

Muehlenchemie to build a new Technology Centre for Flour Treatment

Muehlenchemie is a company that devotes itself to the development and sale of systems for flour treatment. In Ahrensburg near Hamburg, Germany, work is about to start on a modern technology centre for cereal processing. WORLD GRAIN met the firm's executive directors, Stefan Schliesser and Lennart Kutschinski, for an interview.

1. *Muehlenchemie* will be celebrating its 80th anniversary this year. What led you to build a new technology centre for cereal processing? And that at a time when many other companies are cutting their R&D budgets down?

We see ourselves as advisors to the milling industry. We help millers with their difficult task of reconciling fluctuating flour qualities with the increasing demands of bakers. Our work centres on tailor-made strategies for achieving uniform flour quality. Every day we are confronted with new flour and baking problems from some corner of the world. The only way to offer quick, pragmatic solutions is with a sophisticated Research and Development department that is also capable of maintaining international contacts with scientific institutions and industry.

2. You regard yourselves as suppliers of flour-treatment systems to the milling industry. What do you mean by that?

We supply the whole range of flour improvers – from ascorbic acid, bleaching agents and emulsifiers to thickeners and vitamin premixes. We supply the entire package from one source. The focus is definitely on our enzyme technology. In that field we are market leaders in the milling industry. For example, our R&D department under our head enzymologist Dr. Lutz Popper has set worldwide standards with the bromate substitute ALPHAMALT BX.

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3. Is it true that the brand *ALPHAMALT* has become a kind of generic term for the enzyme treatment of wheat flours?

Muehlenchemie marketed the first enzyme preparations under the name *ALPHAMALT* 80 years ago. At that time they were selected malt preparations. They marked the beginning of a unique development in the field of specific flour improvers. We are one of the pioneers. Of course our brand was bound to become synonymous with enzyme treatment. And not only for wheat flour – for rye flours too.

4. Why do you think enzymes still play such an important role in flour treatment?

Enzymes are extremely important as active substances in nature. Without enzymes, modern flour treatment is inconceivable. New enzyme systems of the kind we develop are able to cope with complex tasks. They improve the stability of the dough and the shelf life of the products as well as fermentation and baked volume. And these modern enzyme systems make it possible to replace formulations containing emulsifiers completely or at least partly, with interesting economic benefits.

5. A miller has problems with flour quality. What do you recommend?

The first answer is always, “Send us a biggish sample of untreated flour”. We then make a comprehensive analysis of the flour, test the rheology in our dough laboratory and bake, bake, bake. We try to take the special features of regional products into account, and we have developed a variable programme for adjusting the baking processes to these features. For example, intensive kneading in mixers requires quite different flour treatment from kneading of the dough by hand, which is still often done in some parts of the world. The individual advice we give depends on our findings. It's an exciting task that we go about with a lot of pleasure and enthusiasm.

6. What milling problems have you been confronted with recently?

One constantly recurring problem is finding a replacement for potassium bromate. Fortunately we have been able to develop our bromate substitute *ALPHAMALT BX*, a pretty universal tool for our customers. In all parts of the world where this problem occurs it has enabled us to offer reliable solutions, even if we had to initiate some re-thinking: away from bromate, that is very cheap and easy to use but risky and damaging to health, to the more complex enzyme systems. It means the user has to have at least some understanding of enzymatic processes, and that is where our Applications Technology department comes in.

7. What are your most important markets, and how do you reach your customers?

We are internationally oriented and export to over 100 countries. To us there is no such thing as a *most important market*. Every country that has at least one mill is important to us, because we are partners of the milling industry. We keep in contact with the head miller through our customer magazine "*best.flour*" and visits to the facility. Admittedly that's not easy with such a large number of mills.

8. Can you tell us something about your production techniques?

Those who are familiar with blending technology know that the production of good compounds of active ingredients is an art in its own right. In Wittenburg (Mecklenburg-West Pomerania, in north-east Germany) we have built one of Germany's most modern compounding plants. The plant consists of three independent, fully automatic production lines with a total capacity of 35,000 tonnes a year. The plant is designed for a high degree of flexibility so that we can make up even small batches quickly and reliably to solve individual customers' problems.

9. Will millers be trained in baking technology at your new technology centre?

We aren't really a training centre, but individual training in baking for millers – and for bakers too – is one of our most important topics. Our training concentrates on the use of additives and their effect on rheology and baking techniques, but the flour provided by the trainee is an important aspect too. Working together with the raw materials generates a lot of information and suggestions for both sides.

10. What challenges do you think the future will bring?

To our mind one special phenomenon is the increased growing of grain in countries that do not typically export wheat. Examples are India and Pakistan, and also Kazakhstan and Poland. This grain is pushing its way into the export market and being used more and more widely because of the lower price. The immediate benefit is the lower cost of the wheat mixture. But that results in new challenges to flour treatment, since the gluten properties of the wheat from these countries are often unfamiliar, or even unknown, and make totally new treatment programmes necessary.

11. The WHO is making efforts to encourage and propagate the enrichment of wheat flours with vitamins. You have turned your attention successfully to this function in recent years. Where are your points of emphasis?

We have found that vitamin premixes, especially, show great differences in granulation and stability. It is essential to formulate premixes accurately to the gram and most of all to ensure very fine, homogeneous distribution. You might call it fine tuning. We use very special process technology – for example spraying techniques for vitamins that are soluble in oil – to produce highly stable vitamin compounds.

12. You are working on a “Manual of Practical Milling”. Can you tell us more about that?

Our commitment to the milling industry is deeply rooted on all levels. It is true that Dr. Lutz Popper has taken on the Herculean task of compiling a “practical compendium” for the man on the job – together with other experts from America, Africa, Europe and Asia. Millers will find a great many suggestions for their day-to-day work. The title will be “*Future of Flours*”, and we are hoping to publish the book at the beginning of next year.

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