Plant iT enables the creation of individual recipes with full traceability

How to flexibly adapt the production of salsa sauces, mayonnaise and tomato ketchup to market demands

The long standing Spanish company Ybarra, a specialist producer of olive oils, vinegar products, mayonnaise, tomato ketchup and salsa sauces, opened a new production facility in Dos Hermanas, near Seville, in 2008.

Plant iT from ProLeiT was chosen as the process control system for this new production facility. In addition to the intuitive user interface, the outstanding advantages of Plant iT include its comprehensive batch traceability for enhanced quality assurance and its exceptional level of flexibility in terms of recipes. Due to the flexible – depending on the product – combinable process steps, the operator can quickly parameterize new recipes: without any loss of consistency in process control, quality or traceability.

The company founded by D. José María de Ybarra y Gutiérrez de Caviedes in 1842 has always strived to achieve the highest quality in the production and marketing of food products. Ybarra is also a pioneer in the production of mayonnaise and sauces at its facility in Dos Hermanas. The company's philosophy is to provide a swift and efficient response to customer demands. The investment in the plant expansion in 2008 was therefore not only directed at doubling capacity, but also had the goal of achieving greater flexibility and versatility in order to offer customers various types of mayonnaise, tomato ketchup and salsa sauces within a short period of time.

In order to meet these production targets based on flexibility and adaptability, the company has chosen a plant configuration with process steps which are fully automated via the Plant iT process control system from ProLeiT. In addition to comprehensive traceability for transparent quality assurance, the main requirement for the process control system was to map the system-specific flexibility with regard to automation and the creation of new recipes by the operator at the standard user interface. ProLeiT skilfully managed all of these challenges with a fully automated solution for the numerous process steps - from initial dosing to final filling applications.

"Plant iT resolved our complex requirements in the best possible fashion."

"A particular challenge of the project was the integration and coordination of the batch process in conjunction with continuous processes. The interaction of these two process types was automated perfectly with Plant iT."

Joaquín Ruiz Esquivel,
Technical department manager,
Ybarra

Flexible sauce production

The process for sauce production on the basis of a dispersion or emulsion combines continuous and batch-based process segments. Depending on the recipe (parameter and process) of the respective product, the plant can simultaneously operate in

INFO

Company: Grupo Ybarra
Sector: Food
Location: Dos Hermanas, Seville
Country: Spain

Brief info
The company was founded in 1842 and is one of Spain's best known food producers. The product name Ybarra has always stood for high quality olive oils. Today, the extensive range of Grupo Ybarra also boasts other foodstuffs, e.g. vinegar products, mayonnaise, tomato ketchup and salsa sauces.

Requirements
- Full automation and batch traceability (in accordance with EU 0178/2000)
- Reduction of set-up times
- Quality assurance
- Independent modification of recipes

Solution/Product: Plant Batch iT
Platform: Siemens
No. of server: 1 + 1x terminal server
No. of PLCs: 1x 416-3
No. of clients: 2x workstation, 2x IPCs

Implementation
ProLeiT AG / ProLeiT Iberia S.L.U.

Project management
Andreas Rösch, ProLeiT AG
Juan Capel, ProLeiT Iberia S.L.U.

each segment with a different combination of process steps and synchronization points of the various sequences (production segments). It is therefore possible to produce different products, e.g. dispersion or emulsion, at the same time and in the same plant during the various consecutive production stages or to partially clean the plant during production.

A section of the new production line

This complex system with its process steps and material routes was structured as part of the batch modelling and fully mapped in the process control system Plant iT from ProLeiT. Plant iT thus allows the production of all Ybarra recipes at just one plant. It is also possible to simply adapt production to new as well as seasonal favourites. This provides Ybarra with the decisive competitive advantage of being able to quickly respond to market demands with new recipes and flavours as well as changed formats, while guaranteeing the best possible quality.

"Our decision to replace the existing control of the pasteurizer and to fully integrate the plant in the Plant iT control system during the commissioning phase was one of the most important and successful improvements. This allowed us to realize the necessary product-dependent fine adjustments of the pasteurizer, while providing a high level of product flexibility and increasing the quality of our products," claims Joaquín Ruíz, technical manager, Ybarra.

Challenge - Traceability

The process automation faces the extraordinary challenge of a wide selection of recipe-dependent products and complex process steps as well as material routes. At the same time, the process control system must fulfil all the requirements in order to not only control the complex cleaning procedures, but to also provide complete and transparent traceability. Plant iT once again proved to be the ideal process control system which not only meets all the system operator's demands regarding safe operation, process clarity and flexible order processing with rapid product changes, but also covers all aspects of a comprehensive batch tracing service.

Creating recipes at the standard user interface

Thanks to the design of the process control system Plant iT, system operators can create new recipes or alter existing ones

Plant iT user interface

after a brief training session even if they lack higher level IT skills themselves. This provides system operators with the opportunity to quickly react to market demands without having to carry out programming. Joaquín Ruiz was extremely impressed with the simple handling of Plant iT from the very start.

"Plant iT enables us to change or adapt the production process without altering the PLC program. The Plant iT editor allowed us, for example, to independently map and create a newly developed sauce (which has since been launched) in Plant iT with a new production process and new recipe values via simple configuration and parameterization. All this was achieved without outside help and without modifying the PLC program," says Joaquín Ruiz.

The secret is "parameterizing instead of programming". This means that recipes are no longer programmed. The details of a recipe are stored in a parameterized manner in Plant iT instead. A unique feature is that the ingredients of a mixture, the quantity of raw materials and the parameters for the production process are mapped and processed separately as parameters.

Automation with Plant iT is thus not constrained by rigid programming, as full parameterization provides operators with the necessary flexibility to adjust recipes, create new recipes and modify production processes. All the parameterizations are divided into so-called bills of materials for the product and procedure descriptions for the process. At the start of a mixture recipe, the operator selects the required bill of materials and is then provided with a suggested stored procedure description. This link creates an executable control recipe that is processed by the control unit.

Operators can therefore create new recipes or, if necessary, adjust existing ones via the standard user interface. The outstanding flexibility of Plant iT ensures that not only the recipe but also the sequence of the individual process steps of the procedure can be varied via the user interface.

Ybarra production facility in Dos Hermanas

Summary

Plant iT provides system operators with the highest level of flexibility to quickly respond to market demands. Considerable cost and time savings are the direct result.

Authors:
Dipl.-Ing. (FH) Andreas Rösch,
Ing. técnico Francisco Gómez de la LLera

PROVEN CUSTOMER BENEFITS

- Reduced downtimes
- Increased flexibility for temporary product changes
- Training and transfer of process know-how to staff
- Individual creation of new recipes in the control system
- Achievement of and adherence to quality standards for contract filling

Plant iT
Process control technology. MES included.

YBARRA

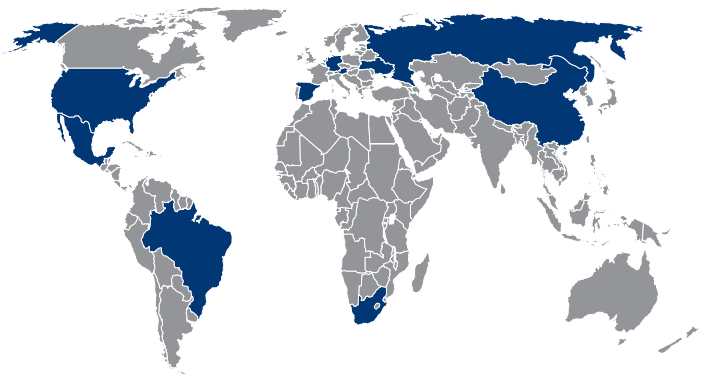
ProLeiT AG

Einsteinstr. 8
91074 Herzogenaurach
Germany

Phone: +49 9132 777 0
Fax: +49 9132 777 150
eMail: info@proleit.com
Internet: www.proleit.com

ProLeiT Group

Dallas/US – Enschede/NL – Johannesburg/ZA – Kiev/UA – Mexico City/MX – Moscow/RU – Piracicaba/BR – Seville/ES – Shanghai/CN – Vienna/AT



Legal notice

The *application profile* is developed and published by the marketing department of ProLeiT AG.

Editor-in-chief: Adrian Veit
E-mail: adrian.veit@proleit.com

The *application profile* is for free and available in further languages on the website www.proleit.com.