

# Alcohol Adjustment Current Options

*Darren Michaels*  
*Winemaker Laffort USA*  
*Winemaker/Owner Tetrahedron Wines*  
*Big River Laboratories*

**Goal #1:** To selectively remove ethanol with a minimized effect on aromas and mouthfeel

**Goal #2:** Maximize cost-benefit with increased sales of adjusted ethanol concentration

**Goal #3:** Achieve wine quality standards

## Major Options in the US:

- 1) Spinning Cone distillation of part of the wine
- 2) Reverse Osmosis-filtered and removal by industrial perstraction or column distillation
- 3) Direct removal via novel perstraction of wine

If possible submit samples for small lot processing for ideal target- Call companies for pricing and options

**And mind those VA's-** they can have a significant effect on aromatic impacts of alcohol removal targets



## **Spinning Cone: Conetech**

**High surface, low temperature distillation of partial amount through low pressure/high spinning surface area evaporation**

**Remove flavors, then alcohol, and blend back flavors**

**No DSP required as wine is shipped to location**

**Does not require pre-filtration/settling**

**One pass through the equipment**

## **Spinning Cone: Conetech**

**Flavor removed at ~ 82F**

**Ethanol removed at ~97F (boiling point of ethanol is 173.1F)**

**Distilled product >50% ethanol**

**Methanol conserved (don't drink straight!!)**

**To move from 15.2% to 14.2%: ship 10% of total volume than adjust down to 4% alcohol (can go lower)**

**Costing (not including shipping costs to facility):**

**Less than 1000 gallons: \$1350 + \$200 facility costs**

**More than 1000 gallons: \$1.35/gallon + >\$200 facility costs**

## **RO Filtration/Industrial Perstraction: Winesecrets or VA Filtration/Pacific Winemaking**

**500-600 PSI reverse osmosis of wine (or portion of wine) to create permeate or “low color wine fraction”**

**“Low Color Wine Fraction” is passed through a perstraction unit until target is achieved**

**Multiple passes required but low temperature  
NTU <50  
Heat/Cold stabilization might be required**

**Wines are shipped to facility or treated with mobile system- DSP required for onsite/estate processing**

## **RO Filtration/Industrial Perstraction: Winesecrets or VA Filtration/Pacific Winemaking**

**Perstraction: hydrophobic membrane contractor**

**Simply:**

- 1) Permeate leaves the RO**
- 2) Enters perstraction unit**
- 3) Water enters in opposite direction**
- 4) Ethanol passes through hydrophobic filter**
- 5) Carried away by the strip water and stored**
- 6) Some heating required of water/permeate**



## **RO Filtration/Industrial Perstraction: Winesecrets/VA Filtration**

**Strip water containing 6-9% ethanol shipped, distilled, and/or can be shipped back**

**Winesecrets: \$2500 per day operation in WA- visits are clustered around same weeks**

**100 liters of alcohol per hour so larger volumes is about \$2.50/liter removed plus cost of transportation**

**VA Filtration: Call Bruce at Pacific Winemaking for quote generation in PacNW**

## **Direct Perstraction: Novel method from Mavrick**

**Direct contact with perstraction-like membrane for direct alcohol extraction (less losses)**

**10-15 PSI required to push wine (low pressure)**

**NTU < 100**

**Cost based on job but typically \$4-\$6.50 proof gallon**

**DSP required for on-site/estate**



**Thank you**  
**Darren Michaels**  
**Winemaker**  
**Laffort USA**  
**Tetrahedron Wines**  
**Big River Laboratories**  
**[Darren.Michaels@Laffort.com](mailto:Darren.Michaels@Laffort.com)**