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Cooper and Mill
Brewing Co.

BREW MONITOR[®] AT COOPER AND MILL BREWING CO. —

Real-Time Fermentation Monitoring Transforms Operations, Saves Time and Helps Brewer Teach His Son the Ins and Outs of Brewing.

Shawn Childress is a co-founder of Cooper and Mill, Bartlesville, Oklahoma's first locally owned and operated brewery. It's hard to say whether Childress is a chemist turned brewer or if his passion for science led him to explore brewing. "I learned about brewing in organic chemistry class and fell in love with the process and science behind it," he said. Childress, who brewed his own beer in graduate school, jokes that his interest was also driven by the fact that brewing beer was cheaper than buying it. But in all seriousness, brewing offered Childress a way to combine his passion for chemistry and brewing.

Childress, who works full-time as a research chemist, continued brewing as a hobby but eventually, it became a side gig. In 2019, he teamed up with John Kane and Kaci Fouts, Bartlesville locals who also had a passion for brewing and dreams of creating a space where people could gather and enjoy locally crafted beer. In 2020, they opened Cooper and Mill. Today, the brewery operates a 7-barrel system with the capacity to brew 1,000 barrels per year and offers a limited core selection along with several experimental beers.

THE CHALLENGE

Finding the Time to Manage Brewing Operations and Batch Quality While Working Full-Time

A chemist at heart, it's not surprising that Childress likes experimenting with variants of traditional styles and yeasts. Cooper and Mill uses kveik yeast for most of its beers, but its second best-selling beer, The Gambler, is brewed with Lachancea and is what Childress calls a happy accident. Rather than toss a batch that didn't go as planned, Childress decided to sour it instead.



We soured that particular batch and some subsequent batches with yogurt,” he said. “The lactobacteria worked but kettle souring was time-consuming so we quickly switched to Lachancea, which did all of the souring and fermentation in one step. And with that, The Gambler was born. As Kenny Rogers would say, you’ve gotta know when to hold ‘em.

— Shawn Childress, Co-Founder,
Cooper and Mill Brewing Co.

Experimentation requires a watchful eye. As Cooper and Mill continued to grow, Childress’ full-time job as a chemist wasn’t leaving enough time for him to manage brewing operations.

“After my day job, I would head down to the brewery but waiting all day to take readings and make adjustments was becoming stressful.”

Childress was stretched thin and began training his son Asher. “He was young and didn’t have the years of brewing experience that I had, but he wanted to learn, and I was eager to teach him,” said Childress. “He basically went from a keg washer to a brewing apprentice overnight.” As it turns out, Asher takes after his father and has a natural knack for brewing. Although having Asher take over as head brewer would free up time for Childress, he still needed to learn the ropes. Finding a way to oversee brewing while also teaching Asher the intricacies of fermentation was becoming Childress’ newest challenge.

THE SOLUTION

Real-Time Fermentation Monitoring and Continuous Sampling Bring New Efficiencies and Assurance

Childress discovered real-time fermentation monitoring and was all-in. He started using Precision Fermentation’s BrewMonitor® in 2021, replacing manual sampling and testing with automated, live-streamed fermentation monitoring.

“BrewMonitor® was beneficial from day one and we started using it as much as possible.”

“It’s especially useful when we brew pseudo lagers with kveik yeast, which ferments at a lower temperature of around 70 degrees, so we have to track it closely to get the flavor profile we desire. In colder months, the temperature in the tanks can drop below 70 degrees. We use BrewMonitor® to track the temperature. When we see it starting to drop, we just go in and heat the tank. Without BrewMonitor to catch the drop in temperature as it happened, we wouldn’t be able to make the correction and fermentation would be delayed.”

The ability to monitor fermentation remotely has been game-changing for Childress, who no longer has to drive to the brewery after hours to pull samples. “It’s really made a difference when we brew The Gambler,” he said.





Before installing the BrewMonitor®, we had to manually pull pH two or three times throughout the day. Now, we can follow the pH drop from our phones and know the minute it drops into the sour range. We don't have to take measurements all day long. As soon as it hits the right pH, even if it's in the middle of the night, we can go in, make sure it tastes right and pitch the sach strain. Now that we can catch the right timing, we can reduce the process by several days."

— Shawn Childress, Co-Founder,
Cooper and Mill Brewing Co.

The BrewMonitor® also allows Childress to stay involved in the operations while he teaches Asher the ins and outs of brewing.

"I probably look at the data too much," he jokes. "With Asher still learning, BrewMonitor® gives me peace of mind and assurance that our fermentations are going well. With the data at my fingertips, I can alert him if I see potential issues, like an unexpected increase in pressure or temperature. Those real-time teaching moments are incredibly valuable."

Data from previous fermentations gives the father-son team insight into precise adjustments or changes they can make to duplicate results or improve future fermentations.

“We both learn a lot from the data,” said Childress. “It’s invaluable, even for a smaller brewery like ours.”

BrewMonitor® also makes it easy to track and assess yeast health. “We know when it’s time to order more yeast or try something new. By analyzing the data and overlaying trends, we can determine when a yeast is getting sluggish,” said Childress.

“As a small brewery, we don’t have a lot of lab capabilities. The ability to see when a yeast didn’t take off as fast or the temperature didn’t rise tells us it’s time for another strain. We had a batch recently that just wouldn’t ferment but we couldn’t determine what was going wrong. After unsuccessful repitching, we resorted to more aggressive yeast and were able to salvage the batch. BrewMonitor® helped us determine what was going wrong without having to do a lot of sampling. Without it, we probably would have decided to dump the batch.”

Childress recommends BrewMonitor® to anyone who wants to brew more efficiently and gain more control of the fermentation process. “BrewMonitor® has been easy to use. The sensor is durable and the connectivity is always reliable. Being able to see what’s happening in the tanks throughout the day, even when I’m not physically at the brewery has made my life much easier. It gives me more time to experiment as a brewer and is helping Asher learn and perfect the craft. He’s become one of the best brewers in the area and it’s rewarding to see him running our brewing operations. I credit BrewMonitor® for giving me the assurance and the ability to hand over the reins.”