

# Old World Meets the New

Yeast. Why choose only one? The brewing world has been locked into a single yeast strain mind set since the Danish scientist, Emil Christian Hansen isolated a single yeast culture on November 12, 1883. One beer, one yeast. It's an old mantra. White Labs challenges the notion and offers several yeast blends. The latest, in collaboration with *MoreBeer!*, White Labs has released a blend of WLP001 California Ale Yeast and WLP002 English Ale Yeast. This blend brings the best of both worlds to the fermentation, and added to the catalogue as WLP200 *MoreBeer!* Yeast Blend, available exclusively through *MoreBeer!*.

To show the benefits of yeast blends, trial beers were brewed. In this experimental brew, we chose an ESB as the beer style, with a starting gravity of 14°P. Wort was split into four fermenters, each fermenter was pitched with a different yeast strain or blend. In this experimental brew, we chose an ESB as the beer style and pitched WLP001, WLP002 and WLP200. We monitored the attenuation, flocculation and finished it with a taste panel.

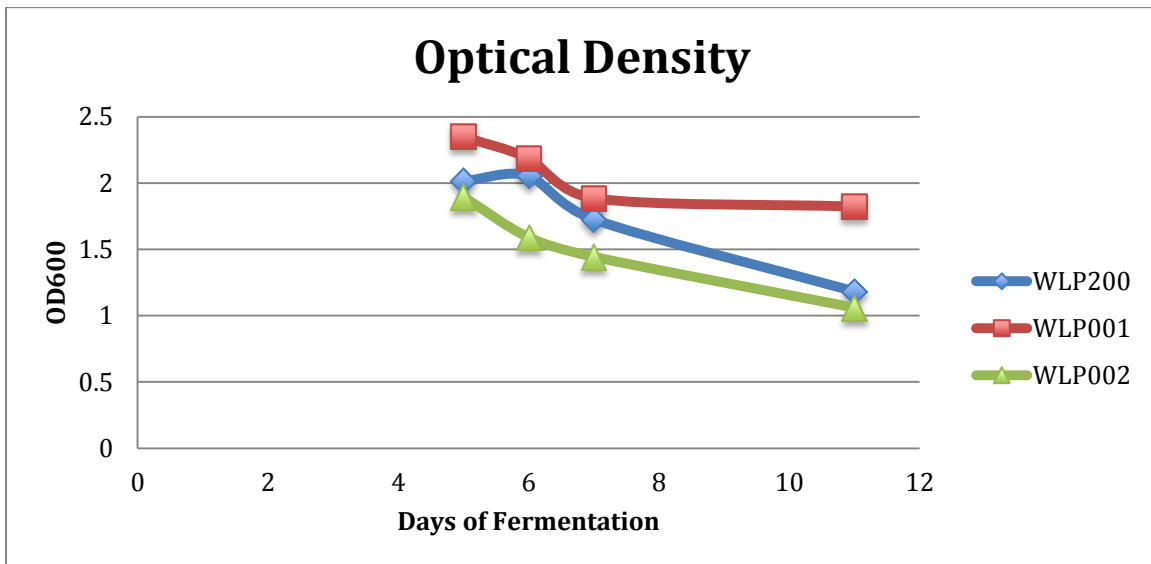
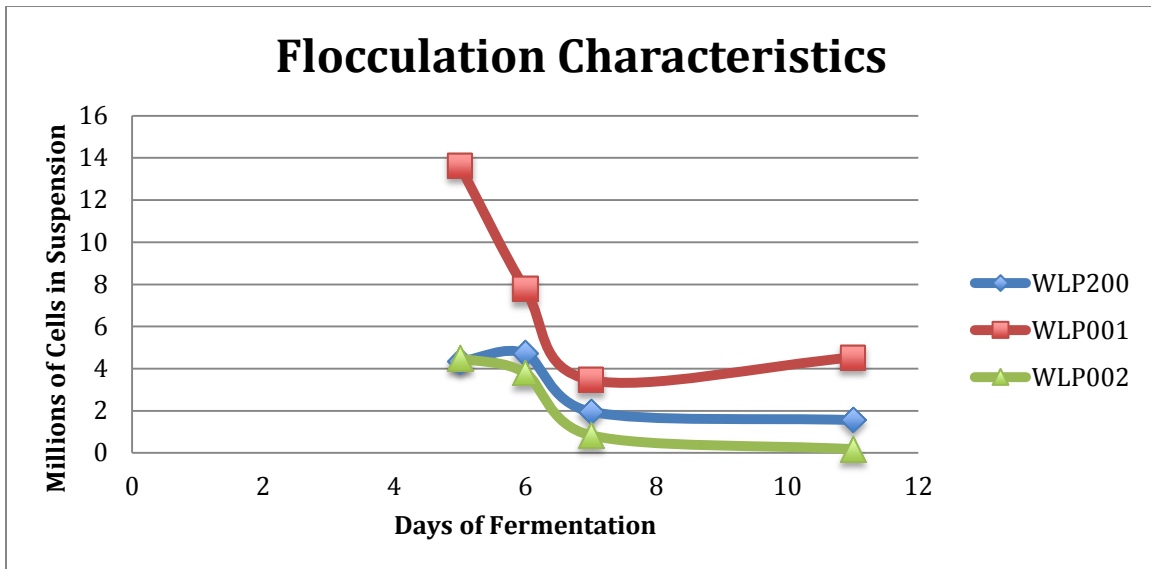
The three different pitches were also monitored with the Helm's Assay, which is a benchtop yeast experiment to measure flocculation characteristics.

## Results:

Brewed By	Joe Kurowski	Joe Kurowski	Joe Kurowski
Style	ESB-Best Bitters	ESB-Best Bitters	ESB-Best Bitters
Beverage Type	Beer	Beer	Beer
Strain	WLP200	WLP001	WLP002
Ferment Temp	65	65	65
Brew Date	2/13/2014	2/13/2014	2/13/2014
Batch #	301.01	301.02	301.03
Brew Method	BS	BS	BS
Alcohol by Vol. (20 °C)	6.26	6.48	6.18
Alcohol by Weight	4.91	5.08	4.83
Apparent Attenuation	84.78	86.67	81.19
Apparent Extract	2.1	1.86	2.65
Bitterness Units	47.5	46	40.5
Calories	181.79	183.45	187.69
Color	35.15	35.32	35.46
Original Extract	13.77	13.92	14.12
pH	4.29	4.3	4.25
Real Degree Attenuation	70.08	71.6	67.29
Real Extract	4.33	4.17	4.86
Specific gravity	1.008	1.007	1.01

**Fig 1:** The data acquired from the alcolyzer shows key specifications of the final beer. Interestingly, attenuation is high for both WLP001 and WLP200. Showing an increase over the English Strain, WLP002. The beer from WLP200 will be drier than the beer with WLP002. The *MoreBeer!* Yeast Blend also shows positive hop characteristics in line with WLP001, with 6 more IBUs than WLP002.

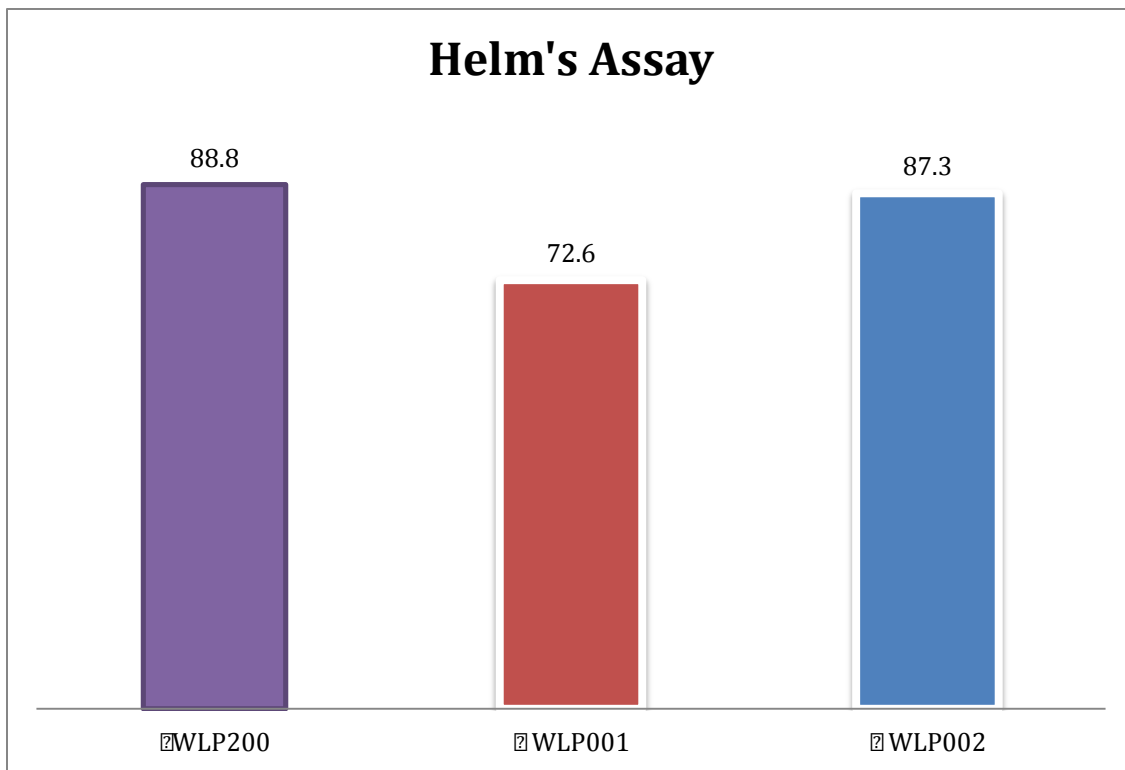
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**Fig2&3:** As terminal gravity approached, two types of measurements were taken to calculate cells in suspension, as a measurement of flocculation. Flocculation is how well cells clump together, and affects several other aspects of the brew i.e attenuation, conditioning times. Figure 2 is a cell count as the beer reaches terminal gravity. Less cells in suspension means the strain is more flocculent. Figure 3 shows cells in suspension by optical density at a certain wavelength,  $\lambda 600$ . Both WLP002 and WLP200 show high flocculation, while WLP001 shows medium flocculation.

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**Figure 4:** The American Society of Brewing Chemists, ASBC, recognizes the Helm's assay (method Yeast-11) to record flocculation. This method was performed on our yeast: WLP001, WLP002 and WLP200. The Yeast blend WLP200 and WLP002 show very similar flocculation characteristics, suggesting coflocculation. The data reinforces our data from the live fermentations. WLP001 shows medium flocculation characteristics. The blend WLP200 and WLP002 are high flocculators based on the assay.

## **Discussion:**

Yeast blends can be made to have the desired attributes of individual strains. In our study we found WLP200 shows character from WLP001 and WLP002. This yeast blend attenuates like WLP001 and flocculates like WLP002. The blend also maintains the renowned hop positive characteristics of WLP001. The taste panel also showed the ester profile for WLP200 was an intermediate between WLP001 and WLP002.

With strain selection one can manipulate the fermentation to produce effects desired in the beer. Esters, flocculation and attenuation are variables directly related to the strains you choose to blend. With careful consideration, yeast strains can be blended for their desired interaction with each other. This is a powerful addition to any brewer's arsenal. Cheers!