Reliable quality assurance in beer production

Detection of beer spoiling bacteria and yeasts

Key facts

Simple
- Easy workflow with minimized hands-on-time
- No trained laboratory personnel needed

Fast
- Get your results faster
- No need to wait for external analysis results
- Always be one step ahead and make the right decisions on time

On-site
- Save time by doing the analysis at your site
- Always keep the full control from sampling to result
- No time-consuming shipping process of your samples

Endress+Hauser BioSense has developed a system to support customers in the rapid and early detection of beer spoilage bacteria, yeasts and hop resistance genes. The system aims to assure product safety compliance and sustainability.

Quality assurance is of paramount importance in beer production. Beer spoilage bacteria and yeasts have the potential to compromise the flavor, aroma, and overall quality of the beer. Implementing stringent quality control measures and monitoring systems ensures early detection and mitigation of such contaminants.

On-site testing offers significant advantages over standard laboratory testing. By conducting tests directly on-site, delays associated with sample transportation and centralized processing are eliminated. With reduced turnaround times and increased efficiency, on-site testing streamlines workflows compared to conventional microbiological methods which are often time-consuming.

The new Endress+Hauser BioSense Analysis System enables rapid detection of even small amounts of spoilage bacteria and yeasts. This is reached by combining patented sample concentration technologies with centrifugal microfluidics and state of the art automation. By eliminating the need for error-prone pipetting and handling of harmful chemical reagents, the work area is kept safe, and the health of the laboratory staff is optimally protected.

Targets

- Up to 18 types of different beer spoilage bacteria
- Up to 18 types of different yeasts
- Up to 3 hop resistance genes

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Conventional laboratory and Endress+Hauser BioSense workflow comparison

Step	Conventional laboratory workflow	Endress+Hauser BioSense workflow
Sampling and enrichment	▪ Manual or automated sampling at a customer-defined point in time ▪ Optional steps dependent on sample matrix and customer need: ▪ Homogenization ▪ Enrichment	
Lysis	▪ Two thermal devices necessary ▪ High risk of mix-up and contamination while handling buffers, enzymes and other reagents ▪ 30 minutes hands-on time ▪ 30 minutes lysis and inactivation	▪ Closed system automating all steps after sampling and enrichment ▪ All reagents are pre-stored ▪ No manual intervention necessary
DNA/RNA purification	▪ Centrifuge required ▪ Use of potentially hazardous chemicals ▪ High risk of mix-up and contamination while handling different reagents ▪ 60 minutes hands-on time	
PCR and data analysis	▪ Seperate lab rooms necessary ▪ Pipetting error-prone small volumes ▪ 30 minutes hands-on time ▪ 60 minutes PCR duration ▪ Manual data interpretation required	

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