

The other road to success

THE RANGE OF BREADS HAS TOP PRIORITY AT THE DER BROTMACHER GMBH IN KLINGENBERG, GERMANY. THEY SUCCEED WITH THIS, IN CONTRAST TO THE GENERAL SECTOR DEVELOPMENT, AND ARE ALSO A SUCCESSFUL EMPLOYER



++ figure 1
Der Brotmacher (the bread maker) – the name says it all in Klingenberg

+ Surrender the range of breads to the food retail? That's not an option for Heinz-Gerd Köhler. For him and his wife Ruth it is clear that a baker's identity is determined by bread and bread rolls, not by snacks. They have only a limited number of the latter. Der Brotmacher ("the bread maker") concentrates on products that define its identity and has developed a richly detailed concept around them, which includes the operational processes as well as the marketing.

For example it includes buying wheat, spelt and rye from farmers in the region. Together with a miller who is also in the region, regular discussions take place about which varieties will be cultivated, how they will be grown, how they will be milled and how they will be baked. An experiment with Champagne wheat is planned for next year. A small dairy in the Odenwald is still able to supply the correct type of "Schichtkäse", a special type of curd cheese, not an ultrafiltration coagulum. The cream is neither heated nor pasteurized. Admittedly one must know how to handle these things, which is one of the reasons why all the 50 staff employed in the production

unit have learned their profession thoroughly. Köhler says "We pay well, but we also expect the staff to be fully skilled in their trade."

Pre-doughs and sourdoughs are another basic element of the concept. There are four different sourdough methods just to process rye, as well as various wheat pre-doughs. If Köhler includes everything, around 60 % of all the cereals processed in his bakery is acidified and thus pre-soaked, which is of course reflected in the flavor and fresh-keeping. The spelt breads are only baked with pre-doughs. "Otherwise," says Köhler, "the acidity overwhelms the delicate spelt flavor." He was the first to establish the old cereal varieties in the region. The main cereal eaten here in the depths of the Odenwald was rye, and wheat was used for the fine breads. Even today the palest bread in the traditional product range is a mixture of 60% rye and 40% wheat. However, No. 1 is still a raised rye mixed bread that matures for 60 min in the bowl before being processed further and finally baked in a stone oven.



++ figure 2
A raised rye mixed bread is the No. 1 product



++ figure 3
Vacuum cooling gives the range of bread rolls longer lasting crispness

Köhler's system also includes vacuum cooling, which was purchased a year ago. Köhler says "I compared what was available on the market, then decided in favor of the Cetravac plant." The background to this was firstly the supply of bread rolls to the 21 branches, and secondly the experience that fully baked products do not become "tough" so quickly if they cool down in vacuum. Klingenberg is located in the valley of the river Main, where it is not uncommon for the climate to cause the crusts of bread and bread rolls to lose their crispness quickly. Vacuum cooling stabilizes the crusts. To prevent the crumb losing water, Köhler has modified the

recipes and uses even more water-retaining pre-soaked flours than in the past.

Wheat baked products and baguettes, seeded rolls, croissants and pretzel products now entirely run through the vacuum cooler. The result with the three varieties of crusty "Mainwurzelbrot", a specialty bread made from spelt flour whose dough is processed for three days, was almost a stroke of genius. After Köhler introduced vacuum cooling for these varieties, sales shot up more than 50%. Volume and shape are retained better, and crispness is kept for a longer time. ▶

ADVERTISEMENT

■ MIXING SOLUTIONS FOR BREAD, PASTRIES, CAKES & SNACKING INDUSTRIES

**PREMIUM
PERFORMANCE
COMPLETE
VERSATILITY**



**AQUAMIX
SPIRAL MIXER**

- From 20 kg up to 500 kg
- From 80 to 340 rpm
- Quick tool release device



Vacuum cooling

The modulated vacuum cooling of baked goods is a process that originated in Great Britain more than 40 years ago and was used mainly to cool large loaves and cakes. The process did not become widely accepted because the process parameters were manageable only with difficulty. In terms of its physics, vacuum cooling exploits the relationship between pressure and the boiling point of water to cool down products that contain moisture. A vacuum is generated in a closed box, the boiling point decreases and the free water in the product starts to boil. The evaporation of this moisture removes heat from the product, which cools down from the inside out in an extremely short time.

At the iba 2000 trade fair, the Swiss engineer Adolf Cermak showed for the first time a new application using an accessible vacuum cooler into which fully loaded rack trolleys could be pushed. At the same time he publicized and filed a patent application for the vacuum reduced pressure baking method which he had developed, in which the baked goods are removed from the oven and cooled before they have browned. Because they passed very quickly through the microbiologically critical temperature range, the dough pieces were non-perishable in a simple chiller compartment for several days. The vacuum cooling ensured the stability of the crust and crumb at the same time. The process was well received mainly in large bakeries, which at that time were not yet equipped with big frozen food capacities, e.g. in Luxemburg, Austria or Slovenia.

Cermak has made further developments in the technology and above all in the control of the processes since then. His company, Cetravac AG in Alstätten, Switzerland, now also builds plants that meet the needs of continuously operating lines. The vacuum pumps used in these plants nowadays are highly efficient, dry-running, and of course food-compatible. The electronic controllers enable the vacuum processes to be modulated in such a way that they can be adapted to the respective product characteristics. Such plants are used nowadays mainly to cool par-baked products after a baking time of around 50%, thus stabilizing them so they can do without refrigeration technology in logistics and storage, which saves costs especially when supplying branches and baking stations.

In parallel with this, Cermak has now developed a vacuum baking oven that uses heat, pressure, vacuum and steam to complete the baking of par-baked, vacuum-cooled bread within a few minutes, and simultaneously gives it slicing firmness. In contrast to conventional baking-off processes, this process causes no weight loss and thus no moisture loss either. With optimum control, even a slight increase in the bread weight is achievable. +++



++ figure 4

öhler's own development: the fermentation plant, a plant in which the doughs can rest while they develop

That is also true for the wood oven bread and wood oven baguettes, which come from a pellet-heated oven. Both are so sought after that they are currently available almost only by ordering in advance.

Another key component of Köhler's success concept is the product range policy. The selection is never boring, changes frequently and is adjusted to the seasons, festivals and events. So if the traditional bread varieties lose ground in summer, the summer products make up for it. For example the introduction of 120 g bread rolls, beaten by hand, baked in a stone oven and delivered to the branches ready to eat, was successful. +++



++ figure 5

Breads from the wood oven are so popular that you need to order in advance to be certain of getting one

Kill pathogens. Not profits.

Optimize food safety and throughput with the SCORPION[®] 2 System



Controlling internal food temperature is key to achieving food safety. Today's food processors must also document how they are meeting food safety requirements with data. The SCORPION[®] 2 Data Logging Measurement System makes both jobs easier.

The SCORPION[®] 2 Data Logger with R&D Smart Sensor and Product Probes simplifies the measurement of environment temperature, airflow, energy transfer and internal product core temps. Plus the SCORPION[®] 2 System Software (SV8) calculates and displays the % kill for a specified pathogen reduction level. By combining this ease of measurement with robust data capture, the SCORPION[®] 2 System enables better process optimization. No other system makes achieving desired levels of food safety and throughput so simple.



SCORPION[®] 2

Data Logging Measurement System
with SMART SENSOR TECHNOLOGY™



For more information, e-mail us at information@readingthermal.com or call 610-678-5890



READING THERMAL