



The Story of Avery Brewing's Quality Assurance ATP Testing



Bursting at its stainless-steel seams, Avery Brewing Co. in Boulder, Colo., anxiously awaited its transition into a new state-of-the-art facility in North Boulder when we sat down to chat in early 2015. The brewery, which got its start in the early '90s as the fortunate result of Adam Avery's home brewing experimentation, was now cranking out 50,000 barrels a year, running brewing and bottling operations 24 hours a day at full production capacity. Quality Manager

Rob Christiansen took a rare free moment to share some of the trials and tribulations of maintaining sanitation quality and keeping hectic brewery operations spic and span.

With an estimated 85% of its fermentation outdoors in the foothills of the Rockies, Christiansen explained the old facility had "a lot of unique challenges." In addition to seasonal wintery conditions, all tank connections were manual, requiring brewers to grab and stretch hoses up to 100 feet to manually connect to a tank.

"A lot of the beer was traveling long distances, so we always had major concerns about micro-pickup in that brewery," Christiansen said. To mitigate this concern? "We over-clean and overcompensate ... but one of the things we were having a hard time with [years ago] was quick validation... We were turning tanks so quickly and we needed to brew into them as soon as they were clean...and making sure they were clean takes time with microbiology plates."

Flash back to 2011, when then Pinch Hitter/Brewer (his title, not ours), now Cellar Manager, Dan Strevey proposed a new technology he became familiar with in his Fermentation Science courses at Colorado State



University. The technology was ATP testing - a simple and affordable test method used by most food and beverage processors to verify cleaning effectiveness in seconds. The science is based on the detection of organic materials on surfaces and in water samples using a bioluminescent reaction. The pen-shaped test devices contain a bioluminescent enzyme that reacts with organic material to produce light, which is then measured in a handheld meter about the size of a cell phone (called a luminometer). The cleaner the surface (or less contamination in the water sample if a CIP system is being tested). As a result, Avery Brewing integrated ATP testing into its sanitation protocols in 2011.

"The more we used (the ATP monitoring system) the more we came to depend on it - and now it's a very integral part of our cellar program and cleaning in general," stated Christiansen. "We've tested the ATP meter to the point where we're comfortable with it telling us what's clean and what's not clean." With around-the-clock production, as soon as tanks are emptied at Avery, they are immediately deep cleaned and prepped for the next beer (production run). Anyone who is trained in cleaning equipment knows how to use the ATP meter to validate their cleaning instantly. "It gives people confidence that they did a good job getting the tank clean."

Luckily, the occasional yet inevitable high ATP score offers more insight in addition to the suggestion to run another caustic cycle and try again. The swab can be taken to the brewery's on-site micro lab, where a sample can be transferred to a culture plate to see what grows. With a long list of wild ales in production – sours, barrel-aged, and other high-Brettanomyces beers – cross contamination and microbial control from tank to tank is critical to prevent after-package fermentation and off-flavors.

For Rob Christiansen, the peace of mind brought by a quick validation tool reinforces his confidence in the quality control systems he and his team have built at Avery.



"The ATP meter is just another way to not only make all of us sleep better at night, but it's also a great tool for the staff too.... Before the ATP meter, you'd clean the tank and you'd say 'Okay, I did my job' and you'd close it up and it would be ready for the next beer. And now you can go into the lab and validate what you just did and you have the peace of mind that it's clean. We've been doing this for a very long time now and we have the right people in the right position to come up with the right SOPs to validate everything."

Avery Brewing Co. is not the first, nor will it be the last, brewery (big or small) to embrace ATP testing with open arms. "Some breweries just don't know about ATP tests, they're unsure of exactly what the test does." To them, we say, just ask Rob Christiansen.

To learn more about ATP testing in breweries and watch an instructional video on how ATP testing works, visit www.hygiena.com

Established in 1993, Avery Brewing Company has developed a reputation as being one of the most daring and visionary breweries in the nation. They are the brewers of Avery IPA, The Maharaja Imperial IPA, White Rascal Belgian Wheat Ale, Mephistopheles' Stout and eighteen other year-round and seasonal beers. Please go to www.averybrewing.com for more information on Avery beers.