
Di-Mercaptans	Vegetables (artichoke, asparagus), petroleum products	**Prevention**: See hydrogen sulfide above. **Mitigation**: Ascorbic acid plus CuSO4