

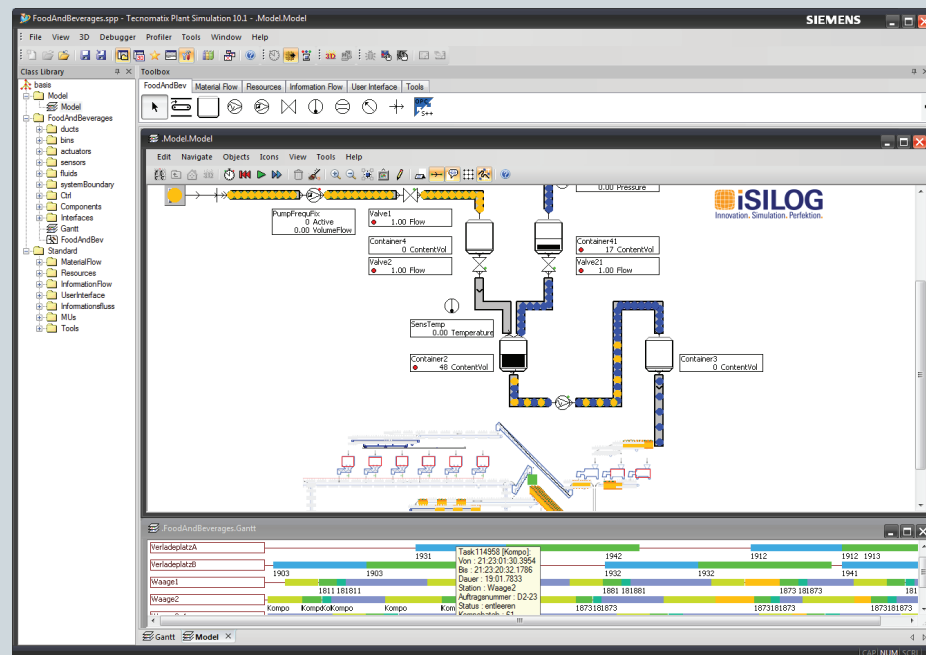
Tecnomatix Plant Simulation for the food and beverage industry

Benefits

- Identify and fix bottlenecks
- Develop optimal cleaning strategies
- Define quantified measures to optimize output up to 30 percent
- Invest in the right equipment
- Determine feasible and robust production plans
- Secure product quality by a stable and harmonized production flow
- Minimize discarded material

Summary

Seasonal demands, high product turnover, high flexibility for new products and multi-variety packs, as well as quality and freshness are among the challenges in engineering for food and beverage production plans. With highly automated sophisticated technologies and expensive equipment, it is particularly important to ensure that manufacturing processes meet current and future needs.



To manage these challenges, simulation is the tool to implement fully validated new processes that are “right the first time.” Using simulation, you can determine the most cost effective and future-proof planning solution. Alternate planning scenarios can be compared to select the best balance between performance, flexibility and investment. By using simulation, it is easy to identify bottlenecks and to plan the best strategy for increasing plant output.

TECNOMATIX

Answers for industry.

SIEMENS

Tecnomatix Plant Simulation for the food and beverage industry

Simulation of food and beverage production processes helps you answer the following questions:

- What are the existing bottlenecks at the plant?
- What are best strategies (e.g. cleaning, changeovers, batch sizes, production planning and control) to increase output?
- What are the existing limits of the plant regarding expected future products and demands?
- What is the best approach for harmonizing customer demands, incoming goods, batch sizes and packaging lines?

In complex systems with large interdependencies such as in food production plants, it is nearly impossible to manually estimate how the system will perform. That is why simulation is an essential planning solution for a successful future.

iSILOG has developed an additional solution for the food and beverage industry based on Tecnomatix Plant Simulation from Siemens PLM Software. The solution includes industry-specific objects such as tanks, mixers, pipes, grinder, filling stations, packing, palletizing and storage. Using these standard objects makes it easy for you to model an existing or planned production process in the food and beverage industry.

The iSILOG solution breaks down the borders between continuous batch processing and discrete production processes common in food and beverage production. It covers special functions such as cleaning, batch- and recipe-management. It makes it possible for you to model the complete flow, from incoming goods over batch processing in tanks and special equipment, filling, packing and palletizing up to storing the finished goods in a warehouse. Plant Simulation provides interfaces to Excel, XML, data bases, etc. to integrate the simulation into an existing software environment. Plant Simulation can even help you cover the complete lifecycle of food and beverage production plants. From designing the manufacturing plant, through virtual commissioning of production control to the solution helps you advance online production planning and scheduling application.

This food and beverage solution can be applied in all areas of food production for products such as:

- Brewing, soft drinks and milk processing
- Fresh and frozen food
- Instant soup
- Snacks and candy
- Animal food
- Agricultural raw materials

A model based on the food and beverage solution can vary from a single production line to a complete plant including raw material intake and final product storage. The simulation model compasses an ani-

mated and reproducible production flow. For example, the WIP level in the tanks will decrease depending on the production of the connected filling line. The animation allows you to follow the material flow and to observe tank levels, orders, equipment status and enhanced statistics like tank levels over time or Gantt charts for all equipment with detailed order information. Simulation serves as communication platform for all parties on existing or planned manufacturing system behavior.

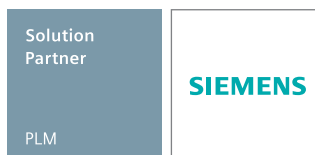
Use cases

Using this solution, one manufacturer was able to reduce by one the number of tanks required, reducing their investment by 400,000 Euros. Other companies have tracked such improvement as:

- The ability to improve service reliability and due data quality from 85 to 100 percent without any additional investment
- A 70 percent reduction in onsite commissioning
- Reduced energy consumption by more than 5 percent, leading to reduced costs and higher profitability

Solution specific objects:

- Tank
- Mixer
- Pipes
- Grinder
- Filling station
- Packing
- Palletizing
- Storage



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