

Hygienic design makes process technology safer and more efficient

29 November 2012 by Messe München

The microbiological and hygienic demands on the production of beverages and liquid foods are very high. Sensitive products need to stay in prime condition for a long time and meet rigorous standards of quality and sustainability. In future these standards are expected to rise still further, against a background of continued sparing use of natural and human resources. Just how these differing demands are to be met will be shown at drinktec, the World's Leading Trade Fair for the Beverage and Liquid Food Industry, which takes place from September 16 to 20, 2013, in the exhibition halls in Munich.

Richard Clemens, Managing Director of the conceptual sponsor of drinktec, the Food and Packaging Machinery Manufacturers Association (*Fachverband Nahrungsmittelmaschinen und Verpackungsmaschinen*), affiliated in the VDMA (Germany's engineering federation), sums it up: "Designing and building machinery and plant in line with the requirements of hygienic design is an absolute must in our sector." There are clear requirements for the implementation of hygienic design. These include an engineering design that is as simple as possible, access to all surfaces, no unnecessary surfaces, no hidden 'dead' spaces or roughness, and all liquids should be able to run off freely. Of continued importance is the use of materials that have outstanding process and cleaning characteristics as regards surface structure and temperature and chemicals resistance – from the smallest seal through to the largest tank.

According to Richard Clemens, hygienically designed technology optimized for production processes offers more than just microbiological safety: "Product safety, i.e. protection of the consumer, is of course the main focus. But the hygienic design of process, filling and packaging systems also offers benefits in terms of efficiency: easy-to-clean surfaces and components will save on water, cleaning agents and energy. The total time spent on cleaning is shorter. And that means longer production times and increased efficiency of the systems technology."

The importance of ongoing hygiene monitoring

The importance of ongoing cleaning in beverage and food production cannot be underestimated, because without this, standards will slip. Targeted hygiene monitoring helps maintain the microbiological status that is being aimed at. As well as product analysis, swabs and samples are taken which are then cultivated on selective micro culture media and analyzed. The current status of production is thereby made transparent. If

the monitoring takes place on a defined schedule as regards sample time and place, then the hygiene status of production can be effectively controlled through preventive cleaning and disinfecting processes.

Broadly when it comes to cleaning, organic dirt is removed by alkaline and mineral-acid cleaning agents. Specific cleaning qualities can be achieved with the use of further additives. Enzymes continue to be of interest, and the applications for these will be discussed in the forums program at **drinktec** on September 18, in Hall A2. For the disinfection of surfaces and media, the beverage and food industry can also call on tried-and-trusted products that are based on chlorine, ozone, UV light, aldehydes, peracids, haloacetic acids, alcohol and ammonium compounds.

Interesting new fields of application opened up by ECA disinfection

In recent years much there has been much talk about the use of electrochemically activated (ECA) water in disinfection. In this process, membrane-cell electrolysis is used to produce a disinfecting chlorine compound from a watery salt solution. The use of ECA water has been investigated thoroughly, and interesting new fields of application can be found for processes in beverage and food production, as explained by *Robert Günther, Branch Manager Food & Beverage / Drinking Water from the **drinktec** exhibitor ProMaqua*: "Our electrolysis process means we can produce ECA water effectively on site, water that has a particularly low concentration of chloride. In practice the minimal chloride concentration of our ECA water means a minimization of the corrosion risk. Pipes, machine and system components are not attacked. With CIP (cleaning-in-place) applications, this also reduces the time input and energy consumption. When filling microbiologically sensitive beverages such as apple spritzer, and continuously spraying with ECA water, we can lengthen production times and minimize the use of conservation agents."

People as a source of contamination

The final factor of course is the human component. For people are still one of the main sources of contamination in food and beverage production. As a result personal hygiene is given high priority in hygiene management. Hand washing and disinfection, cleaning and disinfecting shoes, working clothing and aprons, and tools, are just some aspects to be taken care of here. Visitors to **drinktec 2013** can find out direct from many leading manufacturers just how best to tackle this issue. The spectrum of solutions ranges from small hand-washing stations with washbasin, dispensers and hand soap to hygiene sluices in which a large number of operatives can carry out the necessary hygiene measures in a short space of time. A range of companies can supply the correspondingly cleaned clothing. In short: process hygiene has many facets. It's good to know that **drinktec 2013** will cover them all in full.

Further information: www.drinktec.com

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