Press release

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Data-driven production: how plant concepts and roles are re-conceived at Anuga FoodTec

Smart technologies on the Cologne fair grounds. Mechanical engineers become data partners

data are becoming a central factor of food production and fundamentally changing the role of plant manufacturers. From pure suppliers of machinery, they are increasingly developing into strategic partners for data-based production optimisation with clear added value. They are becoming service and integration partners, technology enablers, hygiene experts and innovation motors. To summarise: mechanical engineers are today key participants in the digital transformation. Anuga FoodTec shows who is concretely shaping this transformation from 23 to 26 February 2027 in Cologne.

Food production is continually developing into a smart and digitally networked industry. Artificial intelligence is making it possible to evaluate large quantities of data from networked systems, to more precisely control processes and design quality control to be more efficient. Automation, sensor systems and data analysis are thus becoming central components of modern production with a competitive advantage.

"Against this background, data-based technologies in production are increasing in importance for medium-sized companies“, says Roland Thiemann, Director of Anuga FoodTec. The international supplier trade fair will show how these developments can be realised in concrete terms in practice from 23 to 26 February 2027 in Cologne – from the use of modern sensor systems and automation through MES and cloud applications to AI-supported analysis and control systems.

Smart production begins with the sensor

The entry into data-based production takes place at the field level – with networked machines. Modern sensor systems today provide much more than classic measurement values. They register additional status data, enable self-diagnosis and communicate via standardised interfaces like IO-Link or OPC UA. In this way, production processes become consistently transparent and evaluable.

This is demonstrated, for example, in dairies, breweries or meat processing: process data from filling lines, temperature progressions in cooling chains or cleaning cycles of plants are continually recorded and linked with planning and quality data. Deviations can be recognised early on, system statuses evaluated more precisely and processes stabilised in a targeted fashion. Decisions are thus based increasingly on reliable data and provide an important foundation for using resources efficiently and sustainably securing production quality.

Anuga FoodTec
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Plant manufacturers become data partners

With increasing digitalisation, the role of mechanical engineers and plant manufacturers is also changing. "Data-based production goes well beyond the pure recording of machine data. Of decisive importance is the intelligent linking, interpretation and usage of this data along the entire value creation chain“, says Carola K. Herbst, Deputy Managing Director of the Competence Center Agriculture and Food of the German Agricultural Society (DLG).

Platform solutions, as presented at Anuga FoodTec, make it possible to merge heterogeneous data sources from machines, sensors and IT systems and incorporate them into meaningful analyses. The GEA Group thus offers, for example, solutions for the analysis of process and operation data, with which plant performance, energy use and product quality can be improved in a targeted fashion. Krones also trusts in networked systems that enable consistent transparency in filling and packaging lines and contribute to increasing complete system effectiveness. The Bühler Group also pursues a comparable approach: through the networking of machines and the evaluation of process data, new possibilities arise for the continuous optimisation of production processes, for example, in grain processing or chocolate production.

AI supports decisions in operation

Here, the focus is not on automation alone, but rather on the targeted support of skilled personnel. Production processes can be controlled more stably, reduce quality fluctuations and help contexts, for example, between raw material quality and final product, be better understood. "Of decisive importance is that companies can derive concrete action steps from meaningful data“, according to Carola K. Herbst.

The supporting programme of Anuga FoodTec takes exactly this as its approach and looks at these themes in greater depth. Under the motto of "Navigate Complexity. Smart. Safe. Sustainable.“, central questions of the industry are addressed and discussed further in lectures, so-called Deep Dives, and interactive formats like the Open Expert Stage. In keynotes and panel discussions, representatives from industry, politics and science debate fundamental questions of the digital transformation – from climate-neutral production through the use and risks of AI in industrial value creation extending to resilient production and supply chains.

Adaptive processes in practice

How data-based decisions can be realised concretely in practice will be demonstrated with current developments from applied research. Thus, adaptive cleaning is being advanced at the Fraunhofer IVV. The goal is to replace classic cleaning processes oriented to worst case scenarios with needs-compatible processes. With the help of optic sensor systems, the contamination status of the system is registered in real time: critical areas are more intensively cleaned in a targeted fashion, while less burdened areas are treated such as to conserve

resources.

The development shows: artificial intelligence in food production has left the phase of pure pilot projects and is finding its way into concrete applications. Anuge FoodTec in Cologne will show what potential and cautionary measures result for efficiency, quality and process security – from data analysis to direct implementation in production routine.

Koelnmesse – industry trade fairs for the food technology sector: Koelnmesse is an international leader in organising trade fairs in the field of food and beverage processing. Anuga FoodTec, ISM Manufacturing (formerly ProSweets Cologne) and ISM Ingredients are established, world-leading trade fairs, hosted in Cologne/Germany. In addition to the events at its Cologne headquarters, Koelnmesse also stages further food technology trade fairs with different sector-specific areas of focus and content in key markets across the world, including Brazil, Colombia, India and Italy. These global activities enable Koelnmesse to offer its customers bespoke events and leading regional trade fairs in a variety of markets, thus creating the foundation for sustainable international business. Koelnmesse is also ideally positioned in the field of food and beverages with its leading international trade fairs Anuga and ISM and its global network of satellite events.

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