



SHEPHERD NEAME
BRITAIN'S OLDEST BREWER

QCL

Detection of Beer Spoilage Bacteria

For centuries the Faversham Brewery has nestled in the medieval market town of Faversham in Kent, the home of Britain's oldest brewer Shepherd Neame. Using natural ingredients Shepherd Neame brewers produce Kentish ales bursting with character and renowned international lagers.



Faversham sits on a layer of chalk which filters the rainfall and produces a certified mineral water that is drawn from an artesian well deep beneath the brewery. More than 80% of the hops used are sourced from Kent and fresh malt is delivered to the brewery daily. 97% of the grain and hops used in the brewing process is used as animal feed on local farms and a recovery plant recycles the waste water that results from brewing and cleaning.

Beer Spoilage Bacteria

The brewery laboratory was using traditional plating out methods and force bottles in incubators for up to 3 weeks for positive release of bottle conditioned beer. Plating out bottles each week was time consuming and potentially meant waiting for up to 4 weeks before final results were available allowing release of the product. Demand meant that this process needed to be looked at to enable earlier release.

Laboratory manager Sarah Marshall decided to evaluate rapid analysis micro systems for detecting beer spoilage bacteria to see if they were an improvement over the traditional methods.

"QCL suggested the BrewPAL kit from Invisible Sentinel to detect Pediococcus and Lactobacillus sp. Recommendations from large breweries across America gave us the confidence to trial it. Representatives from Invisible Sentinel flew in from America to help set it up along with QCL and we trialled the kit for just over a week. We ran the kit alongside regular plating out and were pleased with the accuracy of results and ease of use.

We first ran our most recent batch of bottle conditioned ale and were pleased it gave a negative result. One week later the micro plates confirmed this result. Over the week we ran yeast slurry

samples, fermentation samples and forced bottles from our BCA run. Known infected samples were run and it provided quantitative results for expected organisms. The plate reader gives an accurate result of amount of organism within the sample, or the colour change on the cassettes can be read by eye.

The kit comes complete with instructions on how to prepare and run the tests very simply, we found it easy to use and it provided results, which would normally take one week to obtain, within three hours.



Test Cassette

We decided to invest in this kit primarily for the positive release of our bottle conditioned ale and in the future potentially for yeast slurry prior to pitching to avoid costly pitching of infected yeast".

The only detection tool with proven accuracy, BrewPAL is easy to use and provides quantitative test data in less than 3 hours. The sample is placed in a centrifuge for 10 minutes followed by a 2½ hour amplification in a Thermocycler. The sample is then transferred to a test cassette. One line indicates negative result, two lines indicate semi-quantitative positive results.

QCL supply a range of microbiology tests for brewers including:

- BrewPAL - Pediococcus and Lactobacillus (Hop Resistant)
- BrewLAP - Pediococcus and Lactobacillus (Lactic Acid)
- BrewBRUX - Brettanomyces Bruxellensis
- BrewDEK - Dekkera/Brettanomyces
- BrewMAP - Megasphaera and Pectinatus



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