



## 2025 ASBC Research Council Funded Project

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**Project Title:** *Challenge Study to Investigate Key Hurdles Preventing Pathogenic Growth in No- and Low-Alcohol Beverages*

### **Project Intro:**

The growing demand for healthier beverage choices, coupled with the brewing industry's commitment to mitigating the adverse effects of alcohol, has fueled interest in the development of innovative non-alcoholic beer (NAB) brands. However, recent research and insights from the Brewers Association have raised concerns regarding the safety and formulation of NABs, particularly their ability to inhibit microbial growth.

While some studies have explored the impact of pasteurization on NABs, there is a lack of publicly available challenge studies assessing the inhibitory effects of intrinsic and extrinsic factors—such as CO<sub>2</sub>, pH, and preservatives—on key foodborne pathogens like *Salmonella enterica* and *Bacillus cereus* in NABs and other slightly alcoholic or acidic beverages. Gaps in published literature include how specific volumes of CO<sub>2</sub> may act as a barrier to pathogen growth in a NAB matrix.

Given the expansion of contract brewing and the diversification of beverage brands, including no-/low-alcohol and non-carbonated products, it is critical to establish a foundational understanding of how these different hurdles inhibit key pathogenic and spoilage organisms. Therefore, we propose a challenge study to assess the inhibitory effects of these factors. The findings from this research will provide essential guidance for brewers and beverage producers, improving the safety and quality of these products.

**Project Objectives:** The objective of this study is to evaluate the inhibitory effects of preservatives such as sorbate and beta acid, carbonation levels, and pH—both individually and in combination—at varying concentrations.