

Dealing with under-ripe grapes & green character

CONCERNS ABOUT MAKING RED WINE FROM UNDER-RIPE FRUIT

- Limited extractability from the skins (reduced color and mouthfeel).
- Unripe and green seed tannins (astringency).
- Green character in the wine ("green pepper").

1 ISSUE: LIMITED EXTRACTABILITY FROM SKINS

Under-ripe grapes often have thicker skins, which have a limited extractability. Anthocyanins, tannins and aroma precursors will be harder to release from the inside of the grape cell.

→ **Solution:** The use of an enzyme will help break open the cell wall structure and release the anthocyanins, aroma precursors, and soft tannins from the grape cell. Getting color and soft tannin extraction before the alcoholic phase of maceration will help reduce the level of astringent character in the finished wine.

- Add **LAFASE™ FRUIT** enzyme during first pump over at 40 g/ton.

2 ISSUE: UNDER RIPE TANNIN AND GREEN SEED TANNIN

When phenolic maturity does not happen at the same rate as sugar accumulation the fruit can have harsh tannin. When this happens in conjunction with seed tannin extraction, the result can be an increase in final wine astringency.

→ **Solution:** Limit the maceration time and the extraction regime during the alcoholic phase of fermentation. This shorter maceration time can result in lower overall tannin content and lower color intensity and stability. Use fermentation tannins to build structure, stabilize color and help reduce green character perception in the wine.

- Add at grape processing: **TANIN VR GRAPE™** (100% grape skin and seed tannin): 200 – 400 ppm **OR** **TANIN VR SUPRA™ ELEGANCE** (blend of ellagic and proanthocyanidic tannin) 200 – 400ppm.
- Add at 1/3rd alcoholic fermentation: **TANIN VR COLOR™** (blend of tannin sources, rich in catechin for color stabilization): 200 – 400 ppm.

3 ISSUE: GREEN CHARACTER IN THE WINE

Fruit with under ripe phenolic maturity can impart a green or veggie character into the finished wine.

→ **Solution:** It is possible to reduce or mask the green character during fermentation and after fermentation with different tools:

- Use toasted oak granular during fermentation: **NOBILE® SWEET VANILLA** (3 - 4 g/L).
- Use a yeast strain that produces lots of fermentation esters: **ZYMAFLORE™ FX10** or **ZYMAFLORE™ RX60** (200 ppm).
- Use a yeast derived product rich in manno-proteins and polysaccharides: **POWERLEES™ ROUGE** (200 – 400 ppm).
- Do an early fining treatment on all press wine: **POLYMUST™ PRESS** (200 – 400 ppm).
- Use toasted oak chips during aging (2 - 3 g/L):
 - **NOBILE® SWEET VANILLA:** Red fruits, vanilla, toasted marshmallow.
 - **NOBILE® INTENSE:** Dark fruit, mocha, toasted almond.