

Automatically Individual



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ProLeiT and INDAG started their successful co-operation more than one year ago. Since that time, they have optimized numerous syrup rooms of different producers with sophisticated process engineering and automation components.

Non-alcoholic drinks are constantly gaining in importance. Nowadays, people want to lead a healthy life and nevertheless enjoy tasty drinks, and this trend of modern society provides the basis for a rapidly growing market which is subject to constant change. Variety is in great demand. In view of this development, the consistent automation of fruit juice production or syrup rooms is of primary importance – including the delivery of fruit or starting materials and flavors and even the labeling of beverage bottles. And beverage producers must be able to continually adapt their plants to consumer demands.

As a rule, the production of carbonated beverages and fruit juices follows different principles. Soft drinks are to a large extent produced from standardized ingredients with unvarying product properties, whereas most fruit juices, fruit nectars and fruit drinks are mixed from non-standardized fruit juice concentrates.

This means that a standardized mixing process is sufficient for the production of most carbonated or soft drinks. The properties of natural raw materials for juice production, however, can vary depending on the batch and origin. Varying acid and sugar contents require intelligent and flexible automation solutions which ensure constantly high product quality of instant drinks.

Shared knowledge is double knowledge

In order to structure and streamline this multitude of requirements and options, two specialists combined their know-how more than a year ago in order to form a successful team: ProLeiT and INDAG. As a plant manufacturer, INDAG provides technological and process engineering expertise. INDAG engineers have an excellent command of the most suitable production methods for many different product groups. And they have the required know-how to streamline plants and technological sequences for the efficient manufacturing of special products. INDAG therefore provides a reliable hardware basis for the sophisticated programming of plants by ProLeiT specialists. ProLeiT divides the production sequences within a plant into reusable software modules



(referred to as "operations") which the customer can combine to specific recipes with parts lists. For the production of beverages with the required quality, the system takes into account the parameters of the corresponding raw material batches. Furthermore, a fully automated plant includes incoming goods receipt, the interfacing to the quality control system and also the option to control production orders via a higher-level ERP system. Materials management is an integral part of the ProLeiT batch system: The use of all raw materials and ingredients is logged throughout the entire production process in order to ensure that each product with all ingredients, and also the production process itself, can be traced back at any time.

Each instant drink is based on a specific recipe which specifies the ingredients and their different proportions. The process parameters smoothly influence the realization of the recipe, because whether the juices or lemonades become tasty drinks in the end not only depends on their ingredients, but also on how these are handled.

At the heart of the syrup room

All ingredients are fed into the syrup room and mixed properly for the production of instant drinks. It is therefore the very heart of beverage production. From the raw materials store to the transfer to the filling lines, the dosing and mixing of ingredients in the syrup room is controlled and monitored.

Since the entire process chain of centralized, automated production is oriented towards careful and efficient beverage processing, innovative process technology should always be the focus of attention when planning a syrup room. The avoidance of unnecessary interfaces increases product quality, contributes higher efficiency in production and prevents product losses. Thanks to their modular structure, INDAG plants can be flexibly extended to prepare for future capacity increases and to allow for the production of new types of drinks.

Syrup and instant drink mixing plants, pasteurization plants or even CIP systems: INDAG is a provider of the entire process technology required for beverage production, including technological consulting. Through the successful cooperation with the ProLeiT automation partner, customers are provided with solutions which not only fulfill modern product requirements, but are optimally prepared for the production of future innovations.

Safety and reliability – automatically

The special Batch iT process control system designed by ProLeiT provides numerous benefits with regard to the control recipe. The ingredients of a mixture, the raw material quantity and the production methods are not processed as a unit, but independently of each other. The system distinguishes between the so-called parts list and the process description. To start an order, the plant operator selects the parts list. Afterwards, the system shows related process descriptions. The linking of the correct list and description results in an executable control recipe processed by the controllers (PLCs).

This separation of the material and process levels is the prerequisite for the higher-level ERP system to dispatch parts lists to the ProLeiT Batch iT. As soon as the order has been processed completely, the consumption and output values are returned to the ERP. However, it is essential that the recipe control recognizes each material with all its important parameters, as well as all dosing organs and dosing paths. The correct accounting records, which are indispensable for tracking, can be created only afterwards.

Before connecting the raw material containers to the dosing station, they are clearly identified via WLAN scanners in the syrup room in order to prevent confusion. The residual materials management monitors and controls the current raw material inventory and ensures the complete processing of even small residual quantities.

The batch sizes are calculated in such a way that the corresponding raw material containers are empty when the batch has been completed, i.e. containers with residual quantities from the current order are returned to the store in order to be used specifically for the next mixture of the same product. The interruption – or even the cancelation of production – due to ingredients running out of stock therefore belongs to the past. Scanners and barcodes are efficient means for the prevention of allocation errors.

Benefits for the customer

ProLeiT and INDAG started their successful cooperation in June 2007. ProLeiT is a specialist for open process control systems with a highly technological background. The plant and machine manufacturer INDAG invented the Heidelberg Mixer, i.e. the first semi-automatic, volumetric syrup mixing plant, more than 30 years ago. Based on more recent models of the original invention, INDAG is still designing and distributing bestsellers.

For beverage producers, plants constructed by INDAG and automated by ProLeiT provide numerous advantages: superior quality assurance, consistent batch tracking in compliance with strict legal requirements with regard to product safety and documentation, as well as cost reductions through the intelligent utilization of raw material. To date, seven companies have benefited from this sophisticated approach. In the past twelve months, four major German mineral water producers have profited from the sophisticated offer provided by the cooperation partners and are well satisfied with their new INDAG production plants automated by ProLeiT. The linking with higher ERP levels, such as Prisma or Navision, and also offline PDA, such as the acquisition of characteristic values, are included in the project scopes. Further projects, e.g. the construction of an entirely new syrup room for juice mixing, have been realized with renowned customers in South Africa, Poland and Egypt.

ProLeiT process control systems installed on INDAG plants allow for the process automation of the future and also ensure optimal plant utilization. For more detailed information about the benefits of this sophisticated concept for beverage producers, visit us at the Brau Beviiale in Nuremberg in November 2008 and at the Anuga Foodtec in Cologne in March 2009. Experts from ProLeiT and INDAG will be pleased to welcome you to discuss special requests – and also the requests of distinct individualists among beverage producers.

Further information on:
www.proleit.com