

Test for Acid (White Juice)

The proper acid level for a finished wine varies with personal taste, wine type, grape used, climactic conditions where the grapes are grown, fermentation, and a host of others. Too little acid in the final wine produces a flat and insipid product that leaves an unclean or soapy, flat taste in the mouth. Too high acid produces an excessively tart wine. Residual sugar tends to mask acidity. Thus, even with these few generalizations, it becomes obvious that knowledge of the juice's acidity is essential to produce a good wine. This author firmly believes that a capital investment of about \$15 for an acid test kit can make a dramatic improvement in any amateur's wine.

Without detailing all the reasons for such results, we can say that the acidity of California grapes usually ranges from a low of .4 (calculated as tartaric acid) to an occasional 1.0. On the other hand, northeastern grapes often range from .7 to nearly 2.0. Within these ranges, varietal differences exist. If nature is kind, jubilation among winemakers is at its peak when a sugar of 20-22% with an acid that ranges from about .7 to .8 is measured. With these brief remarks, let us look at the steps necessary to measure total acids in white juice.

In its simplest terms, titration for total acids is simply the addition of a known alkali or base to a specific quantity of acid until the resulting liquid is neither acid nor alkaline. Kits to perform this measurement are sold by most winemaking supply shops and include:

- One 25 ml or 50 ml burette or plastic syringe
- One 5 ml pipette
- Sodium hydroxide 0.1 Normal
- Phenolphthalein solution

In addition, I like to use several glass, heat resisting Erlenmeyer flasks of 125 ml capacity and several 1 oz plastic or glass measuring jars in which to collect 6 to 8 ml of juice or wine. Because it is best to boil the juice and water to eliminate any dissolved gases (such as CO₂) one should have a small source of heat. An old electric heater used for a glass coffee maker is excellent. The steps for titration of white wine are as follows:

1. Fill the burette with sodium hydroxide.
2. Pour into the flask about 75 ml of distilled water and 5 ml of the juice.
3. Bring the water-juice mixture to a boil.
4. Add 4 or 5 drops of phenolphthalein indicator to the mixture.
5. Record the level of the sodium hydroxide in the burette and slowly add the sodium hydroxide to the flask. As you begin, it is possible to release several ml of the sodium hydroxide, but near the end a few drops at a time will suffice.
6. Swirl the mixture in the flask. When the faint pink end point holds for 30 seconds, record the sodium hydroxide position from the burette.
7. Subtract the first from the last burette reading. This is the exact volume of solution of sodium hydroxide to neutralize the acidity in the juice.
8. Multiply the results by 0.15 for the total acid. The entire process takes but a few minutes and will return great dividends. Treatment of juice that is far from 0.8-0.9 will be covered later. Most acid test kits available at winemaking shops have complete instructions and equipment included.

---E. S. Phillips – *The Complete Handbook of Winemaking*