

BC Wine Grape Council
10th Annual Enology & Viticulture Conference

PINOT GRIS
By Jeff Kandarian

King Estate
OREGON WINES

Today's Outline

Pinot Gris Production

- **Brief Oregon Pinot Gris History**
- **Vineyard – Growing Pinot Gris**
 - **Clones and Rootstock**
 - **Trellis and Vine training**
 - **Vine nutrition**
- **Winery – Working with Pinot Gris**
 - **Harvest/Picking decisions**
 - **Receiving fruit – decision time**
 - **Pressing**
 - **Settling/Racking**
 - **Yeast decisions**
 - **Fermentation management**
 - **Problems**
 - **Nutrients**
 - **Storage and Aging**
 - **Blending, Fining, and Filtering**
 - **Bottling**
 - **Trials**
- **Questions?**

Oregon Pinot Gris History

- Early winegrowing in Oregon always involved white wines. Although the first grapes were planted by retired French-Canadian fur trappers in the 1840s, many settlers in the second half of the nineteenth century had German heritage, and German white varieties, particularly Riesling, were favored.
- In southern Oregon, there was more influence from California. Peter Britt came to Jacksonville from Switzerland in 1862. He brought grape cuttings from California and produced Claret, Muscat, and Zinfandel wines. The Von Pessl brothers added Riesling and Sauvignon. Adam Doerner got Riesling and Sauvignon cuttings from the Beringer brothers and planted them near Roseburg in the 1890s. And it was near Roseburg that the rebirth of Oregon wines took place in 1961, when Richard Sommer planted Riesling at Hillcrest Vineyard.
- The plantings in the 1960s and 1970s focused on Pinot noir, Riesling, and Chardonnay; however, Riesling was gradually eclipsed by Chardonnay in the mid-1980s. By 1986, Chardonnay accounted for 23% of Oregon's acreage, Riesling 19%, and Pinot gris 3%. As late as 1992, Oregon growers were pulling out Pinot noir to plant Chardonnay and Müller-Thurgau. **By 1994, Pinot gris had become more widely planted than Riesling, and in 2001 Pinot gris replaced Chardonnay as the most planted white grape variety in Oregon.**
- **Today, here's the way things stand (looking at numbers from 2007). Pinot gris, Oregon's leading white grape, makes up 15% of Oregon's 17,400 acres of grapes and 18% of our 1.7 million cases of wines sold.** Chardonnay is next with 6% of the acreage and 5% of the wine sold. The third white position goes to Riesling, now just 4 % of planted acres and 4% of the wine. Interestingly, Chardonnay per ton price is up 11% over 2006, while Pinot Gris and Riesling prices held more or less steady. Pinot Blanc is next in line with 1.2% of total acreage. Other whites include Viognier, Gewurztraminer, Sauvignon blanc, and Muller Thurgau.

Clones and Rootstock

- King Estate has 500 acres of Organically Farmed Vines
 - @ 65% of which is Pinot Gris
- King Estate utilizes 4 PG clones
 - 3, 8, 146, and 152
 - 210 acres of 146
 - 95 acres of 152
 - 17 acres of 3
 - 2.5 acres of 8
- King Estate's current rootstocks
 - Own root, 5C, 3309, SO4, 101-14, RG

Trellis and Vine training

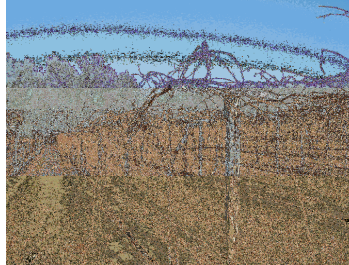
- Vertical Shoot Position (VSP)

- All of the new season's canes are trained upwards with wires. Grape bunches grow from 36 to 48 inches above the ground. The VSP system is very easy to mechanically harvest. Low-yielding vineyards thrive using the VSP trellis system and produce very good fruit. (70% - 225 acre)



- Geneva Double Curtain (GDC)

- Used to separate the vine's canopy and thus increase sun exposure to grape bunches. The two sides of the vine are known as "curtains", and the trunk is usually 3 to 5 feet high. (22% - 75 acre)



- Lyre

- Similar to the GDC, but canes are trained up rather than down. Lyre trained vines are also less vigorous than the GDC. Training the canopy in this fashion is used as a defense against mildew by exposing grapes to more wind and sun. (8% - 25 acre)



Vine Nutrition

- 100% Organically grown
 - Follow USDA organic grape growing practices and guidelines.
 - Certified by the Oregon Tilth
- King Estate is dry farmed
 - Soils and weather
 - Bellpine and Jory, water holding capacity
 - Abundant rainfall, maritime influence, short compact growing season
- All organic waste on site is composted
- Annual soil and petiole samples
 - Subsequent micro/macro nutrients are then added accordingly
 - Ca, Gypsum, Dolomite, K, B, Fe, Mn, Cu, Zn, N as compost

Vineyard Management

- Healthy vines
 - Close eye on PM and Botrytis



Harvest/Picking Decisions

- Winemaker/Vineyard Manager decision
 - Program
 - Signature, Domaine, Glace'
 - Vineyard sampling
 - 21-23.0 Brix
 - Flavors
 - Acid Levels
 - pH 3.1-3.30
 - TA 7.0-8.5 g/L

Fruit Receival – Decision Time

- Man or Machine
 - Rising labor cost, immigration concerns, preparation for the inevitable.
- Size & Scale vs. Wine grape quality
 - Daily production constraints
 - Logistical concerns from sourced fruit to tank availability in house
 - Program versatility to the rescue
- Mother Nature
 - Is that light at the end of the tunnel or a locomotive?
 - Rain, freeze, days shortening, and organic handcuffs

Pressing

- King Estate has 4 presses all different sizes!
 - 18/35 T Whole Cluster/Machined Wilmes
 - 10/20 T Whole Cluster/Machined Wilmes
 - 7/15 T Whole Cluster/Machined Wilmes
 - 4/12 T Whole Cluster/Machined Wilmes
- Press Cycle
 - Champagne style cycle
 - 2 hrs of gentle increases in pressure
 - 0.2 - 2 bar
 - Little to no rotations
 - Yielding 165 gallons/ton

Settling/Racking

- Allow solids to settle at bottom of tank
 - Settle for 48 hours at 45°F in stainless steel tank prior to racking
- Then separate juice from solids
 - Pumping “Racking”
- Solid material in juice or wine = Lees
 - Grape solids, yeast solids, chemical precipitates
 - We filter lees to recover any juice (~50-60%)

Yeast Decisions

- Stainless steel used for all primary fermentations at KE...
- Size of pitch?
- Strain of yeast (D47, VL1, VL3, QA23, 71B, etc)
 - No natural fermentations currently done on white wines at King Estate

Fermentation Management

- Fermentation started at 50°F
- Yeast culture brought to temp. of fermentation vessel prior to addition
- Temperature maintained between 50-55°F
- Typical fermentation around 30 days
- Cooler fermentations retain more volatile aromas

Problems

- Nutrient deficient fermentations
- Mineral and/or vitamin deficiencies in the vineyard
- Excessively clarified musts
- Yeast inhibiting substances such as fungicides, fatty acids, high volatile acidity



Nutrient Supplements during fermentation

Yeast Assimilable Nitrogen Content (YANC)
should be between 200-250 mg N/L

DAP (Diammonium Phosphate)—*only for non-organic fruit*

- Cerevit—can be used in Organic wines
- Fermaid 2133/K—can be used in Organic wines/can't
- Yeast Extract—can be used in Organic wines

Storage and Aging

- Storage in Stainless at 55° F
- Keep close nose on possible sulfide development
- Maintain 0.5-0.8 ppm molecular SO₂
- Kept on Yeast lees for sur lies aging
 - Lees stirred once a week with guth
- Minimize headspace volume whenever possible
- Get the dissolved CO₂ to @1500 ppm without sparging.
- Minimize DO pick up – monitor often
- Taste at least monthly
 - Preferably weekly at stirs

Blending, Fining, Filtering

- Winemakers taste lots on monthly basis on KE scale to determine which blend each lot ends up in. (SI, DO, bulk?)
- Bentonite fining
 - Lab does bentonite trials to determine appropriate addition for tanks
- Crossflow filter
 - KE's newest addition in efforts to elevate wine quality
 - Eliminates filtering time constraints
 - Minimizes multiple pass filtrations thru pads or powders
 - Aids in blending process
 - And much more...

Bottling

- **Adjust CO₂ level in wine**
 - Part of pre-stabilization
 - minimize spritzy mouthfeel
- **Adjust SO₂ amount for bottling**
- **Adjust the DO, hopefully not necessary**
- **White wines are sterile filtered (0.45µm)**



Trials

- Cold settling and racking juice vs. pressing straight to fermentor
- Mechanically harvested fruit vs. hand picked fruit
- Target RS by arresting, mute add back, blending, etc
- Reduction remedies – nutritional supplements, micro Ox, macro Ox, copper, etc
- Hyperoxidized vs. reductive fermentation
- Bio lees as a supplement to/ replacement to stirring
- Native ferments using crushed fruit starter culture
- ? Audience Suggestions?