

Winemaking Case History

2010 Western Iowa Dry Edelweiss

[Cool Fermentation - Batch B]

Fruit source: Doug Grave, [Victorian Vineyards](#), Glenwood, Iowa (Loess Hills).
Picked-up 15 gallons of pre-settled juice on Saturday, August 14, 2010
Juice pails packed in ice and transported 100 miles to Vermillion, SD

Stylistic goals: Looking to see if a bone dry wine akin to Chablis or unoaked Chardonnay could be crafted from early-harvest (*sans* “foxiness”) Iowa Edelweiss grape juice. Although Edelweiss is typically made in a semi-sweet, Germanic style, I personally prefer a dry white. Given the “relatively” low TA of 8 g/L in this juice, and the expectation that some acid would be lost via cold stabilization, this looked like an ideal opportunity to craft a dry Edelweiss without the need for chemical deacidification [Editorial Note: In my experience it is very difficult to make a good wine following chemical deacidification...i.e., it’s never worked well for me].

Prefermentation numbers:

BRIX = 14.2 TA = 8.0 g/L pH = 3.38 Batch volume = 5 gallons

Yeast selection:

Lallemand 58W3 http://www.lallemandwine.us/products/yeast_chart.php
Purchased in 8g packets from <http://www.morewinemaking.com>

Selected for ability to enhance floral characteristics of aromatic whites during cool fermentation; enhanced mouthfeel and balance; low H₂S production; and, ability to minimize bitterness (unlike “work horse” yeast strains).

Temperature range:	54F-77 °F	Nitrogen needs:	medium
Fermentation speed:	moderate	H ₂ S production:	low
Competitive factors:	neutral	Alcohol tolerance:	14%

Winemaking Procedures

Prefermentation Adjustments

5 gallon batch used here (10 gallons set aside for fermentation with other yeasts/conditions)
Juice sulfated at 50 PPM to inhibit spoilage yeast/bacteria

Chapitalization

Since Edelweiss is harvested early to prevent the development of characteristic “foxy” flavors, chapitalization was necessary. A target alcohol level of 11% was selected based upon stylistic considerations. Hence, 7 and a half cups of cane sugar were added to the 5 gallons of juice with the goal of bringing the Brix up to a level of 20.

Adjunct Additions

Fermaid K yeast nutrient – 1g/gal x 5 gal = 5g Fermaid
OptiWhite – 1.9 g/gal x 5 gal = 9.5g OptiWhite

Yeast hydration/pitching protocol

Sun-8/15-3PM

50 ml tap water at 110°F; dissolved 1 tsp GOFERM; wait for temperature to drop to 104°F
add 8g of 58W3 yeast; wait 10 minutes; add 50 ml Edelweiss juice; wait 5 min; pitch yeast
juice temperature at pitch = 66°F

Fermentation

Sun-8/15-3PM

5 gallons of inoculated juice in 6 gallon glass carboy fitted with **“blow-off” tube assembly**
and placed in a small chest freezer with a **temperature setting of 60°F** (Regulated by an
external Johnson Controls 419ABC thermostat).

Original Brix = 20.5; temperature = 66°F

Tue-8/17-10PM

Bubbling nicely; fermentation clearly underway; temp < 60°F
Stirred juice from bottom for 1 minute;
RBrix = 18.5 Temp=60.9°F SG=1.071

Wed-8/18-10PM

Looking fine; stirred lees; SG=1.047

Thu-8/19-8AM

Looking fine; stirred lees

Thu-8/19-11PM

Stirred lees; SG=1.024; Just a “whiff” of H₂S...Be watchful!

Fri-8/20-10PM

Bubbling has slowed considerably
SG = 1.008

Racked from 6 gal primary carboy to 2 x 3 gal carboys (No H₂S odor detected anymore)
Topped-off BOTH carboys with wine from Edelweiss Batch “A” (53W3 ferment at 72°F)
Sealed with air locks and left to finish fermentation to dryness

Sat-8/21-11PM

Stirred lees; SG=1.001

Sun-8/22-10PM

Stirred lees; SG=0.995

Post-Fermentation Treatments

Sun-9/5-10PM

free SO₂ test = 4 PPM

Added 30 PPM SO₂

Add 1.5 g/gal **LYSOZYME** (to inhibit malolactic fermentation)

Racked 2 x 3 gal to 5 gal / 1 gal / 750 ml glass containers all under air lock

Note: nice, white-yellow lees with sweet and pleasant aroma

Sat-10/18-2PM

Racked-off LYSOZYME to fresh 5 gal carboy

Added 30 PPM SO₂ (985 mg KMETA)

Added 0.5 g/L Bentonite from 5% slurry (189 ml of 5% slurry)

Sat-1/1-2PM

Placed 5 gal carboy into 24°F freezer chest for Cold Stabilization (Bentonite still in place)

Sat-2/5-3PM

Removed 5 gal carboy from cold stabilization

Noticed some "white stuff" (Mycoderma?) floating on top

Removed "stuff" with paper towel and sprinkled some EVERCLEAR onto surface

Racked to fresh 5 gal carboy (topped-off with 700 ml Lindemann's Chardonnay...4% (v/v))

Added 30 PPM SO₂

Note: lots of tartrates (and Bentonite) settled-out during cold stabilization

Wine is still a bit hazy...Wait & see before trying another Bentonite treatment

Sat-3/12-Noon

This wine has fallen brilliantly clear (**but see SUMMER UPDATE below**)

No additional Bentonite fining necessary

Taste assessment: tremendously well balanced acid-to-alcohol; nice nose and palate, outstandingly creamy mouthfeel. This wine is ready to bottle without blending, etc....Excellent dry white wine.

Lab tests prior to bottling:

free SO₂ = 20 PPM pH = 3.41 TA = 7.0 g/L (down from original 8 g/L in juice)

RS = 0.1% (bone dry as per *Clinitest*)

Alc = 11.5% (distillation/hydrometry technique)

Racked to fresh 6 gal carboy

12 PPM SO₂ added (398 mg KMETA) to bring total free SO₂ up to 32 PPM (0.8 molecular)

Bottled via gravity siphoning

Total number of bottles: 24 x 750 ml

Summer Update regarding Clarity

This wine is no longer clear. It's developed a haze due to very fine solids suspended in the wine. The aroma and taste are still excellent and there has definitely NOT been a refermentation in the bottle. My best guess is that we're seeing **LYSOZYME HAZE**. Post hoc tests show that Kieselsol/chitosan fining significantly reduced this haze (but did not completely remove it). Need to develop a plan to prevent this problem for next year's vintage.