

Mead Making For Brewers

Billy Beltz
Lost Cause Meadery



#HOMEBREWCON



Homebrew Con

Recording Archive



<https://www.homebrewersassociation.org/seminars/>





Billy Beltz

Co-Founder

Lost Cause Meadery

***“Who the
*@#\$ is
this guy?”***



Lost Cause Meadery

- San Diego-based meadery, established 2017
- Most Awarded Meadery 2019-2022 (Mazer Cup International)

Educational Efforts

- 2019 Ken Schramm Award Recipient
- Teach mead making at UC Davis & UCSD
- Mead research with White Labs & experiments published in Zymurgy
- BJCP Certified Mead Judge



What is Mead?

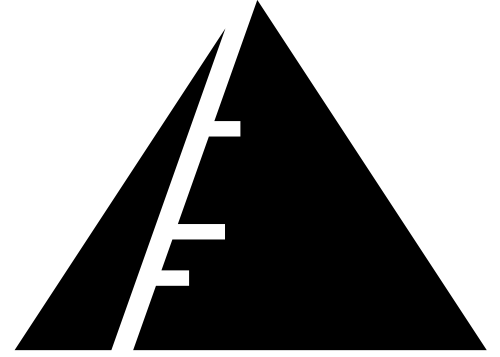
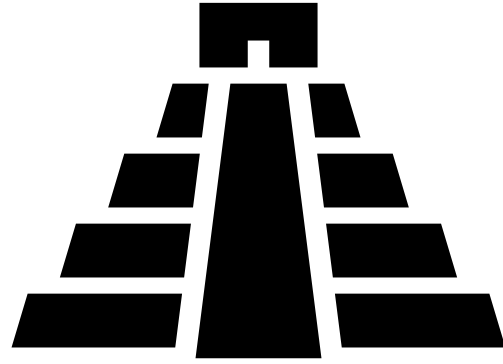
Mead is a delicious beverage made from **honey**

Arguably the world's oldest form of alcohol, mead has been produced and consumed by almost **every culture** in the world

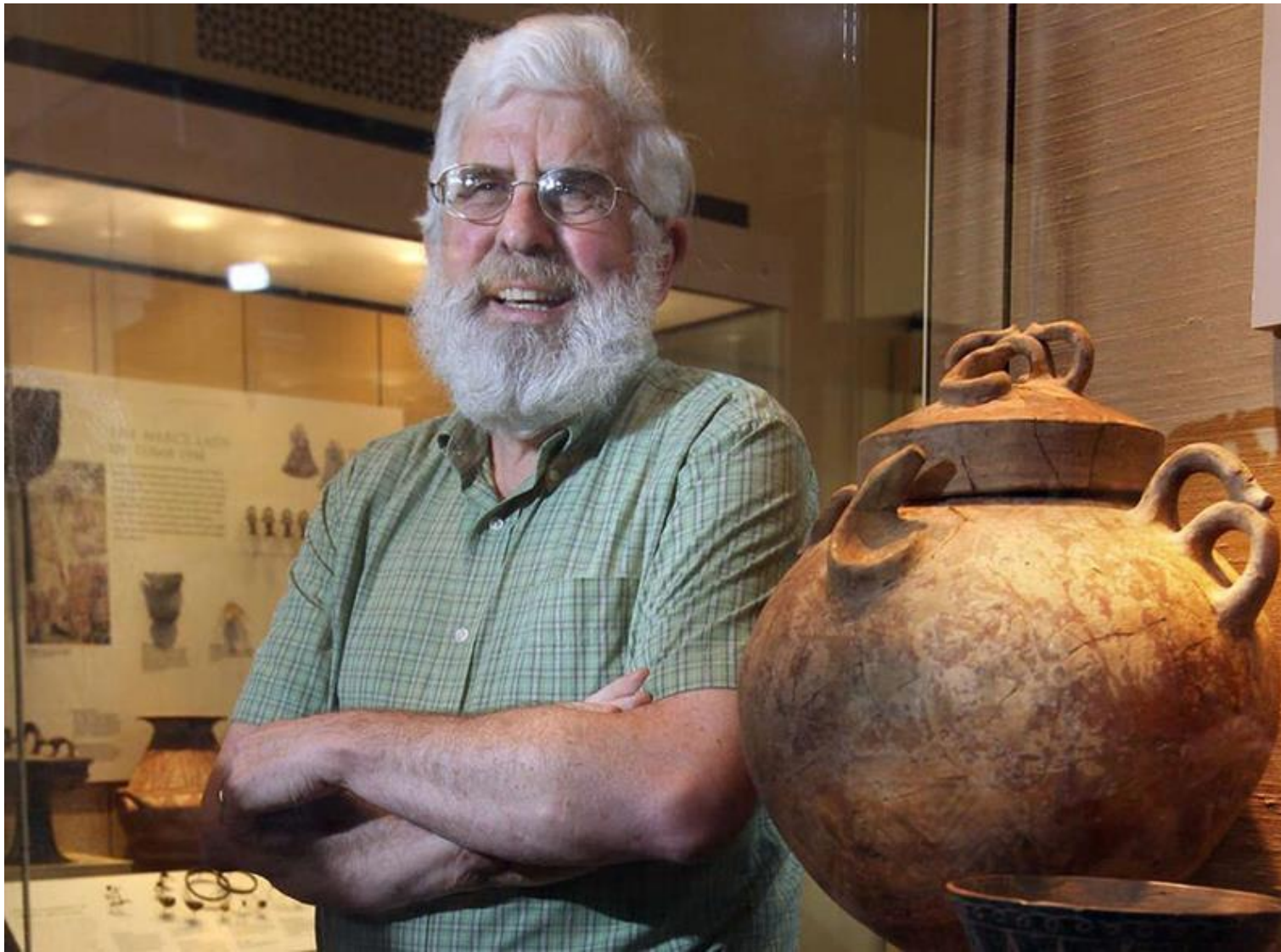




**mead is like
no other
beverage on
earth**



Mead is
OLD



- Oldest fermented beverage
- 8000 B.C. or older
- Produced and consumed by almost every culture in the world
- **Jiahu, China:** 7000-6600 B.C. (wild grapes, hawthorn, rice, and honey)

What makes mead SO DAMN AMAZING?

Adventure: lack of dogma and rules

Flavor: wide range of intensity

Terroir: sense of place

Versatility: most versatile alcohol on the planet?



Mead Myths

1

Making mead
is **EASY**

2

Mead needs to be
**aged at least 6-12
months** before it's
drinkable



Wort - VS - Must

For the beer brewers

Beer Wort

Nutrients: ↑

Gravity: ↓

pH: OK

Sugar: Maltose

Flavor/Aroma Properties: strong
(relative)

Mead Must

Nutrients: ↓

Gravity: ↑

pH: Low buffering

Sugar: Fructose/Glucose

Flavor/Aroma Properties: delicate
(relative)



Mastering Traditional Mead



Different Concepts

For brewers
& winemakers

- Attenuation?
- Staggered Nutrient Additions
- Yeast: Can't stop won't stop
 - Eat all the sugars
 - Destroy their environment (alcohol)
 - Stopped artificially with chemicals, temperature, being removed (filtration)



Liquid Gold

Raw Honey

- Retain aromatics
- Never ever heat
- Farmer's Market, Online

Varietals

- Buckwheat (Western vs Eastern)
- Orange Blossom (CA vs FL)
- Tupelo, Meadowfoam
- Dakota/Montana Clover, Mesquite, Avocado, Raspberry, Hawaiian varietals, Leatherwood, Italian Chestnut
- Wildflower



YEAST!

Considerations

- Flavor/aroma!
 - NOT taste like beer or wine
- Alcohol tolerance
- Starting sugar content
- Temperature range
- Nutrient demands
- Potential pressure from other organisms
- Dry vs Sweet mead yeasts



Pitch Rate

**1 million cells / ml /
degree Plato**

Dry

- 1-5g per gal (usually 2-3)
- Generally 3g per gal for SG 1.120+ (28 Brix)

Beer

- Pitch calculator
- 2 packs WL w/ starter for 5 gal



Yeast Rehydration (Dry)

Rehydration Protocol

- Go-Ferm: 1.25x grams of yeast used
- Dilute Go-Ferm into measured amount of hot water
 - When solution reaches 104°F, sprinkle dry yeast and allow to sit for 15-20 minutes
- Scott Labs, Tosna 3.0





PROTOCOL

Easy Steps for Optimal Yeast Rehydration



Step 1

Add Go-Ferm or Go-Ferm Protect Evolution to warm water.



Step 2

Cool, add yeast, stir, let stand for 20 minutes, stir.



Wait 20 minutes

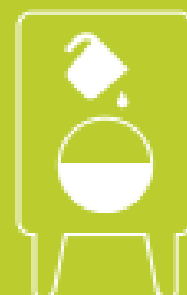


Stir.



Step 3

Atemperate.
Repeat if necessary.



Step 4

Inoculate.

Yeast Needs Nutrients

Low YAN

(Yeast Assimilable Nitrogen)

- Nitrogen needs specific to yeast strain & SG
- 150 – 300 ppm YAN
- Scott Labs data for wine yeast, WL to come...

Sugar	Yeast Strain Nitrogen Requirements		
Brix	Low	Medium	High
20	150	180	250
22	165	200	275
24	180	220	300
26	195	240	325
28	210	260	350
30	225	280	375



Yeast Needs Nutrients

Low YAN

(Yeast Assimilable Nitrogen)

- **Type of nitrogen source:** Inorganic vs Organic
 - DAP, Fermaid K, Fermaid O...
- **Timing:** SNA (Staggered Nutrient Additions)
- **Different approaches:** Fermaid K & DAP, Fermaid O & DAP, All Fermaid K, All Fermaid O
- White Labs Experiment
- YAN from fruit!
- **Resources:** TOSNA 3.0, Scott Labs, MeadMakr calculator



Yeast Needs Nutrients

Staggered Nutrient Additions

My process

- Target YAN based on TOSNA
- All Fermaid O
- Add:
 - $\frac{1}{4}$ at **pitch**
 - $\frac{1}{4}$ at **24 hours**
 - $\frac{1}{4}$ at **48 hours**
 - final $\frac{1}{4}$ at $\frac{1}{3}$ **sugar break**
- Based on using Scott Labs yeast rehydration protocols





#HOMEBREWCON



Managing Fermentation

pH Drop

- pH < 3.0 can start to cause problems
- Adding potassium bicarbonate

To degas or not to degas?

- Aerate must, release CO₂,
- Every time adding nutrients
- No O₂ after 1/3 sugar break

Temperature

- Low end of yeast tolerance
- Fusels in first 24 - 48 hrs
- Esters in first 72 hrs



Managing Fermentation

Equipment

- Bucket
- Carboy with airlock
- Hydrometer
- Mixing wand
- Racking Cane



Managing Fermentation

Basic Notes

- Gravity
- pH
- Amounts of EVERYTHING

Resources

- “Modern Mead Makers”
Facebook Group (files section)
- GotMead Newbie Guide



Stablizing

TBD:

- Yeast: Can't stop won't stop
- Which isn't permanent?
 - Eat all the sugars
 - Destroy their environment
 - Stopped, then chemicals
 - Stopped with temperature
 - Removed from environment



Stablizing

Options

- Ferment Dry
- Ferment Dry + Sulfites/Sorbate
- Cold Crash + Sulfites/Sorbate
- Hit Alcohol Tolerance
- Filtration
- Pasteurize
- Cork & Pray

Resources

- [Reddit Mead Stabilization](#)



Fine-Tuning

Sweetness

- Backsweetening
- Honey yields
~35 gravity points per lb per gal
- Blending
- Effect of adding fruit
- Other options?



Fine-Tuning

Acid

- **Tartaric:** grapes
- **Malic:** apples
- **Citric:** citrus
- Fruit (citrus, tart cherries, raspberries, black currants, kumquats, plums, etc.)



Fine-Tuning

Tannins

- Oak, fruit, nuts
- **Fermentation tannins:** FT Blanc Soft
- **Finishing tannins:** Royal, Radiance
- **Oak:** French, Hungarian, American
- **Oak:** toast levels
- 2-3 ounces of oak cubes per 5 gal, 8-12 weeks



Fine-Tuning

Carbonation

- ≠ Session Meads!
- Carbonic Acid
- Bottle Condition vs Force Carb
- Depends on recipe



Fine-Tuning

Body

- Yeast
- Residual Sugar
- Tannins
- Carbonation
- Lees aging
- Glycerol/glycerine



Aging

Considerations

- Oxidation
- Sulfite levels
 - Vinmetrica Analyzer
- Temperature



Clarifying

Fining Agents

- Super Klear (+-)
- Hot mix Sparkolloid (+)
- Bentonite (-)
- Tannins (-)

Time

- Racking (be careful)
- Traditionals



Melomels

Fruit

- Primary vs Secondary
- Carvin's Mazer Cup preso

Primary

- Whole: 4-12 lbs per gallon, or No Water
- Freeze?
- Juice, puree, juice concentrate
- Punching down the cap
- Advantages & Disadvantages
- Concerns

Secondary

- Frozen, fresh, dried, juice, concentrate, puree, extract
- Considerations
- Advantages & Disadvantages

Other

- Seeds & pits
- Varietals: cherries, apples, grapes, etc.



Methlegins

Spice

- Heat or no heat
- Primary or Secondary
- Amounts & Timing
- Direct pitch vs boil vs tincture



Other Considerations

Complimentary or contrasting

- Orange Blossom & Hops
- Buckwheat & Black Currants

Baby steps

- Balance with honey is key...
different than beer
- Can always add more - not as affected
by O₂
- Add in small amounts and adjust
accordingly



Modern Mead Making

Mead Geek Society



THANK YOU!

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Related Resources

Find articles, recipes, recordings, and resources—including *Zymurgy* magazine—on [HomebrewersAssociation.org](https://homebrewersassociation.org).

- [60+ Mead Recipes](#)
- [Boiling & Seething: Recreating Two Medieval Mead Recipes](#)

