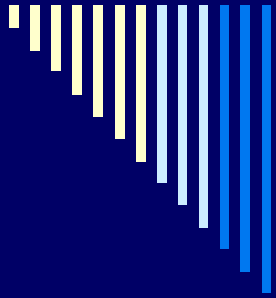


Application of New Techniques to Wine Production

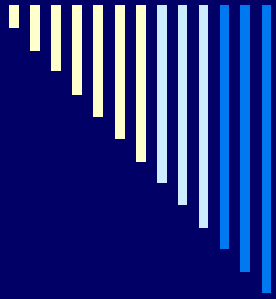




What are these techniques?

- Micro-Oxygenation
- Barrel Alternatives
- Must Handling and Fermentation Aids
- Viticulture !!!

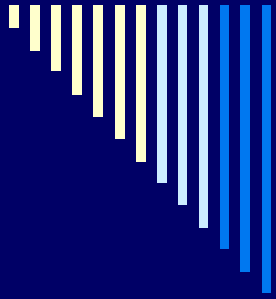




What are these techniques?

1. Viticulture !!!
2. Must Handling and Fermentation Aids
3. Barrel Alternatives
4. Micro-Oxygenation

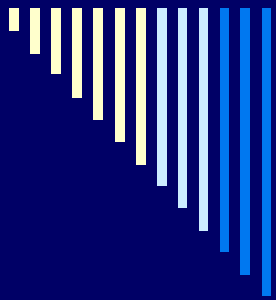




Viticulture

- Better Clones
- Better Varietal Choices
- Better Management
 - Leafing
 - Irrigation
 - Trellis
- Somewhat better judgement of maturity





Fermentation Aids

1. Nutrients – Nothing new but better choices given chemistry of grapes
2. Water
 1. High Brix ferments are problematic (long hang times)
3. Temperature control
 1. Better control of controlled extraction of phenolics
4. Toasted oak and tannin supplements
 1. Build more body and produce better more consistent color
5. Air
 1. Minimize sulfides
 2. Minimize “Vegy” notes
 3. Aids in completion of ferments

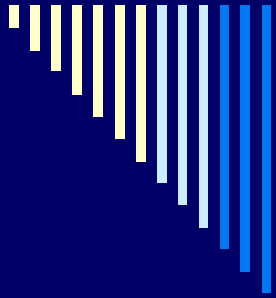


Cold Soak / Fermentation



4. Add toasted oak to the crushed grapes,
 - Add under the crusher, best use of “chips”.
 - Add beans at 1.5-4 kg/ton.
 - Or add fine dust (StaVin granular) at 1/4 to 1/2 kg/ton.
 - Also can add tannin supplements (sequential additions provide more consistent results).
-
- A combination of toasted oak and tannins may maximize results.





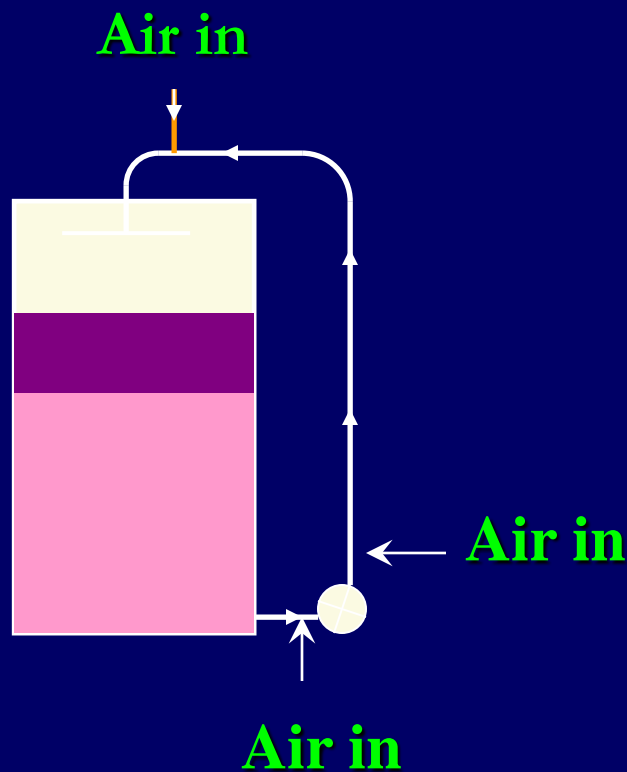
Fermentation Aids

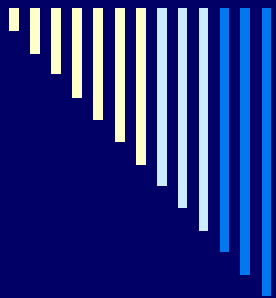
- Nutrients – Nothing new but better choices given chemistry of grapes
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 - Build more body and produce better more consistent color
- Air
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 - Minimize “vegy” notes
 - Aids in completion of ferments



Aeration During Fermentation

Pumpover w/aerator (too much is not enough)





Mazzei Injector

An easy to use, no hassle venturi system for macro-aeration of fermenting must.

500 Rooster Drive
Bakersfield, California 93307
(Phone:) 661- 363- 6500
(Fax:) 661- 363- 7500
www.mazzei.net

Check valve – to prevent backflow of must

air flow



Flow





Mazzei Injector in place with adapters to Tri-Clover fittings and check valve.



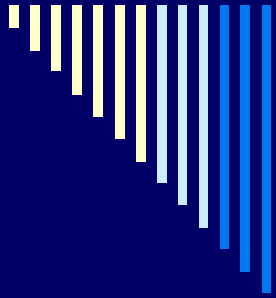
Note shut-off valve

Other Methods to Introduce Air or Oxygen into Fermentations



Inline injection of Oxygen into pumpover line. Sight glass allows the gauging of bubbling rate into must. Sparger was run at 20 psi





Barrel Alternatives

□ Staves

- Can be used in tanks, if cut down in barrels
- Provide barrel like extraction rates, if fire toasted barrel like flavors
- Size and % end grain controls extraction

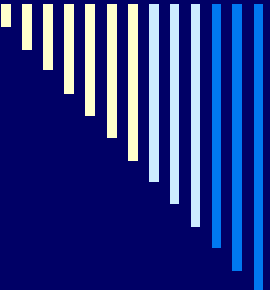
□ Chips

- Good in red fermentations
- Extracts too fast for aging or white ferments to provide complex barrel like flavor and body integration



Fan Pack System
(44 ft² or 4 M²/ pack \cong 3 barrels)





Oak Segments™ 15 lb (6.8 kg) Bag

StaVin Inc.



French, American, Euro

SIZE (≈ 2" x 2" x 3/8")

**Simple to use, since they can be bagged, with
extraction characteristics similar to staves.**



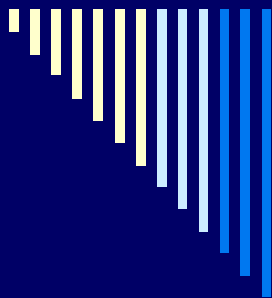
Beans™

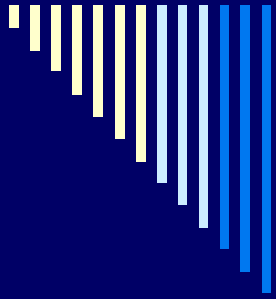
20 lb (9 kg) Bags \cong 13 barrels

Size (3/8" x 3/8" x 3/8")



French
American
Euro





What are these techniques?

1. Viticulture !!!
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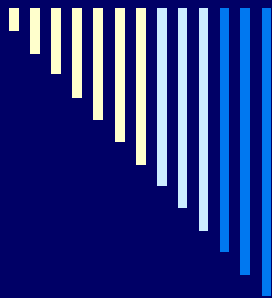




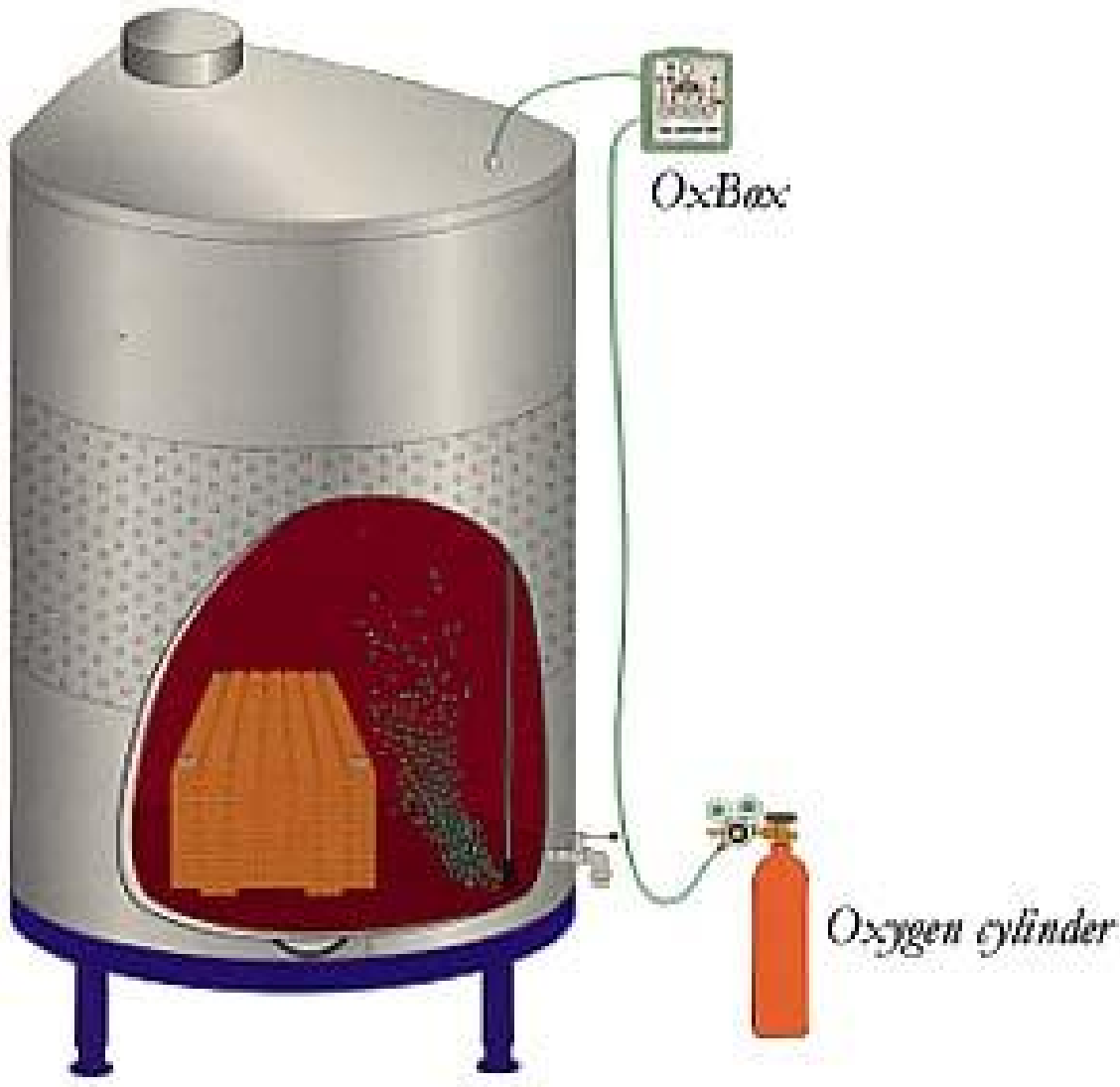
Micro Oxygenation – Why?



- It is not magic, voodoo, nor is it non-traditional
 - Allows winemakers precise control of oxygen use in wines
 - Key to use this technique is it's combination with barrel alternatives to augment barrel programs
 - Allows winemakers to make better wines
 - Newer barrels, better barrels, better sanitation
-

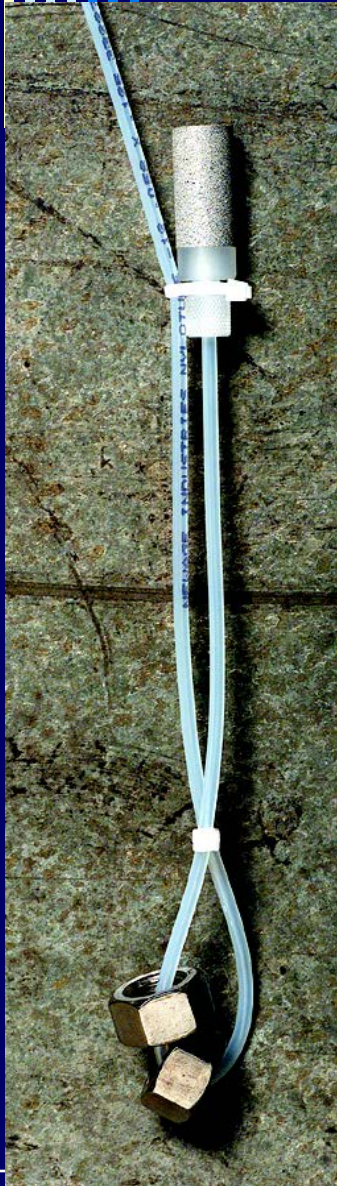
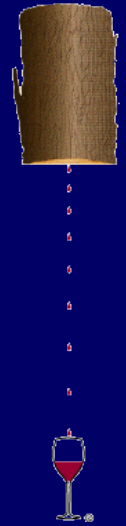


Tank, with toasted oak intergration system



Sparge Tip for Micro- Oxygenation

10 μ Sintered
Stainless Steel





Micro Oxygenation cannot and will not cure all problems!

However, it can help improve wines, especially when used in combination with toasted oak.

It can:

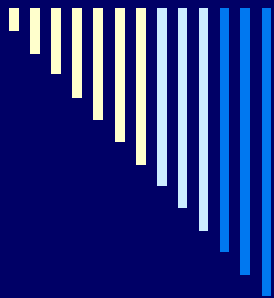
- ✓ stabilize color.
- ✓ allow control of O₂ absorbed into wine
- ✓ build middle body
- ✓ may minimize “veg” character
- ✓ put a wine in balance
- ✓ correct slight sulfide problems
- ✓ reduce dependence on barrels for flavor and aging



Tank Stirring – Turning a tank into a Barrel.



Reinforced food grade tubing ($\frac{2}{3}$ to 1 diameter length of the tank) is attached to the barbed fitting. Fermentation bungs are added for weight.



Summary

- Great grapes
- Great nutrition
- Good Yeast
- The best Toasted Oak
- Aeration during fermentation
- Micro-Oxygenation during aging
- Stirring Lees
- All Together make the best wines

