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Polish researchers found that half of draught beer samples failed hygiene standards

The study linked contamination in bars and restaurants mainly to local cleaning practices rather than beer style or venue type

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Researchers from Lodz University of Technology presented new findings this week on two issues with direct relevance for brewers and drinks operators: the use of probiotic yeast in alcoholic fermentation and the microbiological hygiene of draught beer served in bars and restaurants.

The research was discussed Wednesday during a seminar hosted by the University of Trento's Center for Agriculture, Food and Environment in collaboration with the Edmund Mach Foundation. The speakers, Andrea Maria Patelski and Maciej Ditrych, both from Lodz University of Technology in Poland, outlined work that points to possible new uses for Saccharomyces boulardii in beverage production and renewed concerns about contamination in draught beer dispensing systems.

Patelski said her recent studies examined S. boulardii, a yeast widely known for its probiotic role, in fruit juice, cider, perry-type beverages and distillery fermentations. According to the seminar abstract released by the University of Trento, the work looked at ethanol production, preservation of phenolic compounds and color, aroma development and sensory quality.

The findings presented suggest that S. boulardii can produce ethanol at levels comparable to conventional fermentation strains while also offering added technological and functional properties. That could make it a candidate for more specialized alcoholic beverages and other niche fermented products, especially as producers look for ways to differentiate products through fermentation choices rather than only through raw materials or packaging.

The research remains notable because probiotic yeasts have been studied far less in alcoholic fermentation than standard brewing, wine or distilling strains. In practical terms, any yeast that can match expected alcohol yields while also affecting aroma, stability or nutritional positioning may draw interest from beverage makers working on cider, fruit-based drinks and experimental low-volume releases.

Patelski's broader research focuses on yeast biotechnology and fermentation applications, including distillery and baker's yeasts, functional beverages and innovative alcoholic products. At Lodz University of Technology, she has led work on applying S. boulardii to fermentation technology as part of a wider effort to develop value-added uses for food and agricultural by-products.

The second part of the seminar addressed a more immediate operational issue for the beer trade: hygiene in draught systems. Ditrych presented results from a study of draught beer collected from HoReCa establishments in Poland. The samples were

tested for aerobic and anaerobic microorganisms, fungi, lactic acid bacteria, Pectinatus, Megasphaera and Enterobacteriaceae using membrane filtration and pour plate methods.

The results were then assessed under DIN 6650-6, a hygiene standard used for beverage dispensing systems. According to the seminar materials, the study found wide variation in microbial contamination across the sampled venues. About half of the samples met the recommended hygiene criteria.

That result matters because draught beer is often treated by consumers as a premium format, yet unlike bottled or canned beer it can be exposed to contamination after packaging through beer lines, taps and related dispensing equipment. The Polish study indicates that quality problems may arise not mainly from the beer itself but from what happens between keg and glass.

Ditrych’s analysis also found that contamination levels were not linked to either the type of establishment or the style of beer being served. A principal component analysis suggested instead that microbiological quality depended mainly on local hygiene practices.

For breweries, that distinction is important. If contamination is driven more by cleaning routines and line management than by product category, then standardizing maintenance protocols could have more impact than changing recipes or limiting certain styles in draught service. For bars, restaurants and hotels, it points to staff training and cleaning verification as central parts of quality control. For consumers, it raises questions about consistency and safety in a segment often marketed on freshness.

The findings may also add weight to efforts across the beverage sector to tighten cleaning and dispensing standards. In beer especially, poor hygiene in lines can affect flavor stability, aroma expression and microbiological safety, with potential commercial consequences for both producers and hospitality operators. The Polish data suggests those risks are unevenly distributed and shaped largely by local practice.

Ditrych’s research background includes brewing technology, beer flavor stability, draught beer hygiene and the microbiological quality of fermented beverages. He has worked with international brewing research institutions including KU Leuven, the University of Copenhagen and Carlsberg Research Laboratory, according to his biography provided for the event.

The seminar at Trento brought together two strands of applied fermentation science that are different in focus but closely tied to how beverages are made and served. One looks at whether an established probiotic yeast can open new paths in alcoholic fermentation. The other examines how easily product quality can decline after production if dispensing systems are not kept under control.

Together, the presentations reflect a broader shift in beverage research toward issues beyond basic production yield alone. Yeast selection is being studied not only for alcohol output but also for sensory profile and functional positioning. At the same time, post-packaging handling is receiving closer attention as a factor that can undermine quality even when brewery production standards are high.

The University of Trento listed the event as part of its academic seminar program for Ph.D. students and the wider university community. While the presentations were framed as research discussions rather than regulatory announcements, they point to practical questions that breweries, cider makers, distillers and hospitality operators are likely to keep facing as they balance innovation with product control.