New batch system for syrup room at Adelholzener Alpenquellen – ProLeiT optimizes production processes and implements standardized interfaces for MES connection

By converting the facility to the Plant Batch iT process control system, ProLeiT AG is optimizing the process options available for syrup production at Adelholzener Alpenquellen. From processing remaining quantities to integrating scanners and setting up connection to the MES solution – the new batch system is mighty impressive.

The mineral springs 'Adelholzener Alpenquellen', located in the Bavarian town of Chiemgau, are some of the largest and most famous in Germany. The company of the same name fills over 600 million bottles with spring water each year under the Adelholzener and Active O2 trademarks: mineral and medicinal water, but also various soft drinks. The mineral spring products enjoy a strong market position in more than 20 countries.

Sustainability has always been a major part of Adelholzener. After all, Adelholzener Alpenquellen GmbH and the spring has been owned by the Congregation of the Sisters of Charity of Saint Vincent de Paul since 1907. The preservation of creation is a major concern of the religious community and thus also of Adelholzener. Therefore, roughly 80 percent of the company's bottles are returnable. Adelholzener's PET returnable bottles can be refilled up to 15 times. All rejected bottles are shredded and used fully to produce new Adelholzener PET returnable bottles. Further, returnable glass bottles can be refilled up to 40 times before being fully recycled.

The IT environment of the syrup plants used at the Siegsdorf site to produce spritzers, lemonades, juices and isotonic beverages had become outdated over time. The hardware and the operating system no longer met the current requirements for stability and reliability. As a result, the company's management decided to fully replace the hardware and software. The hardware component strategy is designed and implemented in-house – ProLeiT AG was commissioned with the task of migrating the software as a new process control system in June 2018.

Production facility in Siegsdorf

Challenges completed successfully

The project experienced its first hurdle prior to implementation. Due to the age of the plant, the documentation was incomplete. In close co-operation, a program description was prepared based on the experiences of Adelholzener and ProLeiT employees. "The main challenge was, therefore, that we had to replace the existing programs and the data of the old control system on the basis of our own experience," says Andreas Bürger, Project Manager Dairies and Beverages at ProLeiT. "Other demanding tasks resulted from the fact that we had to connect our Plant Batch iT control system to the higher-level MES system," explains Andreas. Replacing the old control system required a great deal of input,

Production of the Adelholzener and Active O2 trademarks

expertise, and time. The syrup room incorporates 21 container spaces, 12 dissolving tanks and 6 pairs of preparation tanks boasting a volume of between 2000 and 3000 litres. There are also 14 basic syrup tanks and 8 sugar tanks into which the 3 different types of sugar used can be filled. A total of 7 filling lines are supplied by this syrup room.

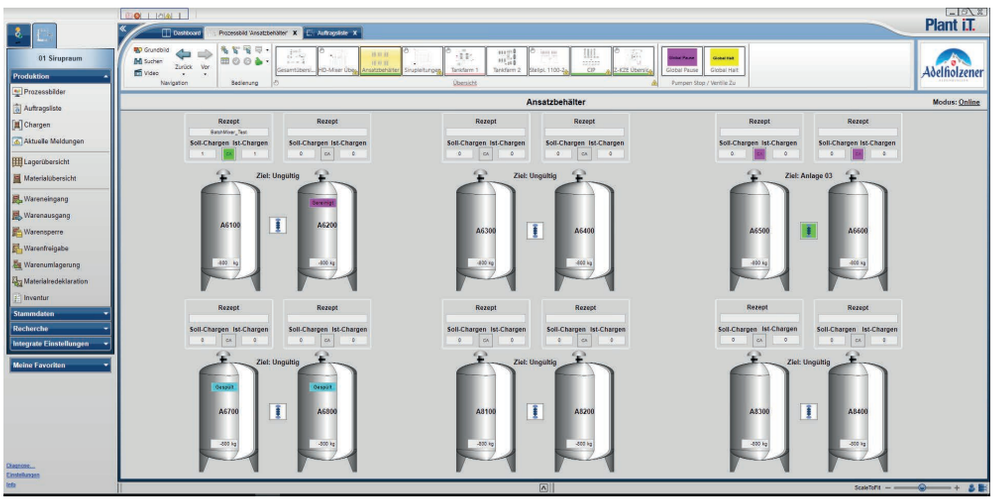
INFO

Company	Adelholzener Alpenquellen
Sector	Beverages
Location:	Siegsdorf
Country:	Germany

The special requirement for a batch system is the production of syrup for spritzers and carbonated beverages. In this case, the syrup is mixed fully automatically using recipes. Recipes and production orders are transferred in advance directly from the Manufacturing Execution System (MES).

Efficient production processes

The significantly enhanced range of setting options and the numerous functions of Plant Batch iT optimize not only the work of the operators but also the complete production process. Andreas Bürger: "The highlights of our solution for Adelholzener are its easy handling, scanner integration, simple order management and, of course, our Visu-Recorder. But remaining quantity processing was also an important issue for the customer. Quite often, for example, the quantity of a certain basic material is at some point no longer sufficient in a production order with several batches of one syrup. In these situations, the most important thing is to use up the most expensive raw material in one batch. This is where Plant Batch iT comes into play: As our software is able to automatically calculate the respective batch down to this remaining quantity, thereby ensuring the most efficient production process possible."



Plant Batch iT – process image of the preparation tanks

Greater speed, greater efficiency and, above all, a better overview of the production processes– this is also achieved by the extended visualization options offered by the new process control system. “Recipe management, the detailing of bills of material, the entire materials management chain, including the booking of consumed raw materials: Plant Batch iT ensures significantly improved overall transparency when it comes to monitoring and controlling processes,” explains Herbert Schrobenhauser, Project Manager at Adelholzener. “This continues to have a positive effect even after the actual production process has been completed. In terms of batch tracking, we are able to determine specifically which raw material has been processed in which product. In the past, this always involved quite a lot of people and paperwork. We are therefore already very close to our goal of paperless production.” Moreover: “The MES connection from ProLeiT enables seamless vertical integration for the production orders and the raw materials employed therein.”

A further advantage for operators is the new visualization in direct connection with the – also new – recording function Visu Recorder. This add-on enables the on-screen recording and – if necessary or desired – tracking of all processes. As a result, errors that occur in process sequences can be systematically investigated and their causes detected. “Further, the recorder is ideal for training purposes,” claims Schrobenhauser. “For instance, we can show new employees how certain processes work and how they can be controlled in a realistic setting.”

Project completed on time

Implementation of the new software at Adelholzener began in the spring of 2019 and was successfully completed by a team of five ProLeiT employees at the beginning of April 2019. Andreas Bürger: “In our industry, we are used to production running 24/7 and we have to set up the programs on the fly without causing any downtime: But in this case the conversion time was exceptionally short. In order to be able to keep to our schedule and to disrupt ongoing operations as little as possible, all the production processes were simulated in a FAT together with the customer at ProLeiT’s headquarters in Herzogenaurach. This allowed us to ensure commissioning commenced with excellently prepared software and to complete it successfully on time as planned.”

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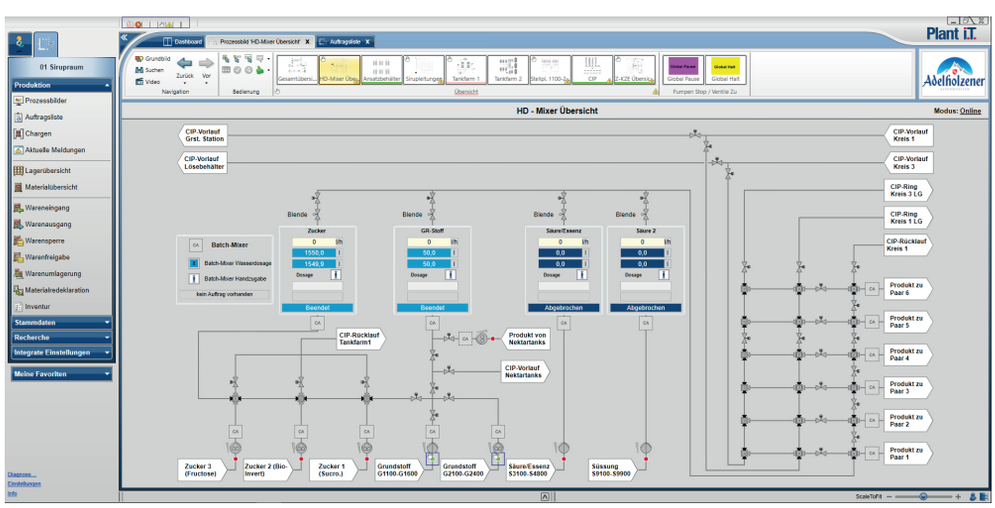

Plant Batch iT – process image of the batch mixer