

## Citrus Melomel (**Star**<sup>1</sup> Procedure, but Status lost on Ageing)

Spring 2010

Tupelo honey, Tallahassee (Outlaw Homestead), taken off in spring and supers stored in freezer til 2010-10-03. Extracted. ID'd as Lot No. 4 on Outlaw-330, Image Workshop. Stored in brew bucket in kitchen.

*Start out with 14.5 lbs honey and add water or honey to get brix right. . . . a little hard to make a "recipe" without knowing how much sugar (and acid) is in the citrus juice.*<sup>2</sup>

2010-11-24 (Wednesday before Thanksgiving)

Picked box of Changsha mandarins (Outlaw Homestead, propagated by WHO from IFAS strain at Monticello, FL, 1980s). *(Any other mild mandarin should give the same result. I am anxious to try it with Keraji, my favorite mandarin, or any number of the Satsuma cultivars.)*

Juiced on porch, 3 qts. Juice rather weak, lacking complexity of satsumas. Tasted good (meaning not too old.)

2010-11-27

Both sides of sink bleached, as countertops, etc. Left side of sink, IOStar.

*I am phasing out the use of hypochlorite around my winemaking areas because of problems—which I have not had—of trichloroanisoole (TCA) taint in the wine. I do not view this problem as too threatening in my personal situation as I do not have exposed wooden surfaces (where the bleach interacts with lignin to form the precursor to TCA).*

To fruit bag, +1/3 cup medium toast oak chips *(can skip this oaking since so much oaking later, this would be insignificant)*  
+ citrus juice

Drained out juice onto honey, put bag with pulp and residual juice into bowl.

Added "cold" H<sub>2</sub>O with spray to oxygenate. *(Although it is easier to mix in honey with warm water, used cold water since it will hold more oxygen. At least this is correct theoretically, but I haven't done the calculation to determine the significance—at any rate, the more O<sub>2</sub> the better during the yeast replication phase [O<sub>2</sub> is essential for fatty acid biosynthesis, &c.]*

+6 crushed campden tabs (added early this time so can get into fruit bag while subsequent vigorous stirring)

+2 tbs nutrient, stirred well.

+2 tsp energizer *(Even though running aerobically at first, still like this product as a back-up.)*

+1/4 tsp grape tannin (a little rounded, but lost some during skimming, so probably equal to 1/4 tsp) *(Even though adding more tannin later, would keep this step to drop junk out into primary.)*

Started with Brix>31% (must have been more sugar in juice than I guessed), + water to get to 25.2%. Total ~ 6 gallons. Skimmed very well (in part to reduce volume) PA<sup>3</sup>~14.5% ABV (UC Davis method).

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<sup>1</sup> A **Star** Procedure is one that has given exceptional results for us (for our taste) and one that we will use again without an attempt to improve it.

<sup>2</sup> Italicized text is added after the batch was finished as guides for next time.

*Would recommend measuring TA before acid addition. This is a little more critical with this method using CdB yeast (usually I use 71B, which drops TA during fermentation due to ML [probably not much in the case of mead]—n.b. some yeast, e.g., D21, form acid). Hard to balance since pH~3.6-3.8 is protective against bacterial contamination, but TA is sensed in taste.*

pH ~4.4, + 2 tbs acid blend (in two steps) to pH ~3.8

Wiped inside of primary with 5x Kmet down to must level.

1116 Covered with clean top.

2100

+2 tsp pectinase (should have, but didn't, stir in)

2010-11-28

1115

House temp=72F

b/c reputation of Côte des Blancs for being hard to get started, was more careful than usual: (I myself have used it without issue with Perry Darlene muscadines, but am still influenced by what I read, too.)

took CdB out of refrigerator, set on counter for ~5 min, then held against leg covered by hand for ~3 min

water at 104F and heated container with this water before collecting water to pitch

+118 mls water and sprinkled 2x cachets CdB on top, 10 min (*I double up on the yeast so my bugs will get off to a strong start; cost is trivial, ~3-4 cents per bottle extra.*)

+~75 mls must, 5 min

Stirred and poured into must gently.

+10 min, stirred must

2030

Taking off, foaming more than I remember for this strain, punched down inflated fruit bag.

2010-11-29

0700

T=68F, punched down. Fermenting well.

2230

T=72, punched down, Fermenting well.

2010-12-01

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<sup>3</sup> PA, potential alcohol; ABV, alcohol by volume; CdB, Côte des Blancs (Red Star), 71B, 71B-1122 (Narbonne) (Lallemand); D21, ICV-D21 (Lallemand); TA, titratable (total) acidity; pH, *potential* of H (H<sup>+</sup> activity); Kmet, potassium metabisulfite, strong Kmet, 5 Campden tabs/gallon; ML, malolactic fermentation (oxidative decarboxylation of malate); SG, specific gravity; FG, final gravity; OG, original gravity; SOP, Standard Operating Procedure, in this case for sanitation of work area

0700 T=71

S.G = 1.062 (note that this is the same as the mead this date, but this one started out at higher OG, so fermentation is faster.)

Racked into secondary.

Bubbling rate too fast to count.

N.B. took the residue from racking and racked into another secondary, to which was added residue from mead this date. Purged ullage with CO<sub>2</sub>, but probably not necessary since releasing gas. To be used on first racking. Mixed mead=80 bubbles/min (small bubbles).

2010-12-02

1848

Back from N<sup>o</sup>ville (N didn't go) T=72

87 bubbles per min

(residual wine down to 27 bubbles per min)

2010-12-05

Back from N<sup>o</sup>ville (n did go) T=67

63 bubbles/min

2010-12-12

18 bubbles/min

2011-01-27

0.4 cups med toast Carlson oak chips, soaked in strong Kmet for 1 hr, then trans chips (leaving behind Kmet soln) into new carboy. (*Incubation of this oak until 2011-05-23, when bottled. Altogether, this toast level, amount, and time works out really well to give a noticeable oak, but not overpowering.*)

Racked about 1.5 gallons into new carboy

+ 1.25 tsp sorbate, swirled

+5 crushed campden tabs, swirled

+ 0.5 tsp tannin

Racked remainder, filled to w/i 2" of top.

Not too much flavor to it, maybe tannin and oak will help. Asst vintner—without prior knowledge—did comment on citrus flavor, but it was subtle. No off flavors at all. Being on the lees so long didn't hurt it. Still pretty cloudy.

TA=0.75%, a little surprising since the acid was not picked up much on tasting (but what to expect on the basis of the acid blend added). (*this is a little more acid than I'd use next time, drop back to about 0.6%--the only alteration to this procedure, still a STAR!*)

pH~3.5, as best one can measure with Litmus. (I've since obtained an electrode so I don't have to get the asst vintner to do the color thing for me.)

Did not do anything to residual mead.

2011-05-22

Cleaned kitchen SOP, bleach, IO Star; cleaned tools SOP IO Star.

2011-05-23

Racked into sanitized bucket.  
+5 crushed campden tabs

TA= 0.75%  
FG= 1.004  
pH= 3.5

Bottled, 22

At this point, at least, this is probably the best mead we have made. The citrus and oak came together very nicely. Of course, taste varies and the next fellow might think it is cleaning fluid.

Unfortunately, this mead was actually better when it was very young; it does not hold well after opening, so it should be served cold and freshly opened.

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