Refractometer How To

Background

Many online brewers know that I rarely use a hydrometer to measure my wort or must SG. Instead, I use a refractometer for virtually every sample I take.

Brix measurements taken before pitching yeast are easily converted to SG by a variety of simple formulae.

However once fermentation begins, the presence of alcohol (EtOH) in the sample, requires any observed Brix reading to be corrected. My Mead Calculator Spreadsheet includes the tools to perform both conversions – readings with, and without, the presence of EtOH. However, **it is critical** that a relatively accurate OG be taken **before** pitching your yeast. Without it, you will not be able to correct your refractometer readings.

Refractometer Sample Process

1) Sanitize a 12cc syringe & the sample extension tubing (3/16"dia. rigid plastic x 8")
2) Remove as much moisture as possible - operate the syringe plunger to blow-out any excess moisture
3) Draw a 3 ml sample
4) Discharge the sample into a filter paper lined funnel
5) Allow the sample to filter through to a collection jar
6) Using the 0.2 ml pipette, draw a small sample - use pipette once and then discard.
7) Deposit 2 drops on the prism and read the result.
8) Read & record the result from the scale
9) Clean & dry-off the prism

Refractometer Error Sources

- - Refractometer off-calibration (check with distilled water)
- - Moisture on prism
- - Prism residue (insufficiently cleaned)
- - Entrained moisture in refractometer sample
- - Entrained gas in hydrometer sample
- - Bad, or damaged, refractometer
- - Refractometer stored in a moisture laden environment
- - Uncorrected sample reading containing EtOH
- - Using a refractometer designed to measure something other than sucrose (there are several types of refractometers, salinity, urine, aquarium, etc.)

Equipment Sources

- NIS Sales (eBay Seller): RHB-32ATC Portable Brix Refractometer ($35-$50)
- Cynmar
  - 0.2 ml Pipettes (150-24544), $5.50
  - Filter Paper (111-21012), 9 cm, Medium, Qualitative, $2.40
  - Funnel (150-23417), 55 ml, 50¢