Introduction to
Mead & Wine Brewing Additives

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Just like in cooking, when brewing wine and mead, several additives are necessary to make the brew turn out right.

These additives perform several functions:

- Yeast turns your ingredients into alcohol
- Nutrients help feed the yeast
- Acids help the yeast work
- Extracts and oak chips help provide flavoring

UnderstandSing these additives and the chemistry behind them is important for your success as a brewer! Here we'll discuss the major additives you'll be dealing with, their uses and their effects on your brew.

Unless otherwise noted, the following additives are added with the yeast as you're moving the *must* into the fermentation bottle.

First a few definitions:

- Must – The liquid to be fermented, consisting of water / sugar / honey / fruit juice / etc.
- Fermentation – The process of yeast turning sugar into alcohol.

Yeasts

Yeast is a living organism; it eats sugar and turns it into alcohol. The yeast has needs and requirements, if you meet those, it will happily perform its miracle for you!

Yeast performs best between 70º and 90º Fahrenheit. Be sure the *must* has cooled down to below 95º before adding the yeast. Store the fermentation bottle in a cool environment no lower than 65º and no higher than 95º. Extreme temperatures can kill the yeast.

For best efficiency, store your yeast packets between 70º to 90º, you should use them within 6 to 12 months of purchase.

You can brew most wines and meads with one of the following five yeasts. As you progress in brewing, you'll experiment with other, more specialized yeasts, but you'll find yourself returning to these basic five over and over again. I actually use Montrachet for 70% of my wines and meads.

Montrachet – Works very well for almost any wine/mead. It is very forgiving of errors. It can produce a beverage with an alcohol level between 8% and 20%. It is good for meads, complex whites, and full reds.

Pasteur Champagne – While this won't produce an alcohol level higher than 5% to 10%, it is good for almost any white. It provides a light fruity tang.

Premier Cuvee –Works well in wine blends (such as brewing with Cabernet and Syrah grapes). It is best at producing very full bodied red wines. It will consume a high percentage of the brew's sugars and produce a dry wine. To produce a less dry wine, you'll need to add extra sugar to the *must* before adding the yeast.

Pasteur Red –Works best for heavy reds and Cabernets. It adds several levels of complexity to the flavor of the finished brew.

Cote des Blancs – Works well for fruit wines, sweet reds, and sweet whites. It makes the flavor of the fruit more apparent in the finished brew.

Introduction to
Mead & Wine Brewing Additives

Acids

The acids keep the yeast from being lazy; they prompt the yeast to convert more sugar into alcohol. They also balance out the chemistry of your brew, helping to create a balanced environment for the yeast to work in.

The acids can also impart flavor to the drink depending on the amounts used and the balance of the *must*.

You can use pH strips to determine the amount of acid or base. Or you can try a taste test, if it seems acidic to you, the yeast will probably feel the same way!

These acids can be used in combination, as an example: often if you're using malic acid, you probably want to use citric acid as well. Use each acid as needed for your particular *must* chemistry.

Malic Acid – If the *must* have a heavy acidic base, use malic acid to balance it. It works to soften other acid bases, but it can also add a tartness to the drink.

Rule of thumb: Use 1 teaspoon per 5 gallons, moderate as needed to balance the chemistry.

Citric Acid – If your *must* has little acidity, use this to give it more of an acid base.

Rule of thumb: Use 2 teaspoons per 5 gallons, moderate as needed to balance the chemistry.

Tartaric Acid – If you've had a problem with undesirable bacteria in previous brews, use tartaric acid with your malic acid. Tartaric acid lowers the pH of the fermenting *must* to a level where many undesirable bacteria cannot live, and acts as a preservative after fermentation.

Tartaric acid can also be added after fermentation has completed, to help preserve and prevent bacteria problems in the bottled brew.

Rule of thumb: Use 2 teaspoons per 5 gallons, moderate as needed to balance the chemistry.

Yeast Nutrient (Superfood-Plus) – This helps to invigorate the yeast and helps the yeast works faster and longer. You'll want to use this in almost every wine or mead you brew.

Rule of thumb: Use 1 1/2 tablespoons per 5 gallons.

Flavorings: Extracts

Many brewing shops sell liquid extracts for quick and easy brewing. These extracts are different from the store bought extracts made for cooking. The brewing variety has higher alcohol content and a stronger flavor.

Extracts are often used to make sodas or liqueurs. They are usually impractical for flavoring a complete batch of wine or mead because of the amount of extract needed to flavor that quantity of beverage. But for complex mixtures (such as root beer) extracts are often a good compromise.

Brews made from the natural ingredients have a softer, more vibrant, complex, and natural flavor than those made from extracts. However, extracts can be helpful in boosting a brew's flavor or adding a hint of another flavor.

If you are entering your brew in competition, the judges will probably deduct point for any use of extracts. And they will probably be able to taste the use of extracts even if you haven't mentioned it in your documentation.

Introduction to
Mead & Wine Brewing Additives

Flavorings: Oak Chips

Oak chips add that "aged in the barrel" taste to your finished brew. Not necessary for all your brews, but a nice finishing touch for some brews. Play with it in sample batches to see how it fits with your brewing style.

Oak chips are added near the end of the fermenting process.

Boil the chips in water for 30 seconds then drain the chips and add them to your wine. (The boiling opens the pores in the chips and helps release the flavor.)

Base line usage is 2 oz. of oak chips soaking in 5 gallons of fermenting wine or mead for 2 weeks to 2 months. Taste the brew at least once a week after the first 2 weeks to determine when to pull the chips.

American Oak Chips – Provide a nice simple oak flavor. It is a quiet, subtle flavor.

French Oak Chips – Provide a more complex oak flavor. It is a more noticeable flavor, more complex, can add layers of flavor to your wine.

Other Working Agents

Pectic Enzyme – All fruit has some amount of pectin, some more than others. Pectin will cause a haze that will not clear. A large amount of uncorrected pectin will turn your brew from a liquid to jelly.

If you are unsure about the pectin level, or if there is a major amount of pectin in the fruit, you need to use pectic enzyme to break down the pectin and prevent problems. Some examples of high pectin fruits: Apples, apricots, peaches, plums, most berries (except strawberries), quinces, citrus fruit skins.

If in doubt, add it! There are no problems if you add pectic enzyme when it's not needed, but there are problems if you don't add it when you should have. Additionally adding it after fermentation has started will have little or no result.

Use 1/2 teaspoons per gallon. If you've loaded your *must* up with a ton of pectin (such as boiling down apple juice, or using a ton of citrus peels), then you'll need to add more pectic enzyme.

Grape Tannin – It lengthens the life of your bottled brew, adding about 2.5 years to the shelf life.

It also helps clarify the brew by dropping floating proteins and solid ingredients to the bottom for removal during bottling.

Rule of thumb: Use 1/4 teaspoon per 5 gallons. You can add more but, depending on the drink, more tannin might produce a tarter, harsher, and/or dryer taste in the finished brew.

Introduction to
Mead & Wine Brewing Additives

Clarifying Agents

Clarifying agents are added after fermentation has stopped, they help clear the floating sediment out of your brew (known as “precipitation of solids") giving a clearer, nicer result.

There are a number of additives you can use to cause the wine or mead to clarify, some of which are: egg shells or whites, milk, gelatin, isinglass, bentonite clay, and Irish moss.

The clarifying agents will affect the taste of the brew: egg shells add a chalky flavor, egg whites add a greasy flavor, milk adds a creamy flavor, gelatin give almost a Jello-like flavor, isinglass gives a kind of a beefy flavor, bentonite clay adds a clay flavor, and Irish moss adds an earthy flavor. The flavors are not very pronounced, but they do affect the finished taste of your brew. If you’re entering your brew in a competition, the judges will notice the taste and probably deduct points from your overall score because of it.

Generally, once you’ve used a clarifying agent to precipitate the solids, further application of any of that or any other clarifying agents won’t produce much more of a result.

Because when you’re clarifying by aging (letting the solids settle out on their own) the large and small clumps of solids gravitate together and the combined weight helps them to drop to the bottom. But when you use a clarifying agent, it drops the large solids, leaving the small solids floating with nothing to help them drop. So once you’re used a clarifying agent, you’ve locked your clarity level in, it’s not going to get much better short of applying centrifugal force.

My recommendation is to bypass the clarifying agents, and let the solids settle out on their own. This will add time to your brewing process, but my experience is that clarifying via aging will produce at least equal results of the clarifying agents and 50% of the time it produces better results.

Camden tablets / Sulfides / Sulfates / other Sulfur based additives – Many folks are allergic to Sulfur based additives. THESE ARE NOT NECESSARY for home brewing.

They are often used in a mix to **clean your equipment**. If you wish to use them, be sure to wash thoroughly in hot water afterwards. Or don’t use the sulfur based additive. Instead wash with 1 tablespoon of bleach to 1 gallon of water, let it soak for 20 minutes, then rinse thoroughly. Or sanitize your equipment in the dishwasher in a full hot wash and rinse cycle; don’t use detergent or finisher, just wash with plain water.

They are also used to **stop fermentation**. Instead, let the brew finish naturally, or cold shock the brew to kill the yeast. Cold shock the brew by drawing the liquid out into gallon bottles (or a size that will fit) and putting them in the freezer. Watch the bottles carefully, DON’T let them FREEZE. Pull them out when the liquid is slushy. Allow the liquid to warm to room temperature and rack it to remove any solids that have formed. Set it aside to clarify and bottle as normal.

Additionally, they are used to **prevent bad bacteria** from causing problems. Instead use tartaric acid before fermenting or as you bottle the finished brew. (See the Acids section for more info.)

If you feel you must use sulfur products in your brew, please make sure to label you bottles accordingly and warn your consumers.

Introduction to
Mead & Wine Brewing Additives

Resources

This ends our introduction to wine and mead additives. It's an important and interesting aspect of brewing that will make you happier with your finished brews.

- If you have questions or problems, you can contact me at

ChiefTimotheus@gmail.com

- The **Caid Brewers Facebook group** is a bunch of brewers discussing their brews, brewing problems, and whatever brewing related items meet their fancy. The group is centered in Southern California and is open to all interested brewers.

https://www.facebook.com/groups/169670283212489

- **The Right Noble Brewers' Guild of Caid** is centered in Southern California and is related to a historical recreation group (the Society for Creative Anachronism). All are welcome to join. Information about the group can be found at:

brewers.sca-caid.org/