

## Oranim Angel Bakery, Israel

### *State of the Art Production Management System*



The Oranim bakery, a member of the Angel Bakeries group since 2001, produces and markets bakery products mainly in the north of Israel and specializes in organic bread and rye breads. The bakery's main line of products is the "Angel Organic" range. This line of organic breads is free from chemicals in all phases of wheat cultivation, storage, milling and breaking. There is no use of pesticides during cultivation and storage of the wheat and no preservatives are used during milling and baking. Currently, the bakery runs 9 production lines producing specialty breads, rolls, pita breads and many other bakery products.

Substituting a Wizcon HMI software running on an OS2 operating system, the AFCON SCADA solution from AFCON Control and Automation has complete control over every stage of the production line. It continually monitors the bakery's supply stock and updates the ingredients' quantities during the production process. On the user's demand, it generates production reports containing dozens of filtering options to choose from at the operator's discretion.

Producing bakery goods starts with the operator selecting a recipe from a database of more than 10,000 recipes stored on a Microsoft SQL server and assigning it to a specific production line. The operator queues the recipes for each line according to the daily production plan and sets the number of kneadings per recipe. Next, the AFCON SCADA solution calculates the expected number of loaves and the estimated time and quantity of ingredients needed to complete the task.

The operator may change any of the ingredients' quantities at any stage during production to adjust to the changing climate state.

The right amount of ingredients to be added per kneading must be calculated to minimize material waste. Using the AFCON SCADA Solution the operator is able to update the quantity of ingredients to be used throughout the entire plant by the simple click of a button.

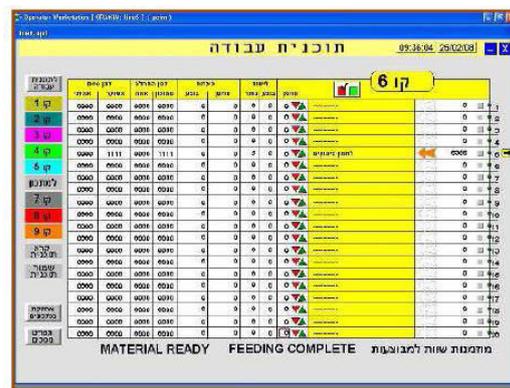
# Case Study

Recipes are backed-up in the main database and can be recovered at any stage. Using the AFCON SCADA solution, the operator can roll back a recipe to a stored copy of a recipe and insert it into the production queue. As soon as the production plan is completed the recipes are loaded into the Simatic TI PLC according to their place in the queue and production begins immediately.

To ensure traceability and accountability every user action is logged, from the moment the user logs-in to the system. To enforce a strict security policy users are assigned security privileges that either grant or revoke access to certain sections of the system.

To meet production goals, the bakery heavily relies on accurate measurements of ingredients' quantities. The AFCON SCADA solution constantly adjusts and updates the bakery's stockpile of ingredients during and after each kneading and weighing.

Based on each recipe's necessary quantities, the AFCON SCADA solution calculates the consumed ingredients and updates the quantity of each container. It is also able to record and adjust the ingredients that were manually added during production, for example, sesame grains, raisins, coriander and more.



To maintain a flawless production process, the bakeries stockpile is continuously refilled by trucks. Every truck is issued a working order that allows the tracing back of every shipment to its source. Once the work order is received, the system automatically updates the available ingredients.

The AFCON SCADA solution produces dozens of on-demand reports concerning every aspect of the production process. Reports are filtered by production line, production date, and time, recipes used, quantity of ingredients consumed and more.

Further, using the AFCON SCADA solution reports, operators can review faults that occurred during production and filter the reports by the duration of fault, frequency, location, etc.

## Contact Info

Visit us at: [www.afcon-inc.com](http://www.afcon-inc.com) email: [maketing@afcon-inc.com](mailto:maketing@afcon-inc.com)