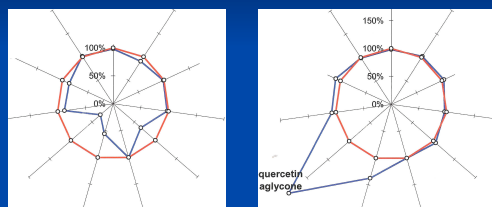


Utilizing Phenolic Assays to Improve Winemaking

Pellegrini Vineyards
North Fork of Long Island
New York

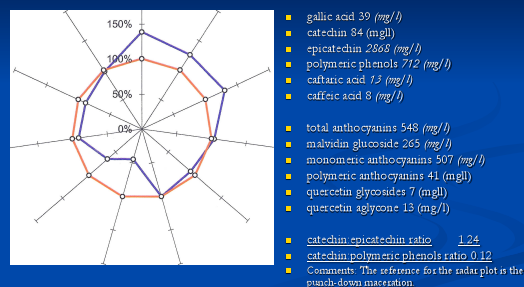
Control versus Leaf Removal



Control versus Leaf Removal

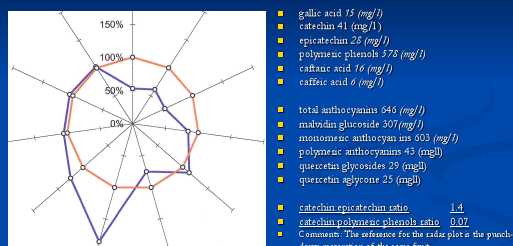
- gallic acid (mg/l) 11 - catechin (mg/l) 23 - epicatechin (mg/l) 19 - tannin (mg/L) 573 - caffeic acid (mg/l) 5 - caffeic acid (mg/l) 4	- gallic acid (mg/l) 11 - catechin (mg/l) 26 - epicatechin (mg/l) 20 - tannin (mg/L) 573 - caffeic acid (mg/l) 8 - caffeic acid (mg/l) 4
- total anthocyanins (mg/l) 364 - malvidin glucoside (mg/l) 183 - monomeric anthocyanins (mg/l) 322 - polymeric anthocyanins (mg/l) 42 - quercetin glycosides (mg/l) 15 - quercetin aglycone (mg/l) 1	- total anthocyanins (mg/l) 448 - malvidin glucoside (mg/l) 223 - monomeric anthocyanins (mg/l) 407 - polymeric anthocyanins (mg/l) 41 - quercetin glycosides (mg/l) 37 - quercetin aglycone (mg/l) 8
- catechin:epicatechin ratio 1.2 - catechin:tannin ratio 0.04	- catechin:epicatechin ratio 1.30 - catechin:tannin ratio 0.05

Pump-over Vinification



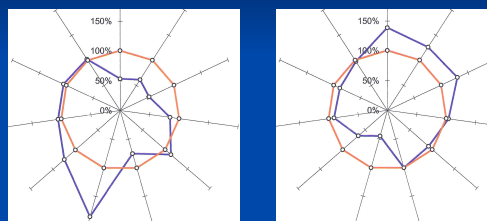
- gallic acid 39 (mg/l) - catechin 84 (mg/l) - epicatechin 2868 (mg/l) - polymeric phenols 712 (mg/l) - caffeic acid 73 (mg/l) - caffeic acid 8 (mg/l)	- total anthocyanins 548 (mg/l) - malvidin glucoside 265 (mg/l) - monomeric anthocyanins 507 (mg/l) - polymeric anthocyanins 41 (mg/l) - quercetin glycosides 7 (mg/l) - quercetin aglycone 13 (mg/l)
- catechin:epicatechin ratio 1.24 - catechin:polymeric phenols ratio 0.12	Comments: The reference for the radar plot is the push-down maceration.

Rotary Fermenter Vinification



- gallic acid 15 (mg/l) - catechin 41 (mg/l) - epicatechin 28 (mg/l) - polymeric phenols 573 (mg/l) - caffeic acid 76 (mg/l) - caffeic acid 6 (mg/l)	- total anthocyanins 646 (mg/l) - malvidin glucoside 307 (mg/l) - monomeric anthocyanins 603 (mg/l) - polymeric anthocyanins 43 (mg/l) - quercetin glycosides 29 (mg/l) - quercetin aglycone 25 (mg/l)
- catechin:epicatechin ratio 1.4 - catechin:polymeric phenols ratio 0.07	Comments: The reference for the radar plot is the push-down maceration of the same fruit.

Rotary Ferment vs Pump-over



Punch-down versus Rotary Ferment

- | | |
|-----------------------------------|---------------------------------------|
| ■ 2004 Cabernet Franc | ■ 2004 Cabernet Franc (Rotary) |
| ■ phenolic profile (HPLC) | ■ phenolic profile (HPLC) |
| ■ gallic acid 27 mg/L | ■ gallic acid 23 mg/L |
| ■ Catechin 28 mg/L | ■ Catechin 23 mg/L |
| ■ Epicatechin 22 mg/L | ■ Epicatechin 15 mg/L |
| ■ polymeric phenols 428 mg/L | ■ polymeric phenols 606 mg/L |
| ■ caffeic acid 20 mg/L | ■ caffeic acid 39 mg/L |
| ■ caffeic acid 18 mg/L | ■ caffeic acid 1 mg/L |
| ■ quercetin glycosides 8 mg/L | ■ quercetin glycosides 15 mg/L |
| ■ quercetin aglycone 2 mg/L | ■ quercetin aglycone 11 mg/L |
| ■ malvidin glucoside 147 mg/L | ■ malvidin glucoside 181 mg/L |
| ■ polymeric anthocyanins 21 mg/L | ■ polymeric anthocyanins 26 mg/L |
| ■ total anthocyanins 253 mg/L | ■ total anthocyanins 320 mg/L |
| ■ monomeric anthocyanins 232 mg/L | ■ monomeric anthocyanins 294 mg/L |

Yeast Comparison

