Winemaking Equipment
For New Wineries

Christian E. BUTZKE
Enology Professor - Purdue University
President - ASEV

butzke@purdue.edu    1.765.494.6500    enology.butzke.com
Comments

- Fruit Handling/Sorting
- Destemmer-Crushers
- Presses
- Fermentors
- Filters
- Bottling Line
Wine Quality

- Grapes: 70%
- Equipment: 10%
- Barrels: 10%
- Winemake: 5%
- Provenance: 5%
Gentle Fruit Handling

Hand Picking

Hand Loading
Grape Sorting
Concentration of sugars, acids, aromas

Dehydration of berries by temperature and humidity-controlled drying
Passito
Temperature-controlled Drying
Destemmers
Destemmer
Vaslin-Bucher Delta E1
Capacity: 1 to 5 t/h
Destemmer and/or Crusher
Whole Berries Option
Crusher
Wine Press
(real old)

“Basket Press”
Old Basket Press
New Basket Press
Press gently!
Wine Press
Vaslin-Bucher XPro 5

Donated by Vaslin-Bucher and KLR Machines
<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
<th>Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press volume</td>
<td>“5” hL</td>
<td>132 gal</td>
</tr>
<tr>
<td>Whole cluster</td>
<td>660 lb</td>
<td>0.3 tons</td>
</tr>
<tr>
<td>Destemmed</td>
<td>1,760 lb</td>
<td>0.9 tons</td>
</tr>
<tr>
<td>Crushed</td>
<td>1,100 lb</td>
<td>0.6 tons</td>
</tr>
<tr>
<td>Juice pan</td>
<td>2.6 hL</td>
<td>68 gal</td>
</tr>
<tr>
<td>from 3,300 lb</td>
<td></td>
<td>1.7 tons</td>
</tr>
</tbody>
</table>
... we use Whole Cluster Pressing for our Chardonnay ...
Free-run Juice

≈ 80%
Press Juice

≈ 20%
... our Traminette had skin contact for 6 hours ...
... Barrel Fermentation aided integration of fruit aromas and oak flavors ...
Carbon Dioxide
\( \text{CO}_2 \) Gas!

Must

55 x
Stainless Steel Tank Fermentation

White Wines: 55-60 °Fahrenheit
Alternative Fermentation Vessels
Red Wine Color

Color pigments (Anthocyanins) located in skin!
Red Wine Color

Extraction vs. Stability

Anthocyanins

Berry:
- 100% in skin
- 0% in seeds
- 0% in pulp

Wine:
- 25% Cabernet
- 15% Pinot Noir
"Extended Maceration"

SKINS + SEEDS

JUICE

SEEDS

=> Seed Extraction!
Seed Removal
Cap Management

Punch down

Max. Temperature: 85-90 °Fahrenheit
Automatic Punch Down
Pumping over the Cap

SKINS + SEEDS

JUICE

SEEDS

counter weight
nozzle
flexible hose
racking valve
pump
Cap Management

Pump-over
Permanent Pump-Over Setup
Alternative Red Wine Fermentors

Open Top

Rotary
Temperature Control!
Variable Capacity Fermentors
Cap Management

Post-Fermentation

• Bottom Slope
• Manhole positions
Filters: Watch the Competition

vs

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Enter Keyword or SKU

GE Whole House Replacement Carbon Sediment Filter
Model RE00TC
$11.94/EA Each

Quantity: 1

Check Your Local Store

Add to My List
Add to My Registry

This item cannot be shipped to the following state(s): HI, AK
Cross Flow Filter
Proper Membrane Filtration Setup
Bottling Line
Bottling Options

- Just vacuum at filler
- + Headspace sparging
- + Vacuum at corkscrew
- + Bottle sparging w/N₂
## Wine Oxygen Pickup at Bottling

<table>
<thead>
<tr>
<th>Gravity flow filler only</th>
<th>Added at the filler</th>
<th>Added via headspace</th>
<th>Added Total O₂</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6.60</td>
<td>1.40</td>
<td>8.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Removed at the filler</th>
<th>Removed from headspace</th>
<th>Removed Total O₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vacuum pulled at filler</td>
<td>6.00</td>
<td>-</td>
</tr>
<tr>
<td>2. Bottle sparged with N₂</td>
<td>0.51</td>
<td>0.02</td>
</tr>
<tr>
<td>3. Vacuum pulled at corker</td>
<td>-</td>
<td>0.15</td>
</tr>
<tr>
<td>4. Headspace sparged with N₂</td>
<td>-</td>
<td>1.15</td>
</tr>
</tbody>
</table>

#1- #4 implemented 6.51 1.32 7.83 = 98%
Oxygen Basics

Air-O$_2$ solubility (68 °F): 8 mg/L

Air-O$_2$ uptake at bottling: 0.17 - 8 mg/L
Uptake via topping (per year): 20 mg/L
Uptake per racking: 20 mg/L
Uptake via cork (per year): 0.1 mg/L

Young red wine:
Total O$_2$ update capacity: 4,000+ mg/L
Optimum O$_2$ update: 60 - 130 mg/L
Advice

- Buy the best equipment possible
- Spend money on equipment (not the tasting room fireplace)
- Visit and taste the US competition
- Leave home winemaking to amateurs
- Be/hire a trained winemaker