

LESS THAN PERFECT (GRAPES)

WINEMAKING ON THE EDGE

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AREAS OF IMPERFECTION

1. INHERENT PROBLEMS WITH CERTAIN VARIETIES
2. UNRIPE GRAPES
3. BACTERIAL AND FUNGAL INFECTIONS

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INHERENT PROBLEMS

- **Vegetal character, unripe solids**

Fix: Toasted oak tannin*, oak adjuvants, minimal solids contact, yeast.

- **Low tannin (most red hybrids), lacking mid-palate**

Fix: Cellaring and finishing tannin (combined with gum Arabic or mannoprotein).

- **High acid (usually, high malic acid)**

Fix: MLF, malic-consuming yeast, *Schizosaccharomyces pombe*, chemical deacidification, double-salt, gum Arabic, mannoprotein, tannin, sugar.

- **High pH**

Fix: Early tartaric acid addition, ion-exchange (in extreme conditions).

- **“Hybrid” character**

Fix: Lower ripeness, toasted oak tannin, toasted oak adjuvants.

- **Color drops out**

Fix: Protect from O2 post-fermentation, tannin (proanthocyanidin), gum Arabic.

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UNRIPE GRAPES

- **High acid, especially malic acid**

Fix: MLF (co-inoculation), malic-consuming yeast, *Schizosaccharomyces pombe*, chemical deacidification, double salt, gum Arabic, tannin, sugar.

- **Green tissue giving vegetal character**

Fix: Green-reducing yeast, reduce skin/solids contact (light reds, rosé), toasted oak tannin*, bentonite must*, enzymes (quick color extraction).

- **Inadequate flavor development**

Fix: Ester-producing yeast, toasted oak tannins and oak adjuvants.

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BACTERIA AND FUNGAL INFECTIONS

- **Sour rot, acetic acid**

Fix: Severe sorting, higher SO₂, juice clarification (whites, some rosé), minimize O₂, fermentation and cellaring tannins, chitin/glucan treatment, strong, fast yeast (short lag phase), enzymes.

- **Botrytis, mildew and miscellaneous molds and fungus**

Fix: Severe sorting, higher SO₂, juice clarification, minimize O₂, nutrient additions, fermentation and cellaring tannins, strong fruit-forward yeast, enzymes (for severe botrytis, beta-glucanase for glucans).

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GENERAL RECOMMENDATIONS

- Careful sorting
- Maintain proper SO₂ (in accordance with pH)
- Protect wine from dissolved O₂ (DO)
- Proper nutrition
- Appropriate yeast for the conditions
- Change winemaking to accommodate grapes (e.g., make sparkling wine if grapes are unripe/acidic).

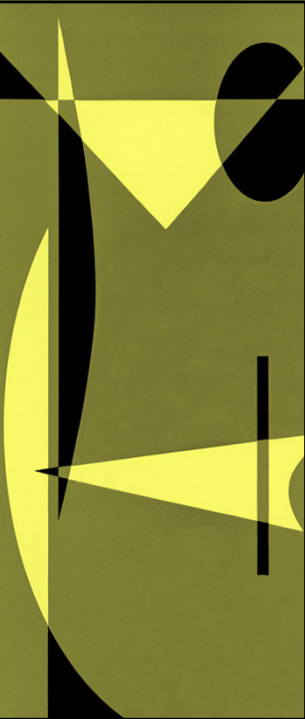
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THE END

(EXCEPT FOR QUESTIONS)

THANK YOU

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