

Wine from New Cold-Hardy Cultivars: Challenges and Techniques



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Frontenac



- **Introduced 1996**
- ***V. riparia* 89 X Landot 4511**
- **Harvest*:**
 - 25.5 °Brix
 - 3.06 pH
 - 15.7 TA
- **Red, Rosé, Port**

***5 years, n=17**

Frontenac: Sensory

- **Garnet; bluish tint**
- **Dominant cherry palate**
 - blackberry
 - black currant
 - plum
 - herbaceous note if underripe
- **Light-bodied**

Frontenac: Issues

- **High acid**
- **High soluble solids**
- **High color**
- **Low tannins**



Frontenac: Red Wine

- **Acid**
- **HRC Strategy**
 - **Malolactic fermentation**
 - **Cold Stabilization**
 - **Chemical deacidification**
 - **Potassium bicarbonate**
- **Other options:**
 - **Chemical deacidification: calcium carbonate**
 - **Amelioration**
 - **Blending**
 - **RS**

Frontenac: Red Wine

- **Soluble solids**
 - Amelioration as necessary
 - RS
- **Tannins**
 - Oak – medium to heavy toast
 - Barrel aging
 - Chips, spirals, beans
 - Enological Tannins
 - Addition prior to fermentation

Frontenac: Red Wine

- **Color**
 - **Short skin contact time**
 - 3-5 days
 - **Fining**
 - Gelatin
 - Activated carbon
 - **Filtration**
 - Tight depth filtration



Frontenac: Rosé

- **No skin-contact time**
- **Aromatic yeast**
 - **EC 1118**
- **Cool fermentation**
- **Residual sugar**
 - **3%**
- **Carbonic maceration**



Frontenac: Port style

- **Traditional production**
 - **Stop fermentation at 10% RS with high-proof addition**
- **High-alcohol yeasts**
 - **18-19%**

Frontenac gris



- **Introduced 2003**
- **Sport of Frontenac**
- **Harvest*:**
 - **25.6 °Brix**
 - **3.06 pH**
 - **13.4 TA**
- **Off-dry table; dessert**

**5 years, n= 12*

Frontenac gris: Sensory

- **Amber to golden color**
- **Aroma/flavor:**
 - **Peach**
 - **Apricot**
 - **Citrus**
 - **Tropical Fruit**

Frontenac gris: Issues

- **High acid**
- **High soluble solids**
- **Volatile retention**
- **Color?**



Frontenac gris: table wine

- **Aromatic yeast**
 - Epernay, EC 1119, X5 (*Laffort*)
- **Cool fermentation**
 - 55°F
- **Color?**
 - Skin contact (cold soak?)
 - Fining
 - Rosé (?)

Frontenac gris: table wine

- **Acid**
 - **Cold Stabilization**
 - **Deacidification as needed**
 - Potassium bicarbonate
 - **Residual sugar**
 - 2.5 – 3.5 g/L
 - **Amelioration**
 - **Acid-reducing yeasts**
 - ProMalic (*Lallemand*)
 - ML01
 - **MLF**

Frontenac gris: Dessert wine

- **Juice pressed and frozen**
- **Thawed to 34°Brix**
- **High-sugar yeast**
 - **L2226** (*Lallemand*)
- **Sensory profile:**
 - **Rich, heavy mouthfeel**
 - **Honey, intense tropical fruit (pineapple, passion fruit, mango)**

La Crescent



- **Introduced 2002**
- **Swenson hybrid parent; Muscat Hamburg grandparent**
- **Harvest*:**
 - **24.3 °Brix**
 - **3.02 pH**
 - **12.6 TA**
- **Off-dry table wine; dessert**

**5 years, n=13*

La Crescent: Sensory

- **Pale straw**
- **Germanic sensory profile**
 - Lychee
 - Apricot
 - Peach
 - Citrus
- **Acid-sugar synergy**

La Crescent: Issues

- **High acid**
- **High soluble solids**
- **Volatile retention**



La Crescent: Table wine

- **Aromatic yeast**

- Epernay, EC 1119, Fermiarom

- **Cool fermentation**

- 55°F

- **Acid**

- Residual sugar

- 0.75 - 3 g/L

- Amelioration

- Sensory profile changes- culinary herbs, apple, pear

- Schizosaccharomyces pombe

- ProMalic (*Lallemand*)

La Crescent: Dessert wine

- **Juice pressed and frozen**
- **Thawed to 34°Brix**
- **High-sugar yeast**
 - **EC 1118**
- **Sensory profile:**
 - **Similar to Riesling icewine**
 - **Apricot, honey, lychee**

Marquette



- **Introduced 2006**
- **Ravat 262 parent; Pinot noir grandparent**
- **Harvest*:**
 - **25.7 °Brix**
 - **3.0 pH**
 - **11.7 TA**
- **Red wine**

**5 years, n=9*

Marquette: Sensory

- **Ruby**
 - similar to *V. vinifera*
- **Complex, well-balanced palate**
 - cherry
 - black currant
 - black pepper
 - berry
 - spice
- **Moderate tannins**

Marquette: Issues

- **Moderate acid**
 - **Potential pH/acid discrepancy**

Marquette: Red wine

- **Skin contact: 5-7 days**
- **Ambient fermentation (70°F)**
- **Yeast: Pasteur red, BM 45**
- **MLF**
- **Cold stabilization**
- **Oak aging**
 - moderate or heavy toast

On the horizon...

- **White table wine selection**
 - non-aromatic
 - pear, apple palate
 - lower acid, mod. soluble solids
 - rich mouthfeel
- **Red table wine selection**
 - moderate tannins; lower acid
 - earthy, stewed fruit, black pepper, cedar
 - dark color; ages well

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