

# **FINING of WINE!**

**Fining \fine-ing\ vb : to make free from impurities.**

**(Always, always, always do small lab trials, before adding to all of your wine)**

## **A TYPICAL WHITE WINE REGIMEN:**

- **Post Fermentation & M.L.F.** - Acidulate with **Tartaric Acid**, to taste.
  - Fine with **Gelatin/Kiesolsol** to reduce excessive tannins due to skin contact.
- **Winter - Cold stabilize** to reduce excess/unstable acidity.
- **Spring** - Fine tune mouthfeel with **Casein and/or Isinglass**.
  - **Heat stabilize** with **Bentonite/Sparkolloid**.
- **Summer** - Filter & Bottle. Enjoy!

## **A TYPICAL RED WINE REGIMEN:**

- **Post Fermentation & M.L.F.** - Acidulate with **Tartaric Acid**, to taste.
  - *Cautiously*, fine with **Gelatin** to reduce excessive, bitter tannins.
- **Winter - Cold stabilize** to reduce excess/unstable acidity.
- **Spring** - Fine tune astringency/mouthfeel with **Casein and/or Egg Whites**.
- **Summer** - Filter & Bottle. Enjoy!

**One assumes that you are monitoring SO<sub>2</sub>, bringing it to The recommended levels, *after* the end of M.L.F., and *maintaining* through fining, filtering and then bottling.**

**BENTONITE:** **Aluminum Silicate.** While it will remove some haze, its prime use is to remove unseen protein fractions that are unstable at wine pH. **Used to achieve heat stability in all white wines.** Bentonite is strongly negative charged, attracting and settling out the positive charged protein fractions. Since, wine varieties differ from each other and are different each year, **Do Heat Stability Trials.** Follow with Sparkolloid. **Average Dose:** 1/2 tsp./gallon = 3 lbs./1000 gallons

**SPARKOLLOID:** This is a very useful haze removing fining agent. It is a long-chained polysaccharide in an agar base. Possessing a slight positive charge, it forms a microscopic spiderweb, **trapping fine colloidal and negative charged particles as it settles. Also will collapse a bentonite cloud, compacting the lees.** It is simmered in water for 20 minutes to dissolve the agar and is added warm. **Average Dose:** 1 tsp./gal.

**KIESOLSOL:** **Soluble Silica Gel.** Has a negative charge that **attracts positive charged proteins and tannin-protein complexes.** This coagulative process is rapid, uses little silica, and results in compact lees. More common use is to remove excess tannins with gelatin, followed by kiesolsol to remove excess gelatin. The resultant coagulant then fines the wine. **Average Dose:** 1/2-1 ml. kiesolsol/gallon, with 1/4 - 1/2 lb. gelatin/1000 gallons (1/4 - 1/2 tsp. gelatin/5 gallon ).

**POLYCLAR/PVPP:** Microscopic, insoluble nylon that **binds with some monomeric, bitter phenolic compounds**. Can remove color precursors, preventing enzymatic browning/pinking in whites. Not as effective after the fact. Also, **may clean-up an imperfect wine's odor/flavor. Can remove anthocyanin (red) color**, as in too-red blush wine. **Not at all useful for reduction of astringency**, only the monomeric tannic bitterness. **Average Dose:** 1/2 - 6 lbs./1000 gallons (2 tsp.-8 tbl./5 gallons).

**GELATIN:** A protein that attracts tannins, reducing bitterness and astringency.

**White wines** that have a **slightly harsh or bitter flavor** can be smoothed out with a very small amount of gelatin, **followed by Kiesolsol**. Hazy whites that have resisted other clarification agents like bentonite will fall crystal clear with gelatin. Tannin was formerly used to settle gelatin, but kiesolsol is preferable. Gelatin will not coagulate and settle out in whites without kiesolsol. **Average Dose:** 1/8-1/4 lbs. gelatin/1000 gallons (1/8 - 1/4 tsp./5 gallons), followed by 1/2-1 ml./gallon kiesolsol.

**In Red Wines**, use gelatin for clarity at levels of 1/4-1/2 lb./1000 gals. **For reduction of bitterness in young reds**, use 1/2-2 lbs./1000 gallons. Being rather non-specific, **gelatin is often too harsh a treatment for older reds** coming out of barrel, so casein or egg whites may be preferred. **Average Dose:** To prepare, make a 1% solution (1 gram/25 ml. cold water). Allow to expand. Add hot water to 100 mls. to dissolve.

**CASEIN:** Potassium Caseinate can **improve both flavor and color in slightly oxidized whites**. It is more gentle on reds when used close to bottling to **reduce astringency**. Can also **reduce oakiness and slight microbial off-odors**. Dissolves in water, though not easily. Mix 1 volume in 9 volumes water for a few hours. Dilute this paste to be a 1-2% solution. Stir until dissolved. Do not heat. Store in freezer. **Average Dose:** 1/8-1/2 lb./1000 gallons ( 6 grams/5 gallons ). Not over 1 lb/1000 gallons or may impart a milky flavor.

**SKIM MILK:** A home source of casein. Use powdered skim milk, not whole milk.

Caseins flocculate quickly with the wine's acidity, tending to clump before they can react with the tannins. Best to inject in a fine stream with a syringe or baster. Or, add while racking. **Average Dose:** 1/2 pint skimmed milk/5 gallons. Or, 10 grams powdered skim milk/5 gallons in a bit of water

**EGG WHITES:** The albumin attracts older, long-chained tannins, **slightly Reducing astringency and improving mouthfeel in red wines only**. Salt is added to solubilize the globulin, clarifying the mixture. It clumps rapidly, so follow the addition advice for skim milk. **Average Dose:** 1/2 egg/5 gallons = 5 - 6 eggs/60 gallon barrel, which is aggressive. Some use a "pinch" of salt. Or, 2 times the volume of salted water. Salted water = 10 grams salt/1 liter water. Just gently whisk the mixture. Do not beat to a fluff. For dried egg white, use 2.5 - 4 grams/5 gallons with a bit of warm water. I use egg whites, a pinch of salt, a whisk and, of course, a copper bowl. Add while stirring the barrel, avoiding aeration.

**ISINGLASS:** Collagen from the air bladder of sturgeon, “**Isinglas is to whites what egg white is to reds**”. It reacts with older, long-chained tannins to gently improve mouthfeel. Older forms of the stuff were very hard to dissolve and smelled strongly of fish. I have an English form from James Vicker called Drifine that is easy to prepare and is much less smelly. **Average Dose:** 10-30 miligrams/liter.

**These fining agents are very useful tools to achieve brilliant clarity as well as a more pleasant and balanced mouthfeel.**

**Always test first to determine the desired effectiveness and the correct quantity to use.**

Too much added can take too much out of the wine and may leave excess finings in the wine.

It's important to understand phenolic extraction and development as the wine ages.

Phenols include tannins and color pigments (anthocyanins). They come mostly from grape skins, as well as seeds, stems and barrel oak. Young, shorter tannins may taste coarse and bitter.

As wine ages, phenols link together, becoming “poly” phenols (proanthocyanins), which have a more pleasant dryness/astringency.

Also, remember “co-pigmentation”, the equilibrium existing between tannins and color pigments.

Removal of tannins with protein fining agents can disrupt this equilibrium.

The result can often be loss of color stability.

It is highly recommended to fine for young tannic *bitterness* early in the game, before your wine is over 4 months old.

Fine for excess *astringency* a few months prior to bottling.

**Use gelatin to aggressively remove very excessive *young, bitter* tannins, only before wine is 4 months old.**

**Use casein for moderate tannin reduction, as well as some excess oakiness, 2 – 3 months prior to bottling.**

**Use isinglass (whites) or egg whites (reds) to improve mouthfeel/astringency, 2 – 3 months prior to bottling.**