

JAMES HEALY and JOSEPH HORZEMPA, Department of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. Identification and Analysis of Wild Yeasts for the Purpose of Brewing Craft Beer.

The recent surge in the number of breweries across the United States, and the world, has increased competition and forced brewers to find unique flavors and styles. Many brewers are relying on local yeast to differentiate themselves from macrobreweries. The objective of this study will be to isolate, identify, and analyze wild yeasts from West Virginia and the surrounding areas that can be standardized for brewing beer. To enrich for yeast, a general growth medium (yeast peptone dextrose [YPD] broth) was exposed to air, tree bark, and a swab from a two-toed sloth from the Good Zoo at Oglebay. Cultures were then plated on solid media containing antibiotics to inhibit bacterial growth. Colonies resembling the desired morphology were isolated on YPD plates containing bromocresol green to differentiate yeast species. Current investigations involve identification of the yeasts through sequencing the internal transcribed spacer region between the large and small subunit ribosomal RNA genes. Multiple assays will be conducted to confirm specific sugar utilization, alcohol fermentation, and alcohol tolerance. A sensory panel will be formed to evaluate aroma, taste, feel, and other associated characteristics. These qualities will be analyzed after fermenting beer wort. Finally, isolated yeasts will be subjected to continuous cultivation in wort to evaluate brewing consistency over a long period of time. This investigation will provide us with novel yeast strains that have potential for use in the brewing industry.