

# Major Beverage Manufacturer Turns to the Innovate™ System for Efficient Product Quality Testing of its Products



## Introduction

Commercially-produced beverage products are enjoyed by consumers around the world, with North America holding the largest market share. As one of the largest beverage companies in North America today, they generate tens of billions of net revenue annually and the demand for their beverage products is only growing. Globally, this market is expected to grow at a CAGR of 4 – 9%, with an overall projected market size of 2 - 4 trillion USD. The market growth can be partially attributed to the high consumption of sports and energy drinks due to the widespread participation in leisure sports, physical activities, and intense gym workouts. Therefore, it is vital that beverage manufacturers pay close attention to product quality in everything they make and do.

One of their facilities, based in the Midwest, focuses on the production of sports drinks, energy drinks and non-dairy, high-protein nutritional drink products. Regardless of which product, during manufacturing, bottles must be pulled during the run for QC testing. For this site, this means pulling bottles at the beginning of a run, bottles every hour during the run (one from each filling valve) and bottles at the end of the run. If there is a filler that goes down (> 45 minutes) or if a roll of foil is changed, they collect one bottle from each filling valve (32 total); these additional samples must then also be tested.

With that many samples, one of the biggest challenges was setting up microbiological testing that would be scalable with expected product production growth. On average, the site was testing 80 - 90 bottles daily using their traditional plating method. This meant holding product samples for 8 days (incubation time), culturing on agar plates (SMA or APC) which were made on site, incubating the plates for 2 days, examining plates for growth and then confirming any suspect results before releasing the final product. Collectively, this process took 11 - 14 days and required significant hands-on labor (autoclaving agar, sterilizing test tubes, preparing pour plates, reading plates after incubation and data analysis) and large incubators to hold the plates.

Additional bottles were collected for pH testing, which was conducted after 10 days of bottle incubation. Four bottles were collected at the beginning of a run, 32 bottles were collected every hour (1 per filter nozzle) and 4 bottles were collected at the end, with half reserved for pH testing while the other half were plated to test for microbial growth. Furthermore, if filler events or foil changes occurred, additional bottles would be pulled for pH testing. In the case of the example above, if 80 bottles per day were being sent to the microbiology lab for plating, approximately 120 bottles would be assigned for pH testing (assuming one filler or foil change during the day).



# Innovate™

## Results

Anticipating the rapid growth of these product types, the manufacturer knew the number of samples needing to be tested daily was going to be increasing dramatically. Therefore, it was critical that they find a more efficient, streamlined solution for their testing needs. Recently, their technicians evaluated the Innovate™ Rapid Microbial Screening System as a solution and were amazed by the results. Not only could release time be reduced to 5 days, but if retesting was required, it only added an additional 30 minutes to their testing time. Furthermore, hands-on labor was significantly reduced by eliminating the need to autoclave media and prepare plates. As a bonus, the product could be tested directly from the bottle using 100% in-pack incubation, eliminating the need for sterilized tubes for contamination testing during plating.

According to a food safety resource manager at the facility, “By shaving up to 9 days from our release time, we have seen significant savings – in time, labor and holding costs. In addition, Hygiena® has offered us rapid responses when we request support, further increasing our satisfaction with the results.”

Customer support and high throughput were the chief attractions of Hygiena and the Innovate System.

“The time, energy and effort savings we have observed have been compelling, and we have also found the Innovate System can catch microbial contaminants that the traditional pH method was not detecting. These factors have reinforced our confidence in the Innovate System.”

Moving forward, the facility hopes to implement additional Innovate System instruments on-site to improve efficiencies, reduce downtime for routine instrument maintenance, and address their ever-growing sample numbers.

**“The Innovate System can catch microbial contaminants that the traditional pH method was not detecting.”**

The Midwest facility now runs up to 1,000 product samples daily on the Innovate System. If they were still using traditional plating, this volume would have required additional lab space and incubators, more warehouse storage and potentially more lab personnel. This process improvement aligns perfectly with sustainability efforts, waste reduction and cost savings – a win-win scenario.

For information on the Innovate System, visit: [www.hygiena.com](http://www.hygiena.com)

Hygiena® is a registered trademark and Innovate™ is a trademark of Hygiena, LLC.