

Old World Meets the New

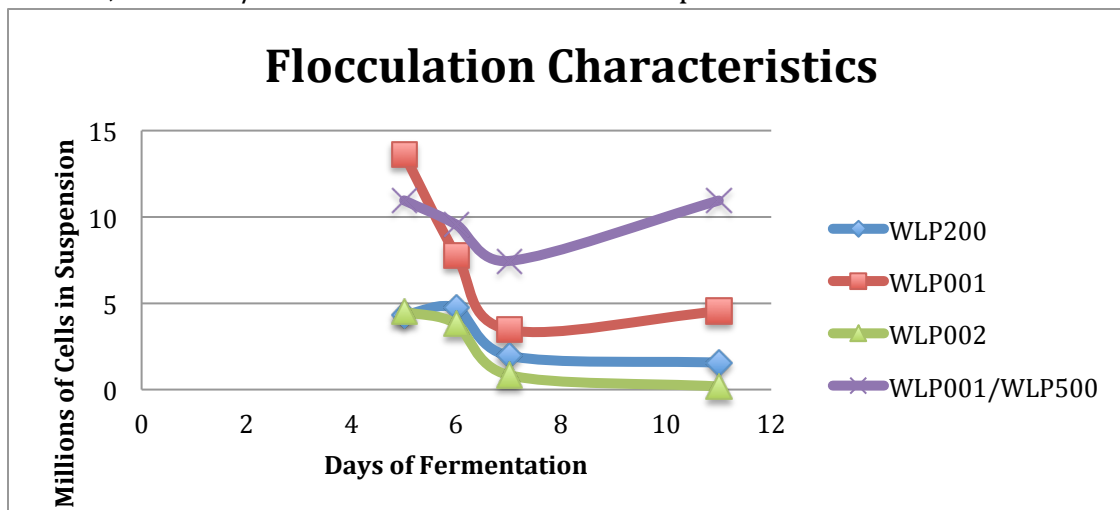
Yeast. Why choose only one? The brewing world has been locked into a singular yeast strain mind set since the Danish scientist Christian Emil Hansen isolated a single yeast culture in 1888. One beer, one yeast. It's an old mantra. White Labs challenges the notion and offers several yeast blends. The 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.

Wort was split into four fermenters, each fermenter was pitched with a different yeast strain or strains. In this experimental brew, we chose an ESB as the beer style and pitched WLP001, WLP002, WLP200 and WLP001/WLP500. We monitored the attenuation, flocculation and finished it with a taste panel.

Results:

Brewed By	Joe Kurowski	Joe Kurowski	Joe Kurowski	Joe Kurowski
Style	ESB-Best Bitters	ESB-Best Bitters	ESB-Best Bitters	ESB-Best Bitters
Beverage Type	Beer	Beer	Beer	Beer
Strain	WLP200	WLP001	WLP002	BLEND
Ferment Temp	65	65	65	65
Brew Date	2/13/2014	2/13/2014	2/13/2014	2/13/2014
Batch #	301.01	301.02	301.03	301.04
Brew Method	BS	BS	BS	BS
Alcohol by Vol. (20 °C)	6.26	6.48	6.18	6.52
Alcohol by Weight	4.91	5.08	4.83	5.12
Apparent Attenuation	84.78	86.67	81.19	86.23
Apparent Extract	2.1	1.86	2.65	1.94
Bitterness Units	47.5	46	40.5	40.5
Calories	181.79	183.45	187.69	185.72
Color	35.15	35.32	35.46	31.39
Original Extract	13.77	13.92	14.12	14.07
pH	4.29	4.3	4.25	4.39
Real Degree Attenuation	70.08	71.6	67.29	71.27
Real Extract	4.33	4.17	4.86	4.26
Specific gravity	1.008	1.007	1.01	1.008

Fig 1: The data acquired from the alcolyzer shows key specifications of the final beer. Interestingly, attenuation is the high for both WLP001 and WLP200. Showing an increase over the English Strain, WLP200. 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. The other blend, WLP001/WLP500 didn't show the same pattern.



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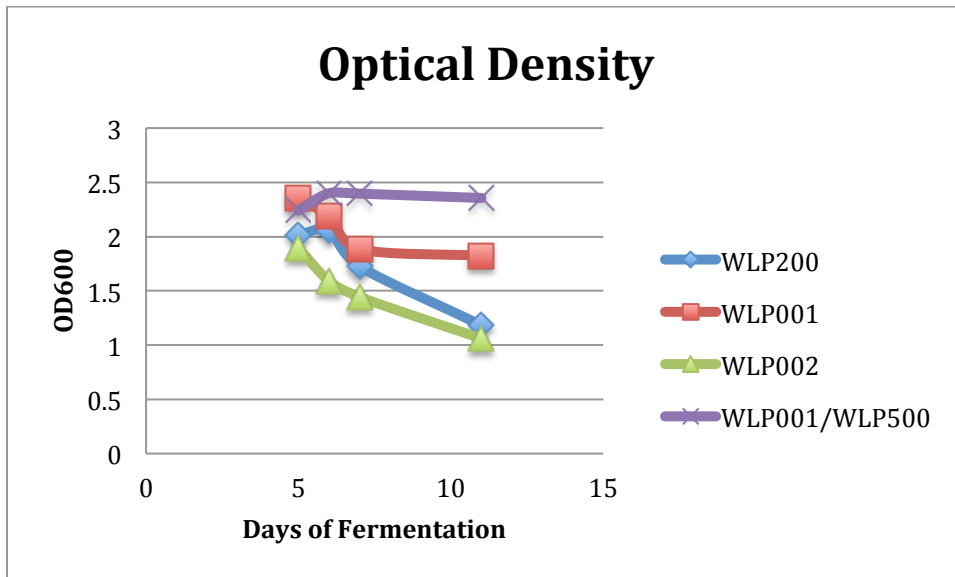


Fig2&3: Two types of measurements were taken to calculate cells in suspension, as a measurement of flocculation. Flocculation is how well cells clump together, which helps the appearance of the beer. Figure 2 is a cell count as the beer reaches terminal gravity. Less cells in suspension means the strain 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 and WLP001/WLP500 shows low flocculation characteristics.

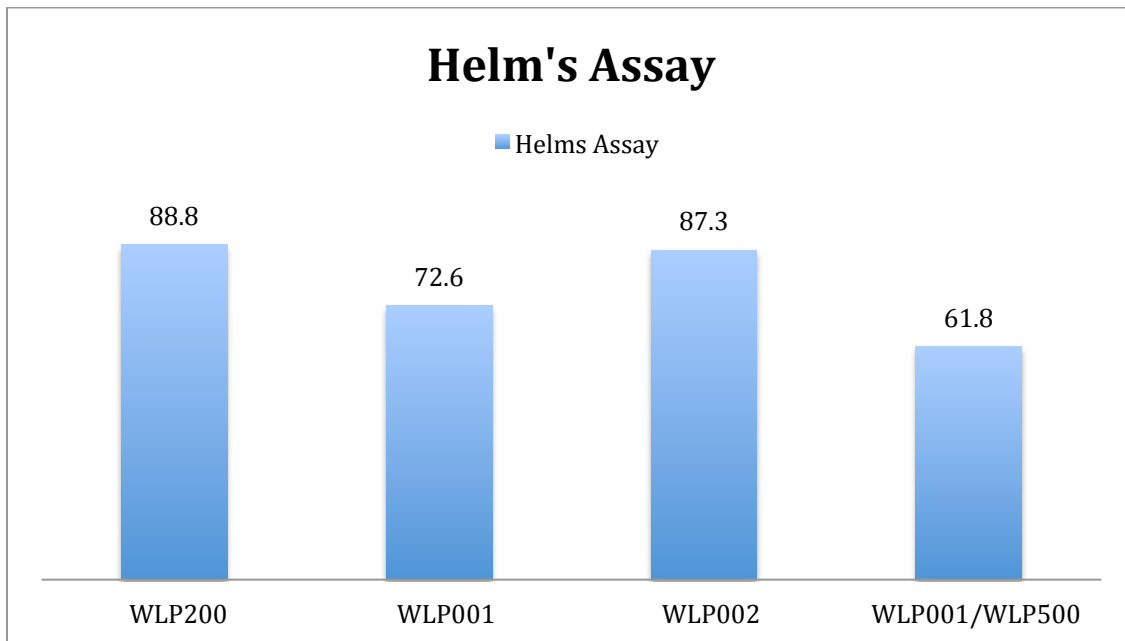


Figure 4: The American Society of Brewing Chemists, ASBC, recognizes the Helm's assay to record flocculation. Performed on our yeast the Yeast blend WLP200 and WLP002 show very similar flocculation characteristics, suggesting coflocculation.

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The data reinforces our data from the live fermentations. The blend WLP001/WLP500 does not show co-flocculation character in this trial.

Discussion:

Yeast blends can be made to have desired attributes of individual strains. In our study we found WLP200 shows attributes of both WLP001 and WLP002. This yeast blend attenuates like WLP001 and flocculates like 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. However, the yeast blend WLP001/WLP500 did not show beneficial characteristics. Yeast must be chosen for their desired interaction with each other.