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ZIM
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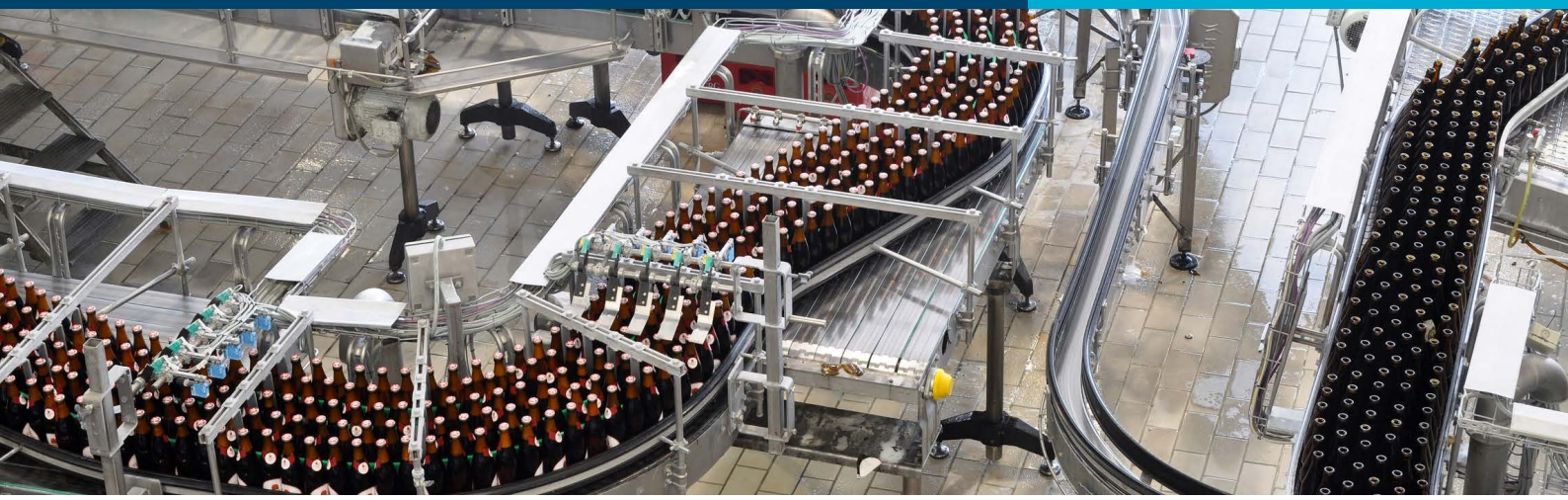
ZIM Success Story

Central Innovation Programme for SMEs

Cooperation Projects 116



Hygienic Check – safe and efficient

The routinely cleaning of production and filling machines in the beverage industry faces high requirements in terms of hygienic measures. During the cleaning period and the connected time consuming evaluation of the hygienic status the machines are out of service. A new gel structure allows the reliable and fast judgement of the hygienic status on site.

Several hygienic scandals in the past have dramatically shown to the public, that production facilities and rooms of the food and beverage industry can be an ideal breeding ground for various micro organisms. The residues and pollutants on such a “population” express a serious danger for the health of consumers and production staff. High requirements on the implemented hygienic actions and their monitoring are essential for that reason. While two decades ago the beverage industry produced relatively large charges, todays markets demand a greater variety of beverages which are usually produced in small charges. This development exposes high challenges on the cleaning of production and filling machines. Currently this process happens automated or in manually fixed procedures. Normally foam cleaners are implemented.

For inspection of the cleaning activities so called direct contact tests are taken randomly and are examined regarding their microbial contamination. Along with that evaluation the production facilities are out of service for approximately two days. An extensive monitoring with that method is not feasible due to its extraordinary efforts.

The product and its innovation

In a German-Austrian cooperation a new and easy manageable system for a quick and efficient validation of cleaning measures has been developed. The success of a cleaning treatment is verified by a gel, which is sprayed on extensively. Weaknesses in the effective cleaning can afterwards be localized and quantified precisely by contrast levels of the contaminated areas. This is enabled by a two-component-colour indicator, which is added to the gel directly before the application. The colour indication itself is based on a known Persulfate-Permanganate-Technology, which highlights the oxidation of organic substances.

Within seconds after the application of the gel all organic traces from food residues like proteins, fats, sugar, aromas, phenolic compounds, oxalates and micro organisms are visualized.

The developed hygienic check offers the following advantages compared to analysing methods available on the market:

- → The results are available within 60 seconds
- → Visual recognizable colour reactions (violet - clean / green - contaminated)

Services

- Corrections in cleaning efforts are immediately applicable
- The used substances are non-toxic, no ecologically hazardous emissions are produced
- For the executing staff no specific training or equipment is needed

The documentation and the visual interpretation of the colour-envelope can additionally be performed with a specifically developed sample-extraction-system and a optical measuring unit.

The new evaluation technology enables a reduction in downtimes of filling machines due to cleaning processes that lasts only half a day including the verification of the microbiological cleanliness of the facility.

Market and customers

The commercialization of the project results will be ensured by both the German company Mathes and the Austrian company Thonhauser in types of technical services for the evaluation of cleaning successes.

The cooperation partners

Versuchs- und Lehranstalt für Brauerei (VLB) e.V., 13353 Berlin, Germany

Franz Mathes GmbH, 85077 Manching, Germany

Thonhauser GmbH, 2380 Perchtoldsdorf, Austria

Project coordinator

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The Central Innovation Programme for SMEs (ZIM) provides support for promising technologies and industries in a number of arrangements:

- Individual projects
- Cooperation projects
- Cooperation networks

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