

Yeast Strain Fermentation Differentiation: *A Case Study*

NEVA PARKER

WHITE LABS, INC.



Case Study:

Pale Ale Using 5 Different Yeast Strains

Objective:

Determine flavor contribution of individual yeast strains to final beer

Case Study:

Pale Ale Using 5 Different Yeast Strains

Yeast Strain	Strain Characteristics
Strain 1	Top cropping strain. Head forming. Non-flocculent.
Strain 2	Flocculent. Non-head forming. Complex ploidy (2n+)
Strain 3	Slightly flocculent (at pH 3.5 & 5.0). Poor head forming. Hybrid strain.
Strain 4	Non-flocculent.
Strain 5	Bottom cropping. UK Brewing Research Foundation strain

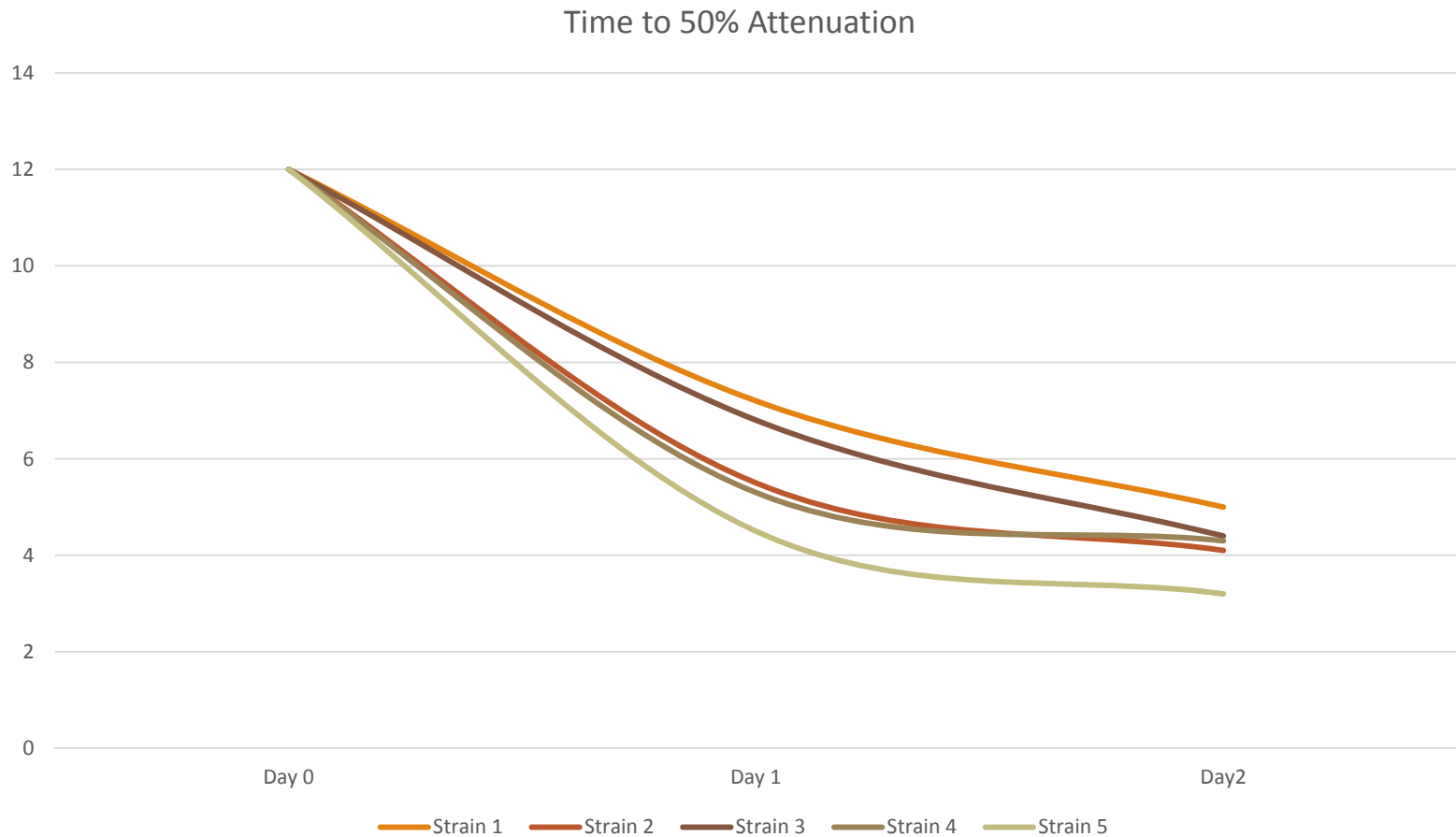
Case Study:

Pale Ale Using 5 Different Yeast Strains

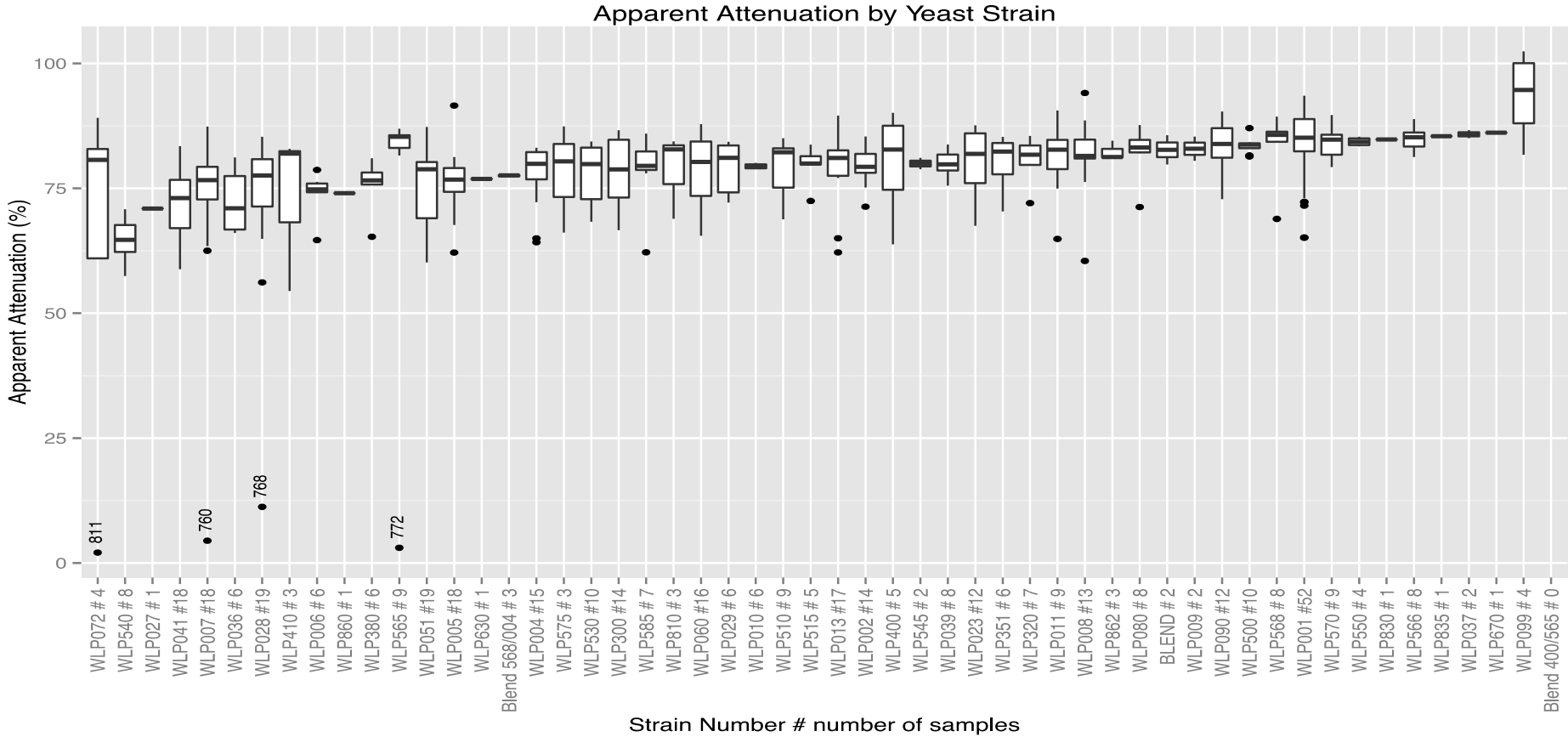
	Ingredient
44.00 kg	Pale Malt (2 Row)
3.00 kg	Caramel/Crystal Malt - 80L
3.00 kg	White Wheat Malt
300.00 g	Perle [7.50 %] - Boil 60.0 min
250.00 g	Cascade [6.20 %] - Boil 30.0 min
300.00 g	Centennial [9.70 %] - Boil 5.0 min

- Fermentation at 67°F/19°C
- 10 Day Fermentation
- Samples obtained daily for first 72 hours, then final beer sample
- Samples were centrifuged to remove yeast prior to analysis

Yeast Strain Comparisons

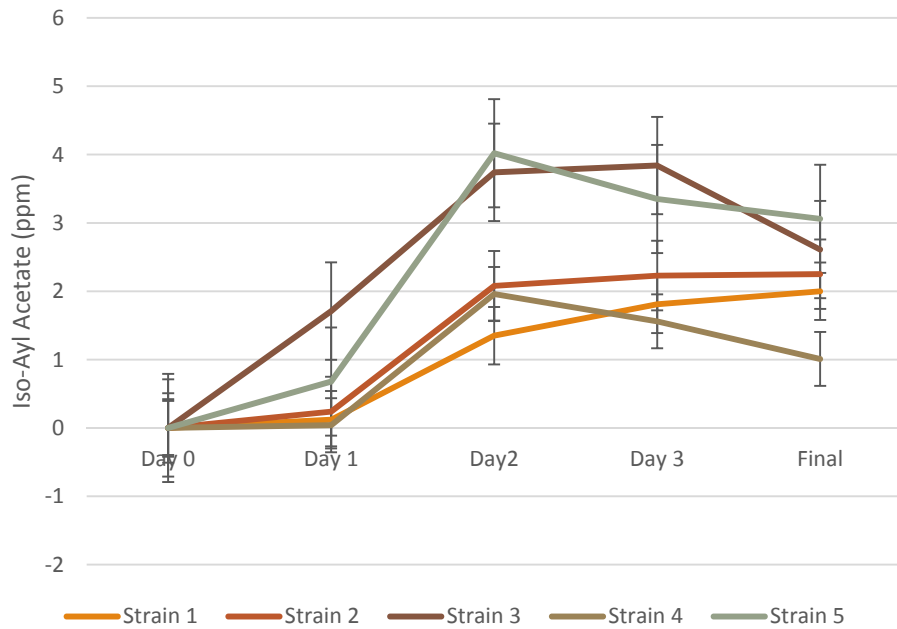


Yeast Strain Differentiation in Relation to Apparent Attenuation

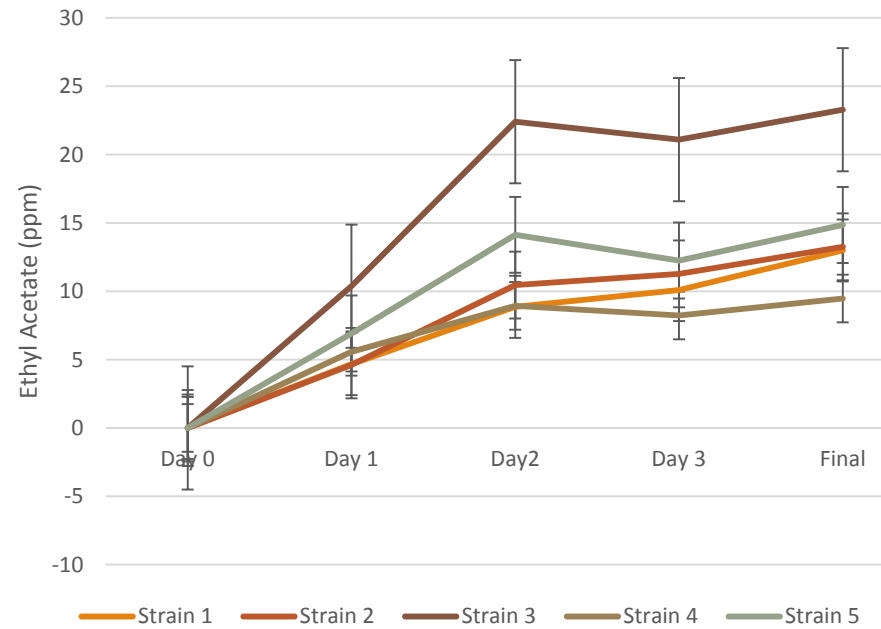


Yeast Strain Comparisons

Iso-Amyl Acetate

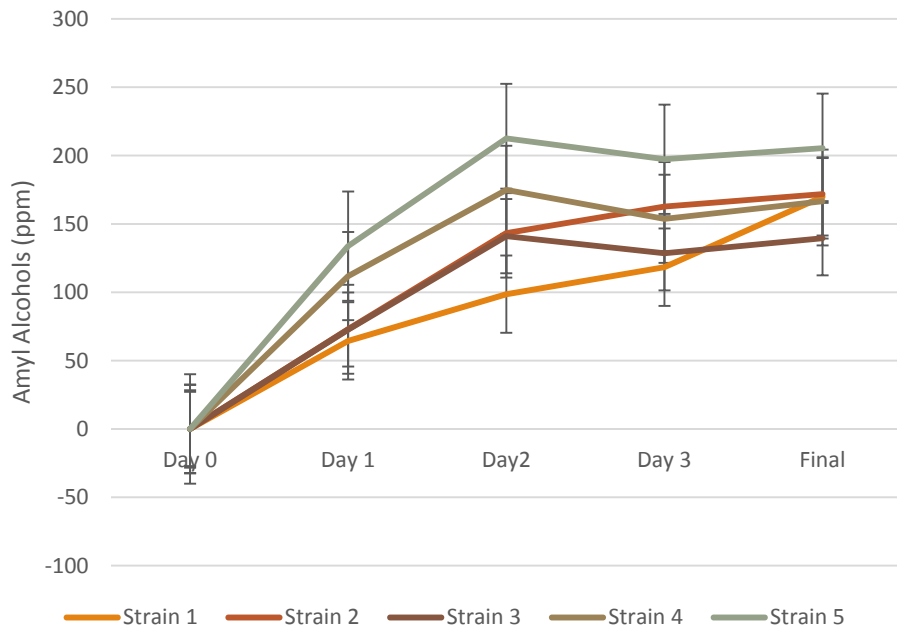


Ethyl Acetate

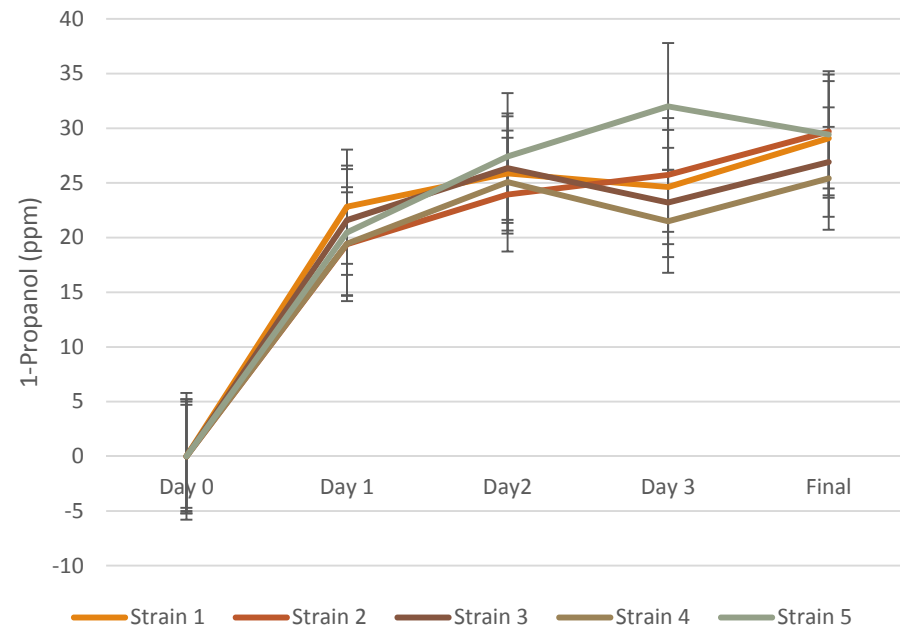


Yeast Strain Comparisons

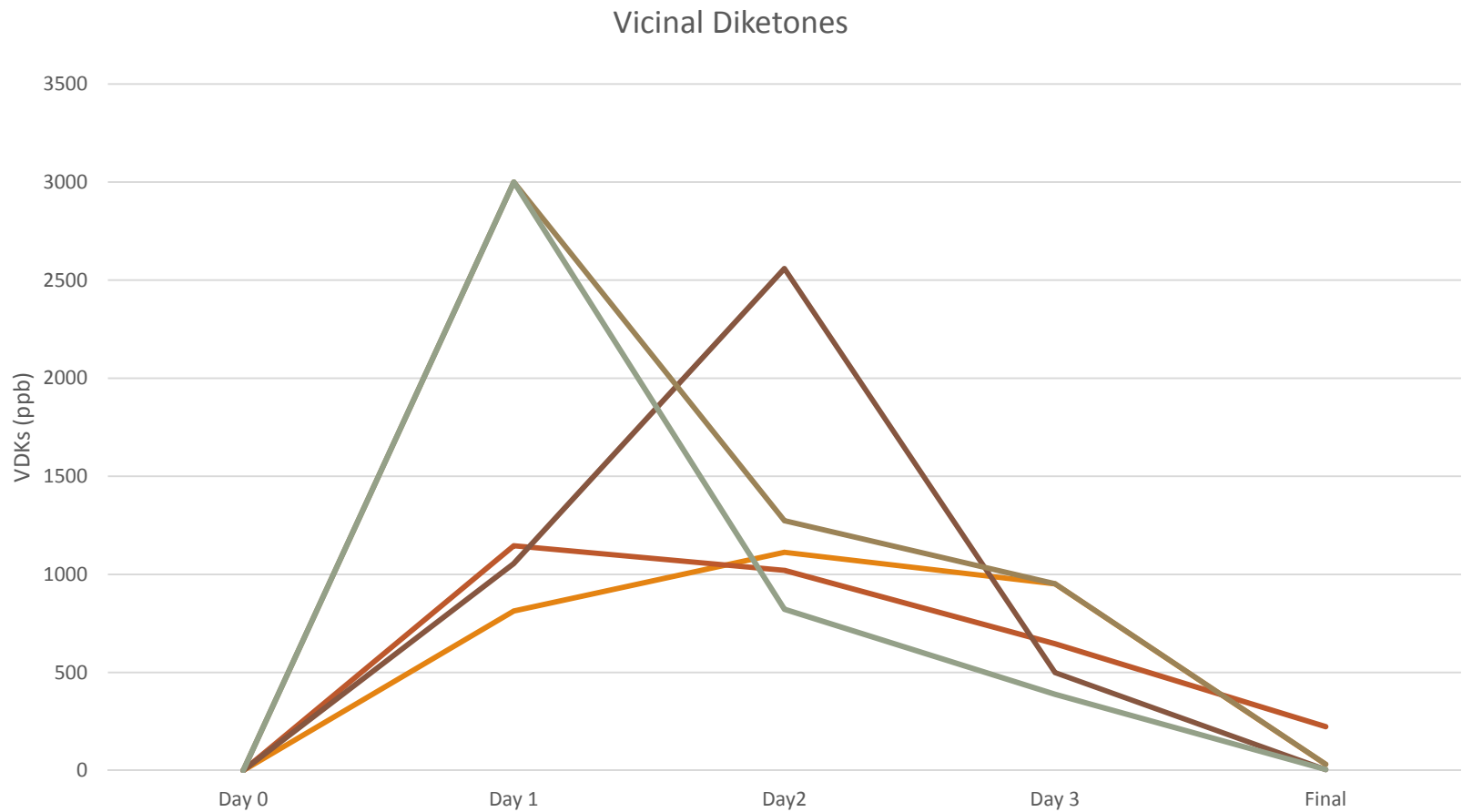
Amyl Alcohols



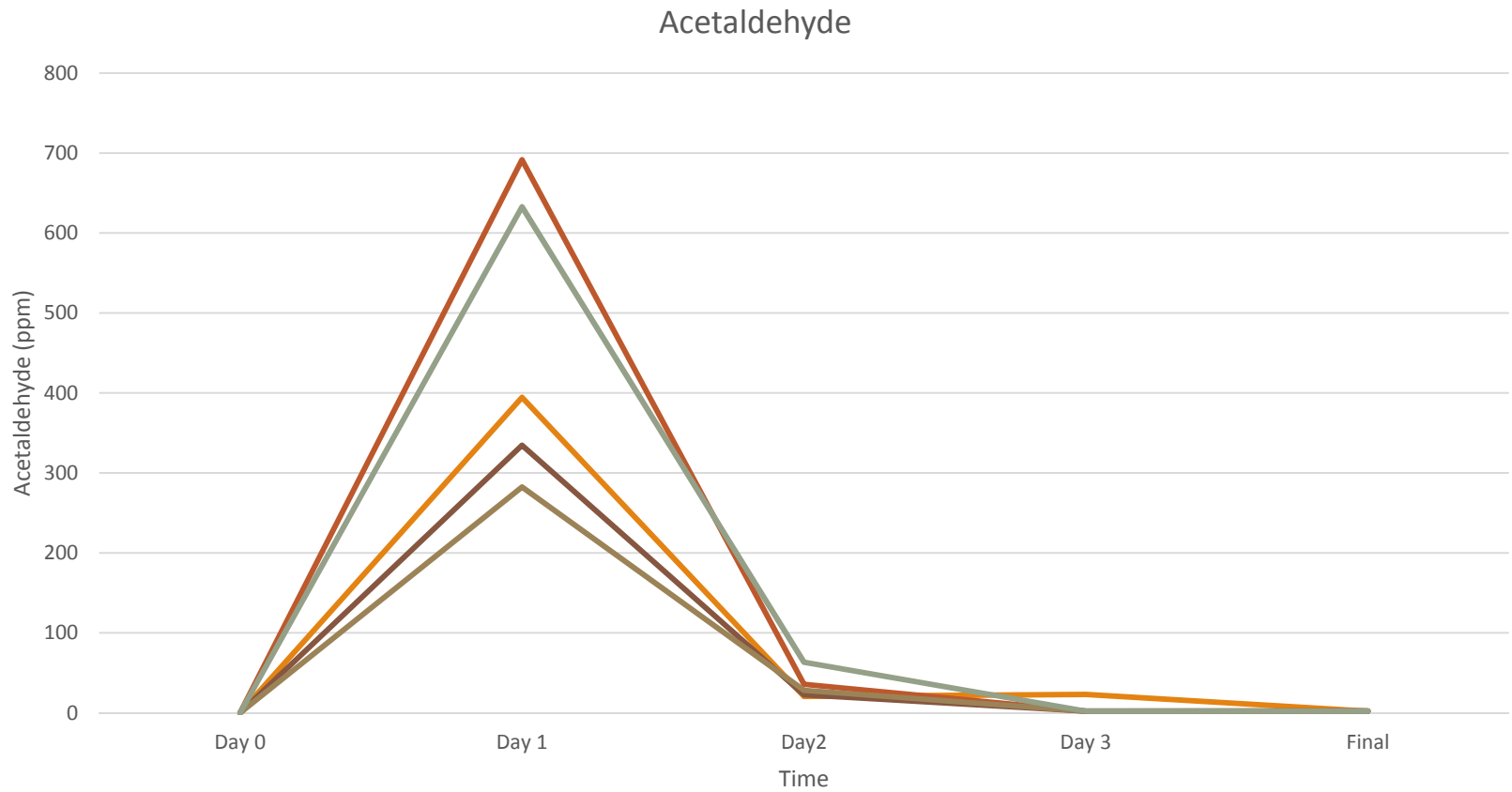
1-Propanol



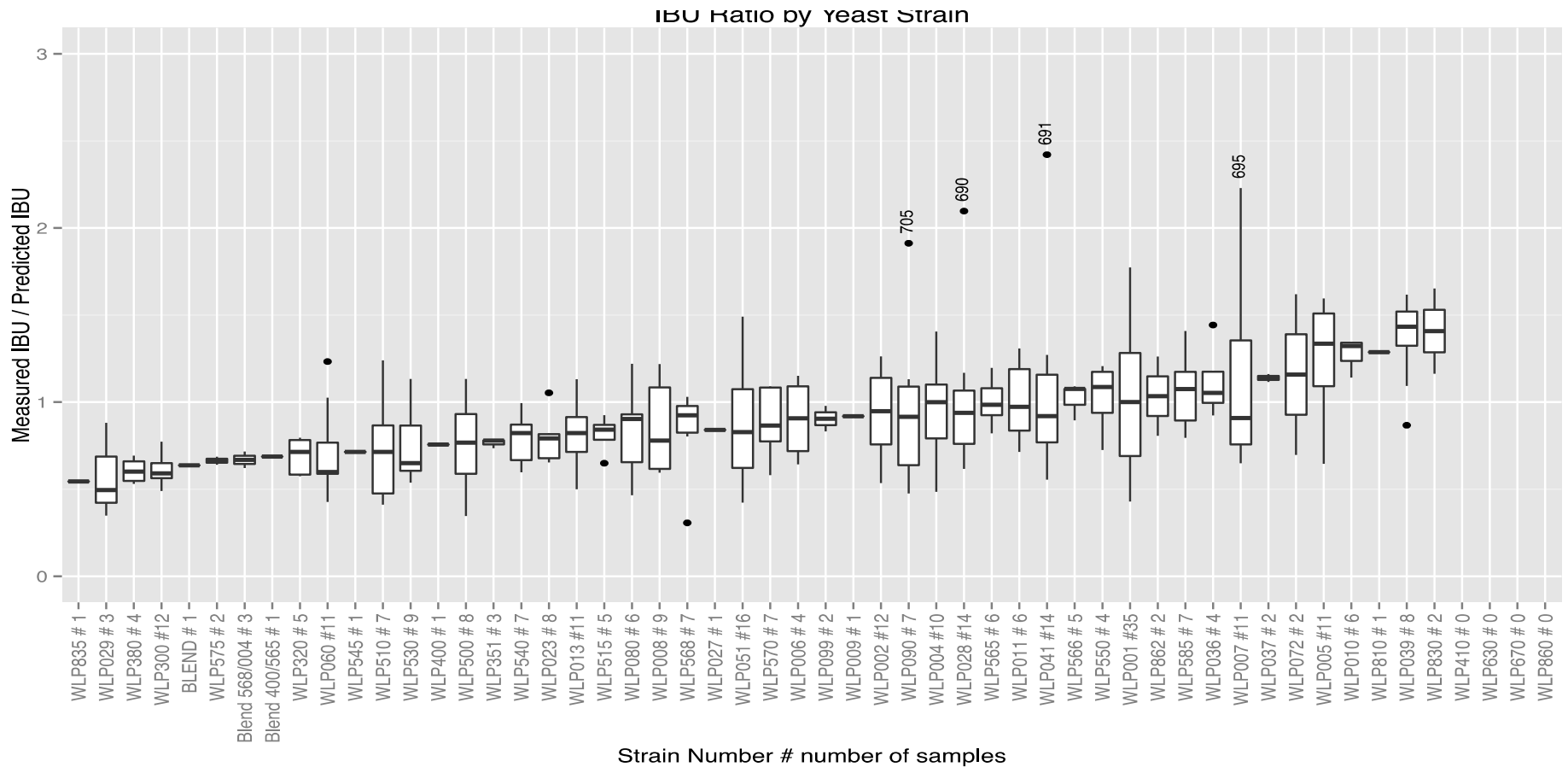
Yeast Strain Comparisons



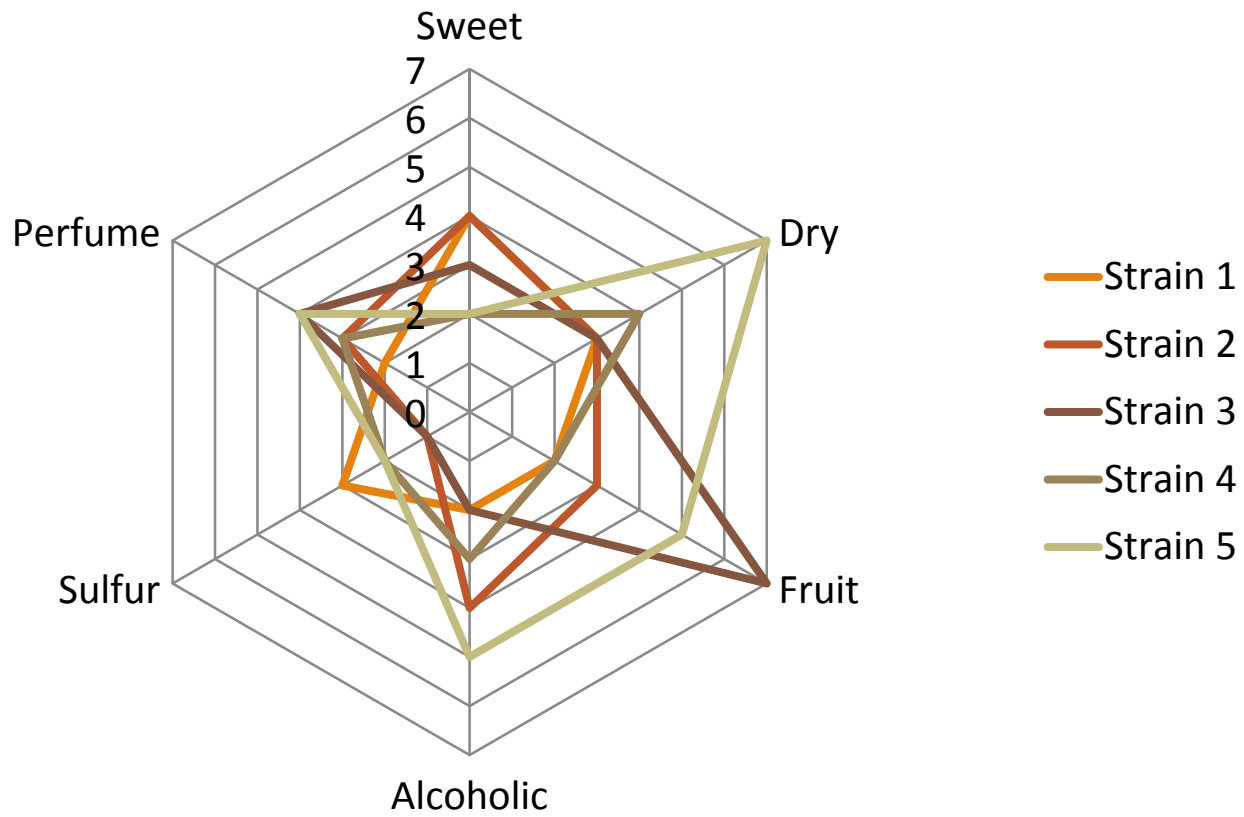
Yeast Strain Comparisons



Yeast Strain Differences in Relation to IBU

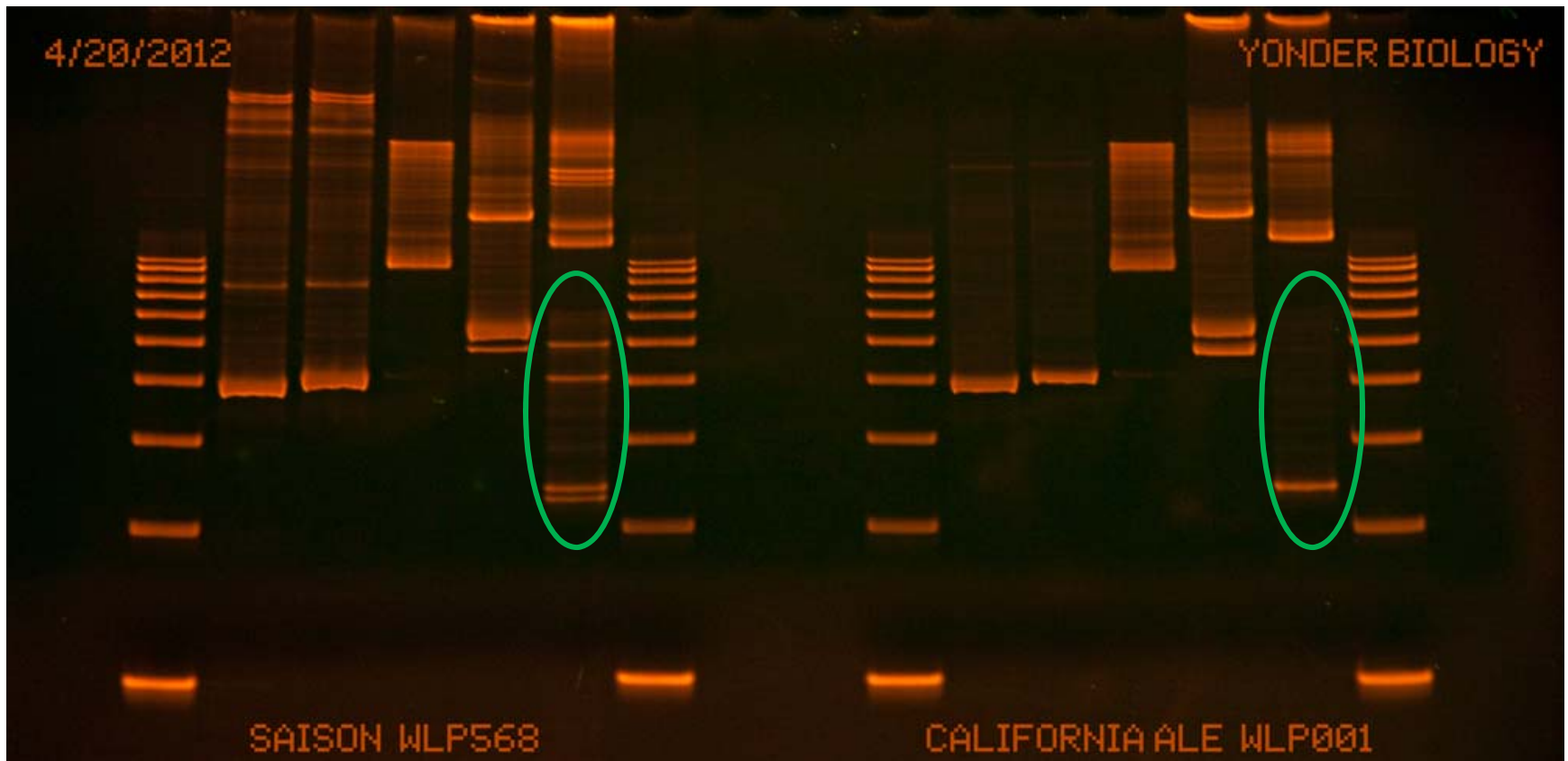


Sensory



This leads to further questions...

Where do these differences lie?



Thank You

Neva Parker

nparker@whitelabs.com