

## **The Milton Keynes Process**

**Speaker: Harry Kear, Chairman and chief executive, Kears Group Ltd**

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Why? Who? How? Yes, ladies and gentlemen, these questions have been on the lips of many people in the baking industry, and, as a participant in the Milton Keynes Group, I am very pleased this morning to have the opportunity to give a brief response.

### **Why?**

Most developments in trade or industry are brought about by request. Better hygiene, greater consistency, better quality, lower cost - the list is endless; and customers and their suppliers have demanded and produced improvement after improvement continually, and more rapidly, as the years have passed.

Regardless of the romantic past, I doubt if anyone here today would wish to return to wooden dough troughs and hand mixing and kneading of the doughs; and so it was, bearing in mind the overall goal of producing traditional style bakery products of consistent high quality on demand, that the request for the Milton Keynes Process was born.

In October 1993, I had a meeting with Bob Emmott, managing director of special businesses at Sainsbury's, who had included in-store bakeries in his portfolio. He recognised the benefits to his customers if he could provide them with a full range of products throughout the hours the stores were open. However, because of huge fluctuations in trade through the weekly cycle, he, and every other major retailer in the country, was unable to do this.

He asked me if it was possible to provide ambient pre-formed bread with qualities that would be enjoyed by the customer. I told him that I didn't know, but would take his request back to base and give it to the team to try and solve the problem. Viv Knight, my managing director, took hold of it and immediately involved Gist-brocades and APV. The research had now started.

By January 1994, we (the group team formed by our four companies) believed that we had the basis of a process, but needed to scale up the findings, and in February 1994 Kears went ahead and established a pilot plant at Milton Keynes.

By May 1994, after full experience of the pilot plant, it was agreed that we had formulated a unique process which achieved a stable, consistent loaf that could remain ambient without staling, for periods of six to 12 days.

Of course, since then my company's contribution to the progress of the process is all on record, and we hope to stay in the forefront through:

- taking and implementing the decision to build a purpose-built factory at Milton Keynes at a first phase cost of £18 million, employing some 200 persons
- continuing the production of excellent quality products, suitable for customers to bake from ambient in a short period, in their instore facilities.

## Who?

The process partners, I Sainsbury, APV Baker, Kears Group and Gist brocades, are all leaders in their own fields.

- Sainsbury's is an internationally renowned supermarket organisation with in excess of 350 stores in the UK
- APV is a world leader in the provision of plant, processes and service to plant bakers, with over a century of experience
- Kears Group plays a major and growing part in the UK baking industry via its Starbake operations, and owns Coolcore Processing
- Gist-brocades operates worldwide. Its core business is biotechnology. It provides expertise in yeast development and enzyme technology as well as a full ingredients service to the baking industry

The happy combination of skills demonstrated by this formidable team has been able to drive research forward, and we expect our application for patent of the Milton Keynes Process to be published in November.

## How?

The process is the uniting of several elements. The full details are, of course still confidential, but broadly the success of the process is based on a combination of three key factors:

- the ingredients
- the technique
- the machinery

Formulating an improver to provide the extended shelf life which makes the process viable was one key factor. Gistbrocades supplied the expertise through its specialised knowledge in the use of dough conditioning enzymes, and created blends of improvers specific to the process, containing a blend of fungal amylases, carbohydrates and hemicellulases. These improvers conform to all the requirements of the Bread and Flour Regulations.

Good flavour is achieved through the initial fermentation of yeast, salt, water and flour components. This takes place in liquid fermentors where the available sugars and nutrients are converted into compounds by the yeast.

After some hours' fermentation, this compound is added to the other ingredients - flour, salt, yeast, improver, water etc - for mixing.

APV-Tweedy high speed pressure/ vacuum mixers are used to mix breads while French sticks and morning goods are produced on spiral mixers. The dough is then divided, and a first mould, intermediate proof, second mould and final proof follow.

The next stage is unique to the Milton Keynes Process. The dough goes through a crumb conditioning stage which gelatinises the starch and creates the required crumb and cell structure.

As the dough is not yet baked, the water content is not fully reduced, making the loaf unstable and liable to collapse at any time.

At the conditioning stage crust caramelisation is minimised as the dough piece is 'fully formed' by a steam process which takes place in the APV steam tunnel. The bread then goes to a stabiliser where the negative pressure stabilises the product against collapse when cooled.

The overall effect of this processing ensures that the moisture balance of the product is such that the staling rate is markedly slower than bread baked by the conventional method.

The pre-formed product, which is paler than a normal loaf, can then be packed and sent out, under ambient conditions, to stores where baking takes place in an oven and the crust caramelised. The finished loaf is of superior quality to part baked breads, and slow to stale.

The benefits to the retailer are:

- reduced overheads
- increased sales space
- no ingredient stock
- no freezer cost
- no scratch bakery cost
- no shortage of product availability throughout the day

## **Developing the process**

The potential for future growth is enormous. Traditional methods of flavour enhancement such as the sponge and dough method have been supplemented with the revolutionary new fermenting techniques used in the process.

Everything from traditional loaves to speciality breads such as cholla, muesli and malt, and morning goods including Danish pastries, brioches and croissants can be produced using the Milton Keynes method. There is also potential for pastries and patisserie products.

Milton Keynes Group Ltd, a company in which the four participating companies have equal shares, has been formed to develop and market the process overseas. David Roberts, past chairman of the Federation of Bakers, has taken on the mantle of director of the process and is engaged in co-ordinating licensing.

The process has already attracted worldwide interest and a number of companies in Europe and Africa have taken up licence options.

## **Conclusion**

I hope you have found this insight into the Milton Keynes Process interesting and informative. I conclude by saying how proud I am of my company's involvement in establishing such a remarkable innovation in the world of baking, and look forward to participating in the future growth of the Milton Keynes Process.