



Analyzing Your Favorite Beers

A Brewometer User Example

By Ben and Ty Newell

Analysis of your favorite beer is one of the ways the Brewometer can be used. This is a straightforward process that will allow you to determine the wort's original specific gravity (OG) and sugar concentration. Basically, a sample is placed in the Brewometer. Because sugar and alcohol both affect the Brewometer reading, an additional piece of information is needed to determine the beginning wort condition. This could be a hydrometer reading (FG), alcohol content information (ABV or ABW), or calories per 12 ounce glass.

Four different beers described below illustrate how one can determine a beer's origin. We'll start with Miller Genuine Draft as an example. Although there are most likely not a great number of home brewers who want to emulate MGD, it is a nice example of a fairly light beer with both alcohol and calorie data listed on the bottle. Rather than adding a sample directly to the Brewometer, pour a small sample (a tablespoon or so) into a small glass or bowl to allow it to degas. Shaking or stirring will help the process. The sample should be ready after a couple of minutes.

The Brewometer software should first be "zeroed" by placing a water sample on the sensor. The Brewometer is zeroed in the Wort mode screen (this is the startup screen). The zeroing function performs a temperature compensation operation. The specific gravity readings that appear are 25C temperature values.

After zeroing, the "Beer" mode button is pressed to switch to beer analysis. We would like to determine the Wort's specific gravity (OG). A "guess" is made for the OG and entered. Generally, guesses should be somewhere in the 1.050 range. In the case of MGD, because the alcohol by volume (ABV) is known, the %ABV reading is checked to see if it is in agreement with the published data. A second guess is then entered in order to get a sense of direction. For example, if the second guess for MGD is 1.055, one will find that the %ABV is in less agreement than the first guess. Therefore, a lower OG should be entered. Assuming a third guess of 1.040 is entered, one will find that the %ABV has swung too far in %ABV. Entering additional guesses between 1.040 and 1.050 will finally result in 1.045 as being the OG that will yield the closest %ABV. The screen print below shows this result.

MGD

Measured FG (hydrometer) = 1.005

Published data: ABV=4.7%, calories = 143

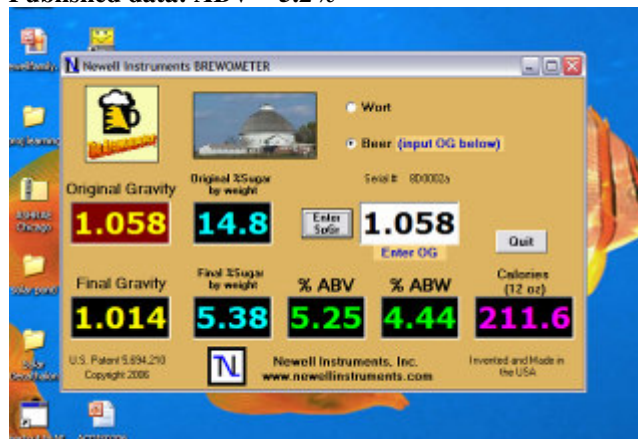


The additional information on the MGD screen shows the estimated caloric value to

be 160 calories for a 12 ounce glass compared to the published value of 143 calories. The calorie agreement is within 10% which is reasonable based on assumptions made for various sugar caloric values built into the software and those actually in the beer. Notice that the FG determined by the Brewometer of 1.006 is in good agreement with a hydrometer reading of 1.005.

A second example is Young's Double Chocolate Stout, a delicious brew to try to emulate. The bottle lists the %ABV at 5.2%. A guess for the OG is entered in the "Beer" mode. Starting with a 1.050 initial OG guess, one will find that additional guesses should be above this value. We generally find that using guess increments of "005" help to find the right OG range. The final result for Young's indicates that an OG of 1.058 with a sugar concentration of 14.8% was the initial wort condition. The screen shot results also indicate that Young's has a caloric estimate of 212 calories and a remaining sugar content of 5.4%. The Brewometer FG reading of 1.014 is in good agreement with a hydrometer reading of 1.013.

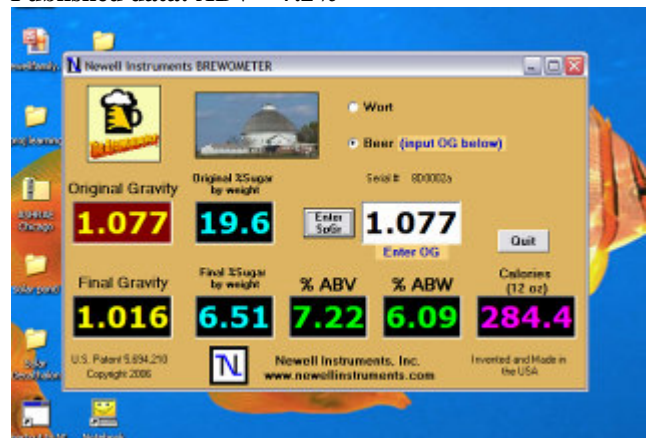
Young's Double Chocolate Stout
Measured FG (hydrometer) = 1.013
Published data: ABV = 5.2%



The next example is a very hearty one. Dogfish Head's Indian Brown Ale is

representative of the upper extreme that one might hope to be able to create at home. Published data from Dogfish Head indicate a %ABV of 7.2%. Using the same guess procedure for the OG until the %ABV is in agreement with the published information, one finds hefty 1.077 OG and original sugar concentration of almost 20%. The final sugar concentration is 6.5% and the estimated caloric value is 284 calories. The predicted FG and a hydrometer measured FG are in agreement at 1.016.

Dogfish Head Indian Brown Ale
Measured FG (hydrometer) = 1.016
Published data: ABV = 7.2%



A final example is Goose Island's popular Honker's Ale. No published data was found for this beer, requiring a hydrometer reading to be used with the Brewometer. A FG of 1.010 was measured with a hydrometer. The Brewometer is put into "Beer" as before, however now values for the OG are guessed until the FG screen reading matches the hydrometer reading. In this case, as shown in the screen shot below, an OG of 1.049 results in a FG reading of 1.010 matching the hydrometer reading. The additional information shows the beginning sugar concentration to be 12.5% with a remaining sugar value of 4.2%. The caloric estimate is a reasonably, guilt free level of 176 calories.

Goose Island Honker's Ale
Measured FG (hydrometer) = 1.010
Published data: none



We hope that these examples give you some ideas on analyzing beers that you would like to learn more about. While this information is important, experienced brewers know there is a world of difference in taste, body, appearance that is buried within the brewmeister's knowledge.



Happy Brewing! Brew for Health!