



ANALYTICAL DATA FOR:

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Wild Tea Kombucha

April 8, 2022

Executive Summary

1. No yeasts were found in any sample.
2. We can conduct microscopy to determine if yeast is present in these samples and presenting re-fermentation risk.

Microbiological

Samples were plated on microbiological media to detect anaerobic bacterial spoilers and wild yeast. Samples were plated also on aerobic microbiological media to detect total microbes.

Key Findings: Wild yeast was detected in the Cream Soda at a concentration of 0.9 CFU/mL. The Cream Soda and Rootbeer tested positive for total microbes (likely yeast – refermentation potential). We suggest replating a second sample to determine if growth is occurring. We can also complete microscopy on the positives to determine what organism is present.

Brand	Source	Batch	Package Date	Wild Yeast (CFU/mL)	Total Microbes (CFU/mL)	Bacteria (CFU/mL)
Cream Soda	Can	1037	2023-08-15	0	0	0
Cola	Can	1030	2023-08-31	0	0	0
Rootbeer	Can	1026	2023-07-31	0	⊕	0
Orange	Can	1024	2023-06-30	0	0	0

Glossary

Term	Definition & Interpretation
Acid Production	Revealed from bacterial plating and broadly indicates that lactic acid bacteria are present. Can signal greater propensity for beer spoilage, and provides a simple way to measure changes in the beer as it ages by monitoring pH drift.
Bacteria	Broad group of microbes, only five genera of which are widely known to spoil standard-strength, hopped beer: <i>Lactobacillus</i> , <i>Pediococcus</i> , <i>Leuconostoc</i> , <i>Megasphaera</i> and <i>Pectinatus</i> . Bacteria and yeast are easily distinguished microscopically, so when Total Microbe counts are obtained, this is the quickest route to establish next steps.
FAN	Free amino nitrogen (FAN) measurement, effectively a synonym for amino acid concentration, gives reliable insight into yeast behaviour in fermentation. Off-target values usually suggest that yeast growth is being inhibited by nutrient limitations, such as oxygen, or that pitch rate is insufficient. High residual FAN is implicated in weak shelf stability as various amino acids are known oxidizing agents. At target FAN levels, the risk of acetaldehyde and higher alcohol formation is extremely low. At around 20-30% above target levels, we start to observe flavour muddling extending into acetaldehyde and higher alcohol formation. Acetaldehyde is a signal that the yeast was unhealthy and often the products aren't fit for distribution, particularly as they age.
Total Microbes	Broad cultivation of bacteria and yeasts, typically under aerobic conditions unless otherwise noted.
Wild Yeast	Encompasses yeast strains typically showing diastatic behaviour. These can be <i>Saccharomyces</i> , <i>Brettanomyces</i> or any number of other wild yeast groups capable of spoiling finished product. Not all positives here cause spoilage, but regardless, the issue should be addressed in short order by working upstream from packaging.