A NEW APPROACH TO BACTERIAL IDENTIFICATION IN A POINT-OF-CARE FORMAT

Jennifer Koob [1*], **Fritz Jacob** [1*], **Ralf Dostatni** [2*], **André Breitbach** [2*], **Mathias Hutzler** [1*]

[1*] *TU München, Research Center Weihenstephan for Brewing and Food Quality, Freising, Germany*
[2*] *Milenia Biotec, Gießen, Germany*

Abstract:
The detection and identification of spoiling bacteria in different stages of the beer production process is a topic of great interest for microbiologists in breweries. Modern methods are not yet established in contrast to old fashioned cultural techniques due to costs and the need for molecular biotechnological know-how. Another difficulty is the sole identification by microscopic images because of the variability of the species specific, culture medium dependent appearance. Therefore, the crucial question is often not the contaminants' determination itself, but the specific identification of the spoiling germ and the resulting danger. A new method in strip format targets the identification of the most frequent beer spoiling bacteria. The test is easy to use, gives results in 70 minutes and is sensitive and specific.

Core of analysis is the polymerase chain reaction (PCR).Without the demand of DNA purification from the sample, species or group specific primers targeting the 16S-rDNA are introduced in the reaction tubes. The forming DNA copies are labeled, if the target microorganism is present in sufficient amount. The labeled copies can then be detected by a dipstick, working similar to a point of care pregnancy test.

First results indicate that the strips identify beer spoiling contaminations or spoilage indicating genes as for example HorA faster than cultural methods, as sensitive as most realtime PCR methods and very specific. The most important advantage is the simple handling combined with a naked eye reading of the test strips.

[*]*Corresponding author: j.koob@wzw.tum.de*