File Name

Yeast: 58W3 (Brand=Lallemand; enhances spicy, fruit & floral descriptors; contributes mouthfeel; requires good nutrient strategy)
Volume: Single recipe= 5-gallon bucket (modify according to juice available).
Ageing: About 12 months, can get by with less.
Fruit ripening: 2012-06-11, brix (runoff from 5 berries): 8°; . . . 13th: 10°; 18th: 8.2°; 22d: 8.8° & tastes tart and green; 23d: 10°, and it tasted less green than yesterday; 24th-27th: overcast and rainy (TS Debby)—the worst weather for ripening!; 26th: 10.2° (surprised that it was still this high, given overcast and continuous rain; 27th: 9.6°; 28th: 9.8° (surprised it was so low); 29th: 11.8° (big change), TA>0.75% (didn't titrate to end point); 30th: 11.4° but N thought it would not be long now, but still some green taste; 01st: 11.2° (going backwards!), TA=1.05%; 02d: 12.2° & beginning to taste ripe (rained last night); 03d: TA=0.92%, pH = 2.98, brix=12.2°; 04th: 12.5°, then rained; 6th: 12.8°, TA=0.75% & N thinks it is a little green still. Cloud cover running 30-40%; rain chances over next week ~30% every day; 7th: 12.0° , seeds still green, juice had best flavor or any that I have ever had from BdB; 8th: 14.6° ; TA=0.6; pH=3.38. repeated measurements on larger sample: 13.4°, 0.7 & 3.27. Decided I better go with harvest tomorrow (in part because worried about herbivory (had problem last night) and because of construction schedule, else might hold off another day)
Tasting notes: Flavor subtle, but excellent after it had been bottled for a while. Good balance. My favorite white, though I do like muscat, Reisling, as well as muscadine, etc. I plan to plant more vines (better sun, better trellis, more vines) on the basis of my fondness for this wine.

Protocol Date	Real Date	Protocol Activity	Real Activity
2012 07 09 Day 0 t_o		SOP, wash (detergent, Brand=Seventh Generation) and sanitize containers and work and nearby surfaces (percarbonate [Brand=Oxi Clean] followed by IO Star. Sanitize w/percarbonate floor that will be disturbed by walking. Pick fruit as early as possible so that it is as cool as possible. Destem and crush as soon as possible.	Removed netting, started ~0830. Then, picked grapes. Slowly. Discarded "all" unsound ones and MOG. Some rotten grapes. Washed clusters with sprayer water hose. Did good job. Mainly to get rid of any rotten juice on the outside of sound grapes. Also got rid of the random insect and spider. Total weight of grape clusters: 96. 5 lbs. Weight of press cake and stems=27.5 & 3 lbs repectively, for overall juice weight= 66 lbs (i.e., gross yield of juice calculated to be ~7.5 gallons, but some lost in processing).

		Determine pH (used to estimate K-met to add). Add K-met as determined by pH (for 0.8 ppm $SO_{2\ molec}$ (*Tech note*: Campden Tablets vary in overall size, whether the K^+ or Na^+ salt, and the amount of binders. Many/most contribute 66 ppm SO_2 per gallon, or more than 2x the C&B brand, which weighs more than the average (~0.52 g vs. 0.44 g).) **After** meta is added and stirred in, + xxx ascorbic acid To obtain the proper amount of ascorbic acid to add, multiply the amount of added (pure) meta by 4.4. IMPORTANT to not use too much ascorbic acid as need enough SO_2 to oxidize H_2O_2 generated by ascorbic acid→dehydroascorbic acid.) (*Tech note:* 1 tsp ascorbic acid = 2.83 gm and in 5 gallons ≈ 150 mg L^{-1}, which is the upper limit allowed in the UK, so I put my upper limit there, too. This level = 0.85 mM whereas 10 mM is typical concentration used to protect in plant extracts. Note that much of the SO_2 free will be bound up immediately to must components and the remainder will be dissipated by the excess ascorbic acid. Empirically, this protocol has worked well for me before so I hesitate to alter it.) 2 h after SO_2 addn, +1.5 tsp pectinase (*Tech note*: Give SO_2 time to bind/dissipate	While washing outside, soaked batches of clusters in nom 5 gallons H_2O containing a tsp citric acid + 2 crushed C&B Campden tabs. 10 min. Rinsed grapes with water, individual clusters, examining for 3^d and final time to get rid of MOG. ~1300: crushed grapes, collecting in 3 ~ equal batches in plastic buckets ~ 3.5 gallons each. pH = 3.1 Then to each bucket: + 2 crushed C&B Campden tablets to each & stirred well. + 1 tsp ascorbic acid & stirred well. Hope not too much! (this amt worked out fine) + 1.5 tsp tannin (FT Blanc Soft) & stirred well. +3 heaping cups of rice hulls & stirred well. Transferred each bucket to separate sink compartment containing water bath (2 gallons ice in each compartment). Blanketed top of must with CO_2. Covered loosely with lid. After 10 min, started pressing: 2 atm 10-20 min each, until juice trickled slowed. Trying to balance yield with prevention of oxidation. While collecting juice, covered collection bucket with saran wrap and blew in small breeze of CO_2. As soon as possible, transferred juice to carboy that had been sparged with CO_2. Tried to balance out free-run juice from juice from harder presses in carboys. The first bucket for about 10 min (+crushing time) and the third for about 1 h (+crushing time).

As soon as possible		before pectinase addn. This is less pectinase than recommended by manufacturer, but it has worked well before, so do not want to change it.) 4 h after pectinase addn, +2.5 tsp tannin (*Tech note*: Tannin is added at this stage to help precipitate the protein in the juice over the next 24 h. Hesitate to use gallotannin. Give pectinase a little time to work before adding tannin.) TOO MUCH TANNIN—CARRIED THROUGH AS TOO MUCH EVEN AFTER 3 MONTHS. Reverse on this one Judged at bottling 4/2013 not too much tannin. Make no change in protocol Transfer primaries of crushed grapes/juice to sink that contains water and 4 jugs/each of ice. Blanket top of juice with CO_2. Fit top. Leave in cold-soak for 1-2 h.) (*Tech note*: The purpose of the cold soak is to cool the system down as soon as possible and also to extract a little flavor from the skins before pressing.) Press (*Tech note*: Purge collection bucket w/ CO_2 and cover top of bucket—except hole for juice coming from press. The key point at all stages is to avoid oxidation. Transfer buckets to 70 F fermentation chamber, and call it a day.	pH=3.27 TA=0.8% As extra precaution, blew out ullage with CO_2. Put carboys into refrig @ 55F to settle overnight.
Day 1	~1400	Rack off sediment into sparged carboy. Blow	As stated.

12-24 h after last SO_2 addition—longer is better.	2012 07 10	out ullage. Chaptalize (1.5 oz sugar/^{o}Brix per gallon, plus a little) to ^{o}Brix=23-24.	Note—did not do a perfect job on racking off sediment; it was light and fluffy and I was working alone. Esp. in smaller volume, got more sediment than I wanted. +1.5 tsp pectinase C&B
	1730		Calculated 1st bucket to have vol=3.6 gallons and 2^{d} bucket to have 2.6 gallons. (Calculation based on Brix=11.5^{o}--that is just the way it was, much lower than I wanted but probably a result of overcropping and shady location—converted to SG, then gallons). Chaptalized to Brix=23.4^{o}, starting with ~4.2 lbs and 3 lbs respectively.
	1800	Prepare starter, Go-Firm. Yeast 58W3.	To be honest, I screwed up this step. I was beyond tired. I did prepare a starter and bumbled my way through it and got activity in the starter and overall had the right ratio of H_2O/must/yeast/Go-Ferm. Some of yeast were hydrated at correct initial temp, but I realized my calculation error and hydrated some at ~85F. I should have waited. Anyhow, yeast was active and I pitched.
	~0700 2012 07 11		Relieved to see fermentation going. Inexplicably, big carboy has tannish blanket on top, but small one not. +4.5 & 3.5 gm respectively, Fermaid K, stirred well and put back in @ 70F
	1100		6 bubbles min^{-1} large carboy and 14 bubbles min^{-1} small carboy, but bubble size not same, so no direct comparison can be made. Blanket on larger carboy as earlier, not on smaller one.
	1700		10 & 18 bubbles min^{-1} respectively. Odd blanket on larger volume gone. Dropped T to 65F. (i.e., 24 h @ 70F to get it going.)
	~0700		30 & 45 bubbles min^{-1} respectively. Too fast to suit me. Next year,

	2012 07 12 1645		just 24 h at 70F without the addn 12 h @ 65. ½ " foam on both. Stirred well. Turned down to 60F. $^{o}Brix_{calc}$ =18.8, i.e. nom 20% sugar depletion.
	1550 2012 07 13 1915		24 & 34 bubbles min^{-1} resp. large and small carboys $^{o}Brix_{calc}$ =14.4 & 13.9 resp. for large, i.e. nom 40% sugar depletion + 4 & 3 g resp. Fermaid K, stirred well (lots of outgassing caused by adding Fermaid K and mixing) Running smoothly, about the same rate.
	1350 2012 07 15		Stirred must. $^{o}Brix_{calc}$ =7.6, nom 68% sugar depletion
	1530 2012 07 17		13 & 24 bubbles min^{-1} resp. large and small carboys
	1440 2012 07 18		Stirred must. $^{o}Brix_{calc}$ =1.6 & 2.2 resp for large and small, nom 92% sugar depletion
	1040 2012 07 19		12 & 16 bubbles min^{-1} resp. large and small carboys
	Day 11 1130 2012 07 20		10 & 14 bubbles min^{-1} resp. large and small carboys Stirred well. $^{o}Brix_{calc}$ =-1.9 ($SG_{equivalent}$=0.993) & -1.6 ($SG_{equivalent}$=0.993) resp for large and small

			The brix calculator shows that fermentation is over, but obviously it is still bubbling. A disconnect. I'll just wait it out, can't be long.
	Day 12 1455 2012 07 21		8 & 16 bubbles min^{-1} resp. large and small carboys Foam on top of large carboy, but not small one.
	Day 13 1455 2012 07 22		8 & 14 bubbles min^{-1} resp. large and small carboys Still chugging???
	Day 17 1455 2012 07 26		4 & 12 bubbles min^{-1} resp. large and small carboys pH=3.15 & 3.10 resp. for large and small carboys TA=0.85% for large $Brix_{app}$ = 7.9 & 7.8 resp, meaning $Brix_{calc}$ ~-2.3 & SG_{calc}=0.991 Taste: sugar not detectible; citrusy & going to be good (N); yeasty nose and going to be good (B) Turned refrig to 70F to finish it up.
	Day 18 1455 2012 07 27		Both @ < 1 bubble min^{-1}
	Day 20 1455 2012 07 29		Racked into purged carboy; during racking, +3 crushed Campden Tablets, ¾ tsp sorbate Purged ullage and transferred into 32F frig for cold stabilization for 2-3 weeks.

	2012 08 16		Removed both 3-gallon carboys and racked into 1 5-gallon carboy (previous sparged with CO_2). During racking, bled CO_2 into emptying carboy. During racking, +5 crushed C&B Campden (30 ppm) $RS_{accuvin}$ N.D., <100 mg L^{-1} N says ready to drink now, but a little yeasty. Had about ½ gallon of overage. Collected it with same care as regular carboy. Brought into house for chemistry tomorrow. Oh, my, I really like this wine. I hope it holds its own for the next few months.
	2012 08 17		F.G.=0.994, empirical TA=0.8% pH=3.14 All's well with this batch—poured out some in sink and it filled the air with aroma. Put into house closet for another 2-3 months before bottling.
	2012 10 04		Transferred to refrig 32F
	2012 10 11		Lowered T to 27F
	Day 102 2012 10 19		Racked into sparged carboy, purged ullage As racking, +5 CT C&B N: unbalanced, too much astringency. I think it needs some acid and sugar? Nice freshness, but not a depth of flavor. Bill: not enough flavor & I don't think any amount of winemaking will help—need fewer grapes per vine and vines in sun.
	~Day 266 2013 04		No. 2 filter into sparged carboy containing 5 CT C&B, + 130 g sugar, mixed, purged ullage.

	04		
	Day 270 2013 04 08		Bottled into sparged bottles, then blew out ullage. 25 bottles This wine has a very subtle mild flavor and it is quite good to me. N likes it less than the Darlene. The tannins were tamed and the mouth feel was adequate. Delightfully crisp. Good protocol.

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