

In house service

THE ISRAELI RETAIL CHAIN SHUFERSAL HAS TWO BAKERIES IN THE VICINITY OF TEL AVIV SPECIALIZING IN PRODUCING FROZEN BAKED GOODS

+ The history of bake-off stations in Israel goes back to the early 1980s. At that time, small shops and chains mainly sold sweet fine bakery wares. In 1985, the retail chain Shufersal entered this business field, firstly outside their own supermarkets, and later in their markets. Today, almost all of the 230 Shufersal supermarkets have their own bake-off stations which are supplied by two company-owned production firms. The logistics are handled completely by Shufersal. Gidron, the subsidiary in which both bakeries are combined, delivers the products three to four times a day to the neighboring central storage of the mother company.

2006 was a year of expansion for both bakeries which have combined sales of about 30m Euro. In September 2005, Shufersal acquired the third-largest supermarket chain in Israel which subsequently also became a Gidron customer. As a result, Gidron's sales boomed by almost 14%. 30% of Gidron's sales are generated within Israel but outside of Shufersal with desserts produced for international brand producers like Unilever, pizza bases for pizza restaurant chains and other products sold under a different name. Export to the US and Europe accounts for about 3m Euro in sales. At the latest trade show in Amsterdam, Gidron exhibited a range of kosher products destined for export.

250 employees work at the two production sites, Saharon in Holon (fine bakery wares) and Dagon in Petach-Tikva (bread/rolls). Holon has a one-shift operation. There are 12 additional employees par-baking the bases for dessert pieces

at night. Dagon operates in two shifts. Both production sites have been certified as kosher by various religious organizations. Their products are also sold in special stores for Orthodox Jews.

The Saharon production occupies two floors. On the top level, muffins are produced which are delivered ready-to-eat to the stores. The current top sellers from this product range are chocolate muffins filled with liquid chocolate. The dough is made in Tonelli mixers. The dough is deposited semi-automatically into paper cups which are then transported in groups of 12 on trays on a double rack through a fully automatic Dijkstra oven and cooler. A lot of manual work is required on the line for dessert pieces. Izik Chakak, plant manager of Gidron Saharon and in charge of quality control explains: "We have a large selection of dessert pieces. Therefore up to now only semi-automatic processing has been profitable to us."

The largest product varieties are produced on the ground floor where a total of four lines process laminated doughs, meticulously separated by dairy and non-dairy. Key products are filled and plain croissants, Rugalach (traditional crescent rolls with a chocolate-type filling with a two-colored pattern), Bourekas with salty Quark filling and several other Danish and puff pastry products with sweet and savory fillings.

A Rondo Doge L-shape Block line is used for puff pastry production. The line consists of a lifter for the mixer bowl, a

++ figure 1



++ figure 2





stocking hopper to cut chunks of dough, and an OSCAR zero stress dough band former. In the center of the dough band, a continuous strip of vegetable margarine is placed, produced by a fat pump which is located in a separate air-conditioned room. Two motorized folding belts close in the fat band, producing a dough band with one fat layer inside. A satellite head with 16 top rollers reduces the thickness of the dough band. A folding station produces the first 8 layers. A second satellite head with 2 bottom rollers (Rondo Doge patent) again gently reduces the thickness of the dough band and a guillotine cuts the pieces. These pieces are manually folded (book-fold). The puff pastry blocks now have 32 layers. When the blocks are put on the infeed belt of the Orbital line, they are shingle-stacked in order to get a total of 64 layers.

One of the advantages of working with a Block line is that the puff pastry can rest before further processing. The capacity of the Block line is 2.5 tons per hour; this is sufficient to feed the four production lines. Another advantage is that one part of the pastry can be used on the two lines producing non-dairy products, and the other part on the two lines producing dairy products.

On the dairy side the production lines consist of older Rondo-Doge Orbital lines (these are the machines for final sheeting and feeding the make-up lines) and a Rondoline with a Compactline make-up table.

On the non-dairy side, there is a Rademaker croissant production line with a capacity of about 10,000 pieces per hour and a state-of-the-art industrial Rondo-Doge production line, composed of an Orbital line and a Topline.

The drive components of both the Block line and the Orbital line have servomotors and the latest PLC controls. When changing from one program to another, the parameters are automatically set. This means, only a fine tone can be heard when the servomotors are adjusting the roller gaps. A regular quality is guaranteed.

On the control board of the Topline, the important information is displayed in Hebrew, making it easy also for the non-English speaking staff. A versatile Rondofiller is used for depositing the filling. The guillotine of the Topline is a mechanically driven high speed guillotine with a travelling sledge, allowing work with up to 130 strokes per minute.

All products are collected at the end of the line and placed manually on perforated and film-coated cardboard trays in rack trolleys. These are transported through the cryogenic freezer and then packed and moved on to the central storage. Noam Pelag, General manager in Holon, has already planned a 1.5 t spiral freezer that will continuously freeze the output of the two dairy lines and a 2.5 t spiral that will freeze the output of the croissant line and the Topline has been ordered from Vulganus and will be installed in August 2007. The freezers were designed by Vulganus to allow three



++ figure 3



++ figure 4

++ figure 1
Gidron offered products like this kosher frozen plaited loaf for the end user at the latest trade show in Amsterdam

++ figure 2
Flyers distributed to households by Shufersal, the mother company of Gidron, promote amongst others baked goods from the bake-off station supplied by Gidron. The finished packs are mainly from other suppliers

++ figure 3
Launched in 2007: a small range of sourdough bread which is popular mostly among German and Russian immigrants, but is clearly priced higher than standard products

++ figure 4
Manual plaiting of sweet loaves



++ figure 5
Rondo Doge folding unit

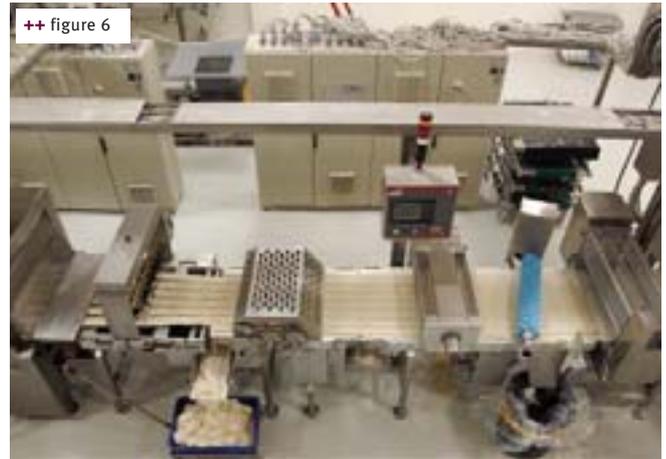
shift operations where from time to time one evaporator is defrosted while the others are in operation. Rondo Doge will be designing the feeding of the freezers from all lines automatically and Noam Pelag is now trying to automate the packaging. No decision has been made in this respect yet.

In Petach-Tikva, the production also takes place on two levels without problems with restricted space because about a year ago some storage and administration areas occupied up to then by Shufersal were transferred to production areas. The production is supplied with the required amount of flour from four 20 t inside silos and one 50 t outdoor silo. The top floor houses

+ one pita line fed by a back-tech Bawaria; the intermediate proofer, sheeters and panning equipment were made by Israeli companies. The pita pieces are frozen and also baked in the supermarket in a very small tunnel oven (1 m length), made in Israel



++ figure 7
Dijko travelling oven for muffins



++ figure 6
Bird's eye view on Rondo Doge ciabatta line

- + a long moulder for rolls with a Tewimat divider-rounder followed by an intermediate proofer. The Boma drum moulder is highly praised because it first sheets, then rolls the dough up and finally presses the strand again
- + a bread line which produces round and square breads
- + an older Mecatherm line as well as
- + a baguette line by WP-Haton; both are used currently for the production of plaited loaves as well as
- + a Hydrovoima sheeting plant on which pizza bases for a restaurant chain are produced.
- + A foreigner in the department for large baked goods is the automatic doughnut line. With an hourly capacity of 4,000 pieces, five to six million doughnuts are produced by Gidron for the Hanukah season and sold within one week.

The new equipment is located on the ground floor: a double bagel line feeding a Vulglanus spiral freezer, a large Mecatherm line for dough make-up for raw frozen baguettes ▶

Kosher

Whoever wants to buy kosher food in a supermarket pays attention to the respective seal on the products. Use of these seals is authorized by different religious organizations based on frequent controls. They distinguish themselves by the strictness with which they apply the Jewish dietary laws (kashrut). These laws do not only describe the type of raw material used for food – for example meat from pigs is not allowed and only such animals which live in the water and have fins and scales may be eaten – but also the type of preparation. Dairy products and meat products must not be mixed, eaten from the same plate, or produced at the same production line. For food eaten on religious holidays, even stricter rules apply. First of all, the rules provide for a high hygiene level. Flour must only be used when freshly screened. The screen must be cleaned daily, even in industrial bakeries. The high hygiene level of kosher food has led to an internationally increasing demand for these products and not only by religious Jews. +++

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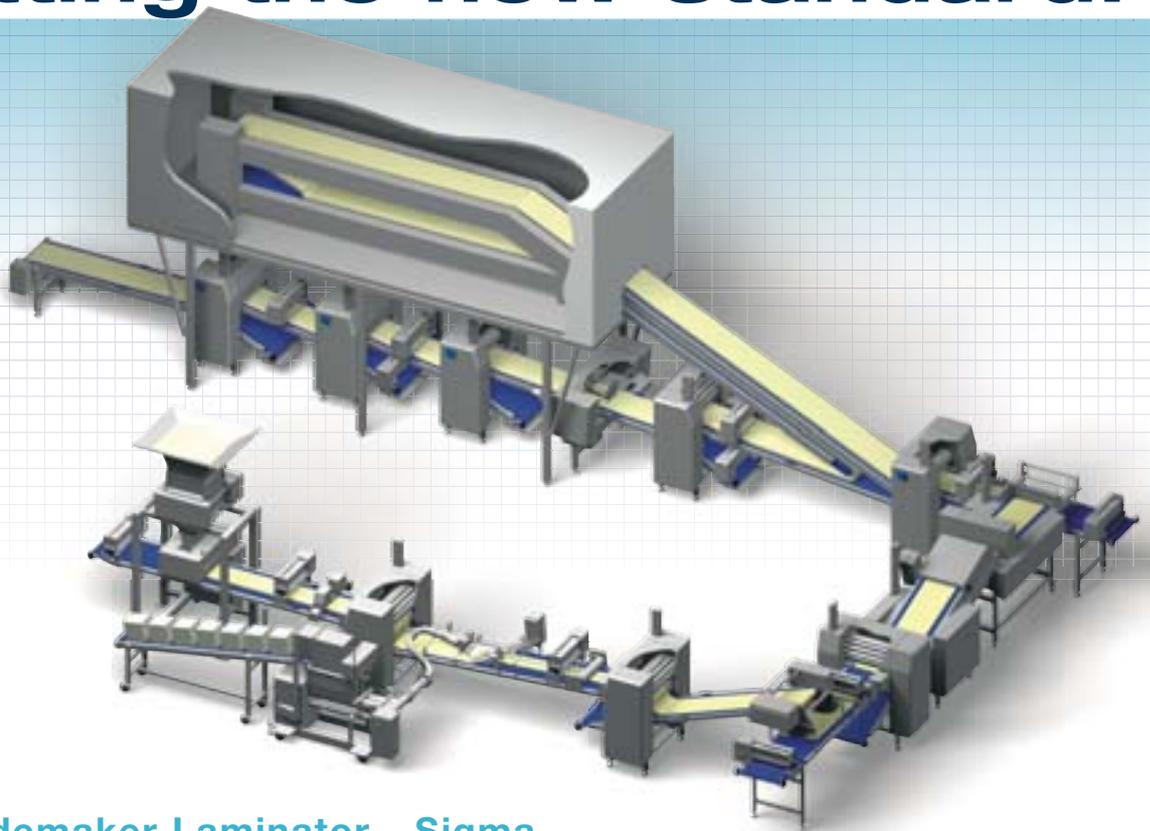
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Rademaker



++ figure 8

++ figure 8
Manual muffin handling



++ figure 9

++ figure 9
Automated baguette production on a Mecatherm line

(5.000 pieces per hour) and baguette rolls which will soon be extended by a proofing and baking station for the production of par-baked goods; a thermo-oil multi-deck oven by Daub which is used for traditional par-baked breads, the latest product range at Gidron, as well as for a small selection of sourdough breads popular amongst German and Russian immigrants, but much more expensive than the standard bread which is sold in Israel at a federally set price of 3.54 shekel/750 g bread (corresponding to about 0.65 Euro) and 5.05 Shekel (0.9 Euro) for sliced bread. Boris Shtirmer, Dragon's plant manager: "Sourdough breads are still a small segment. Our "light" varieties are currently becoming increasingly popular. These breads contain a much higher amount of dietary fiber than common white bread. These products are considered to be healthy and low calorie. At the same time the fibers bind water which prolongs the fresh-keeping period. The machinery in the new areas is supplemented by an upgraded Rondo Doge ciabatta line to produce high quality pizza bases. The key part of the line is

the patented zero-stress dough band former OSCAR. From the stocking hopper, chunks of dough fall into the hopper of the OSCAR. Two hexagons gently pre-form the dough. Two flour dusters and belts feed the flour to the rollers, preventing the dough from sticking. A thick dough band is then formed by two large rollers with grooved surfaces. Two motorised lateral compressing paddles bring the dough to the required width. A satellite unit with 8 idle rollers and two bottom rollers reduces the thickness of the dough band once more very gently and without applying stress on the dough. The dough band is then cut in lengths by discs, spread by a diverging system which separates the different products across the belt. This station also has an option for oil spreading and seeding for the production of foccacia. These products will either be frozen continuously in the Vulcanus freezer or automatically panned on trays for par-baking. The doughs for the bread, ciabatta, and baguette lines are produced in six Hydra Elastic Force mixers by Sancassiano. This type of mixer is equipped with mixing arms instead of

New food trend in Israel

This year, Israel has seen the start of a new trend. Small tortilla shops are selling freshly baked tortilla rolls made from frozen dough balls. The dough is thawed in the shops, press to tortilla shape with a manual tortilla press and baked on a hot grill. Then they are filled and sold.

Gidron is a major supplier of dough balls which are made using the same recipe that he used for his tortillas which he sells to restaurants, coffee shops, wedding halls where they are warmed and filled. Gidron is importing a special quality kosher tortilla mix from the US. +++



++ figure 10

++ figure 10
Most of the products are distributed raw frozen



++ figure 11

++ figure 11
Bake-off station in a Shufersal market

Super-Sol Ltd

Super-Sol was founded in 1958 and is therefore one of the pioneers of the Israeli grocery trade. Today, the company operates more than 230 supermarkets, from Kiryat Shmona in the north to Eilat in the south. The market share is nearly 40% making this supermarket chain the largest one in the country. The stores are divided into several formats:

Shufersal Deal (Discount stores), **Shufersal Big** (One-Stop shops), **Shufersal Sheli** (Neighborhood stores), **Ultra-Orthodox Chain** (Offering exclusively kosher products), **Net Sal** (Home shopping service) and **Clubmarkets** (Israel's third largest retail chain was acquired in 2005).

90% of the stores operate a bake-off station in which Gidron products are baked. The bake-off range is divided into 50% fine bakery wares such as puff and Danish pastry, croissants etc. and 50% bread, chibatta, pita, baguettes and rolls. The frozen products are mainly delivered unproofed. Less than 5% are par-baked, but this tendency is rising. The baked goods range is supplemented by traditional breads supplied by various bakers. In 2005, Super-Sol's sales amounted to 6.614 bn NIS, corresponding to about 1.24 bn Euro. Super-Sol also operates drugstores in 22 supermarkets and is active on the Israeli real estate market. +++



++ Boris Shtirmer
Plant manager of Dragon



++ Noam Pelag
General manager



++ Izik Chakak
Plant manager of Gidron Saharon

spirals; it mixes and kneads the dough with two specially shaped vertically arranged cylindrical rods. The end of the arms is broadened in the final 10 centimeters. Both arms are driven synchronously and turn counter-clockwise. When they meet in the middle of the bowl, they pass each other only millimeters

apart, their edges practically cutting the dough. After that, they tear the dough apart and throw it against the wall of the rotating bowl. Also on the ground floor are three Miwe rack ovens used for baking part of the Challah production as well as one shock freezer and a small intermediate frozen storage. +++

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