COMET

ARRABINA® & FUNCTIONAL BEVERAGES

CASE STUDY

Consumers are Thirsty for Functional Beverages with Gut Health Benefits

Interest in both functional beverages and digestive health has been bubbling up for the last several years, creating the perfect opportunity for prebiotic beverages. These drinks provide consumers with the taste they crave and the health benefits of prebiotic fiber.

The functional beverage category is growing fast with an expected growth rate of

9.5%

per year over the next decade.*

Functional soda that includes prebiotic varieties now represents

14%

of the digestive health category.**

Reports state that

80%

of US consumers are interested in functional beverages, with

42%

very or extremely interested.***

31%

of consumers are interested in functional beverages with gut health benefits.***

*Fortune Business Insights, Functional Food and Beverage Market Size | Global Report, 2028
**SPINS Market Data 2022
***Datassential, Functional Beverages, February 2021

COMET

Contact Our Sales Team:
info@comet-bio.com | comet-bio.com

Challenge:

As inflationary prices continue to eat into consumers' grocery budgets, the functional beverages' premium price tag may become too high for customers. Many products have shelf stability limitations that drive up their price and require storing them in the refrigerated section of stores.

While they can be stored at room temperature for a few days during shipment, they cannot be exposed to hot temperatures for extended periods. Many popular prebiotic dietary fibers, including inulin, can break down into simple sugars and become less effective at higher temperatures. pH stability is also an issue for many prebiotic dietary fibers, which can degrade in more acidic environments.

Prebiotic dietary fibers' limited heat and pH stability also present a problem during the pasteurization and retort parts of the beverage manufacturing process. Brands can mitigate this issue by overdosing prebiotic dietary fiber in formulations assuming that a certain percentage will degrade. Additional ingredient cost is one of the chief drawbacks of this practice.

Solution:

Arrabina prebiotic dietary fibers can survive shelf-life limitations and the demanding beverage manufacturing processes that often involve high heat, high pressure, and acidic environments.

Arrabina's innate structure provides clinically proven health benefits and formulation flexibility. The ingredient's applications include not only beverages but also supplements, confectionery and baked goods.

Stability Testing Results

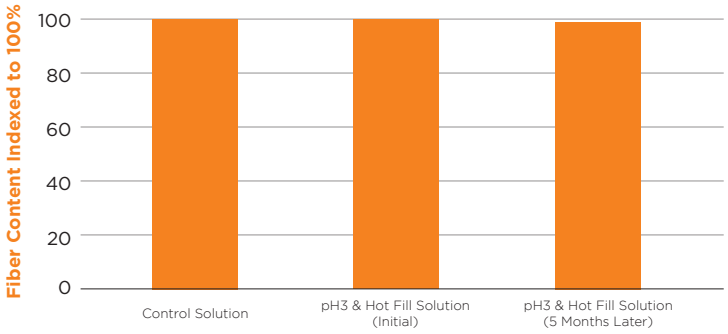
Testing shows that Arrabina prebiotic dietary fiber can be added to any beverage's existing manufacturing process without concern over the ingredient's viability. Testing conditions mimicked the most common processing conditions associated with functional food and beverage manufacturing.

Hot Fill Conditions

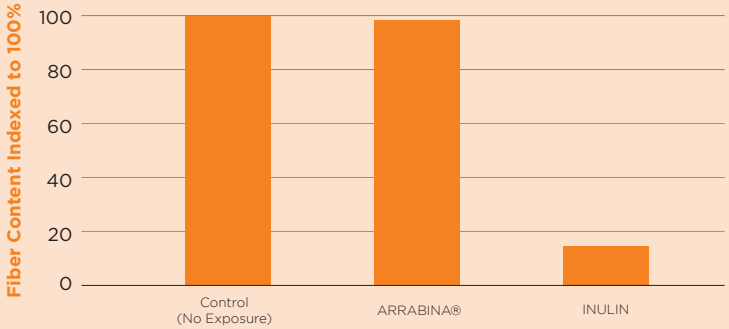
Results show that Arrabina is stable in hot fill conditions and over time with less than -0.5% degradation over a five-month period.

*2% SOLUTIONS OF FIBER TESTED IN LAB CONDITIONS AND RESIDUAL SUGAR AND DEGRADATION PRODUCTS ANALYZED OVER TIME. FIBER CONTENTS IMPUTED FROM RESIDUALS ANALYSIS.

Arrabina® Stability Over Time



Fibers Were Exposed to pH 4 & 275°F for 40 Minutes*



Retort Conditions

Results show that Arrabina is heat tolerant up to 275 degrees Fahrenheit, typical of UHT or alternative heat treatment processes commonly used to create ready-to-drink beverages.

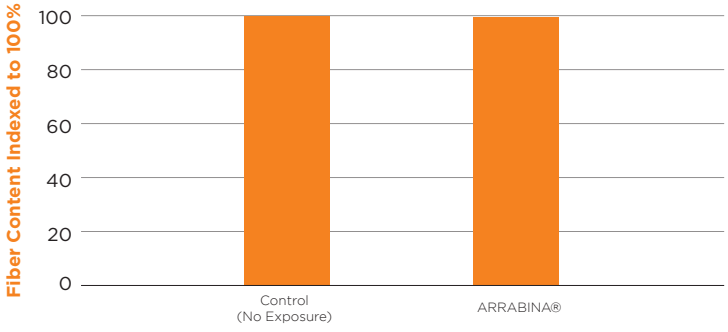
*SOLUTION OF 5% OF EACH FIBER TESTED FOR DEGRADATION PRODUCTS INCLUDING TOTAL MONOSACCHARIDES AND REMAINING FIBER CONTENT IMPUTED FROM THE ANALYSIS.

Extremely Acidic Conditions

Testing shows that Arrabina is stable in pH conditions of 2, which allows it to be used in extremely acidic beverage formulations.

*SOLUTION OF 5% OF EACH FIBER TESTED FOR DEGRADATION PRODUCTS INCLUDING TOTAL MONOSACCHARIDES AND REMAINING FIBER CONTENT IMPUTED FROM THE ANALYSIS.

Fibers Were Exposed to pH 2 & 194°F for 55 Minutes*



COMET

Contact Our Sales Team:
info@comet-bio.com | comet-bio.com