

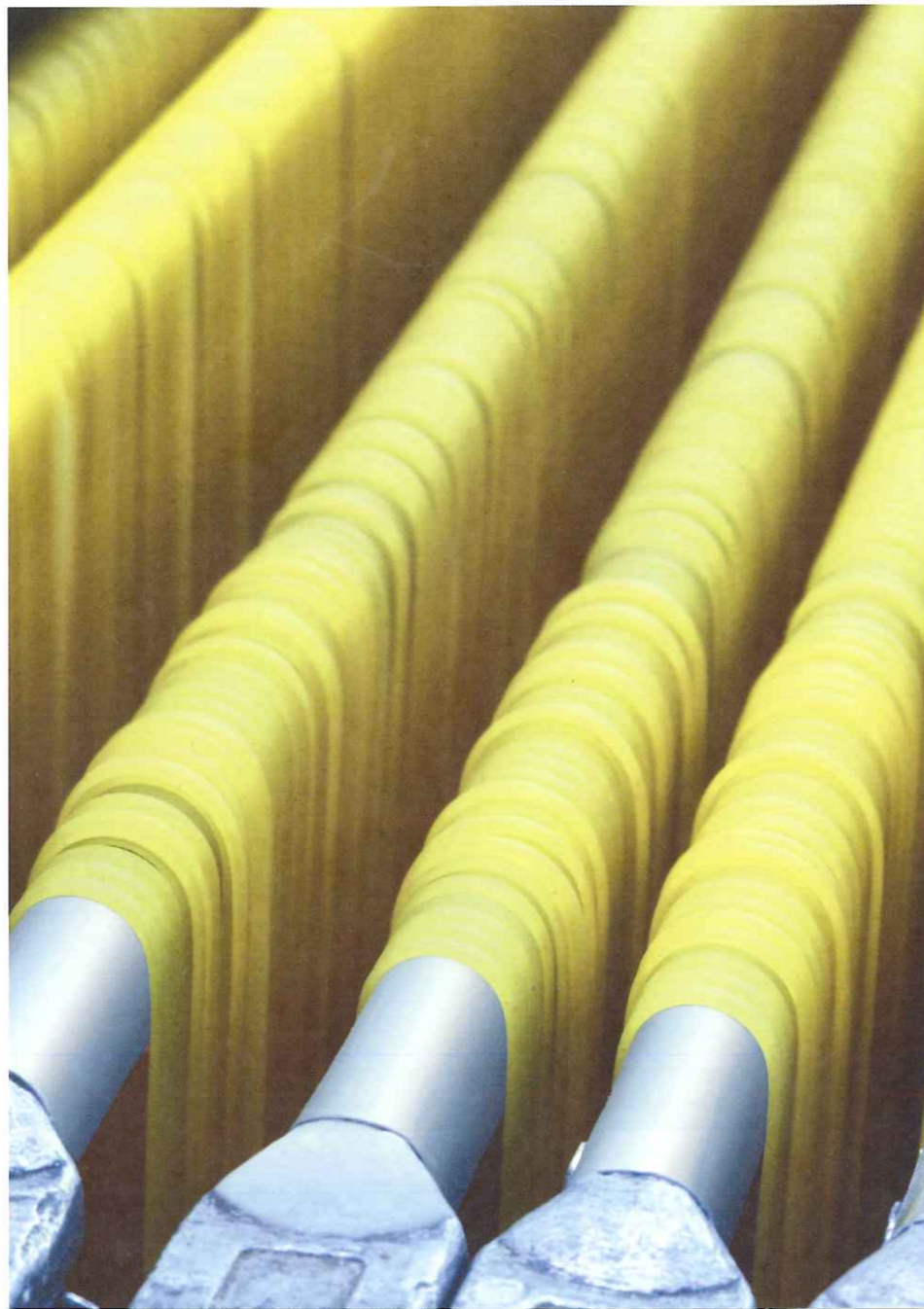
Mühlenchemie wants to expand in the pasta market

Lutz Popper, Head of Research and Development:
«A new dimension to our range of services»

by Delia Maria Sebelin



The head of Research & Development at Mühlenchemie, Dr. Lutz Popper.



Mühlenchemie GmbH & Co. KG is one of the world's leading companies in the field of flour treatment. Its key competence lies in solutions for flour standardization, flour improvement and flour fortification - from classic flour treatment to concentrates for ready-mixed flours. Mühlenchemie exports its products to over 120 countries and maintains close relations with more than 1,000 mills around the globe. At the foreign affiliates in Mexico, Singapore, India, China, Russia, Brazil and Turkey a team of experts supports mills on the spot and offers individual solutions to ensure optimum flour quality. For this, Mühlenchemie has developed enzyme systems, flour maturing and oxidizing agents, bromate replacers, emulsifiers, vitamin and mineral premixes and functional systems for ready-mixed and composite flours. Mühlenchemie standardizes over 70 million tons of wheat a year.

The German company is also specialised in enzyme-containing compounds for pasta flours. It has recently opened a trials laboratory for pasta thus considerably expanding its efforts in this field. Mühlenchemie sees the interlocking of expertise in raw materials and plant and equipment as a promising way to advance the development of innovations and product optimizations for the pasta market. We wanted to learn more from the head of Research & Development at Mühlenchemie, Dr. Lutz Popper, about this global player's vision for the future.

Dr. Popper, Mühlenchemie is known for its expertise in the field of enzymes and additives. Now your company is getting more deeply involved in the production of pasta. What decided you to invest in pasta equipment?

For many years our portfolio has included compounds

«We can test various enzyme systems until they are exactly right for use»



of active constituents to improve pasta flours or semolina. We have now created an optimum environment on the production side of the equation, so that we can improve our practical response to the challenges in this industry. The pilot plant allows us to become thoroughly versed in the production process so that we can tweak each ingredient until it works in the best possible way when the product is used in the client's plant. This adds a new dimension to our range of services.

You are therefore reducing the gap between lab and industrial scale. What is special about this plant?

It is a small, extremely flexible pilot plant from Pavan; only a few models exist anywhere in the world. Its continuous hourly throughput is 70 kg, the minimum volume for a trial is between 10 and 15 kg of finished product. One special feature, for example, is the vacuum at the blending and extruding stages. This prevents oxidative side reactions and changes in colour. But what

was really important to us was that it has a wide range of uses and options.

Drying is also a sensitive part of production. The quality can easily suffer at this stage and discolouration, cracks and breakage can be the result. What feature was important as far as the drying part was concerned?

Time, temperature and humidity have a major influence - and they also impact the efficiency of our enzyme systems. Therefore we have to be able to control these factors very precisely. The new, fully automatic climate cabinet can be variably adjusted to control temperatures, air flows and humidity. So now we can individually adjust the various drying and relaxation phases in the production of pasta, e.g. spaghetti.

EVERY MANUFACTURING PROCESS CAN BE SIMULATED

Dried, uncooked		After cooking	
	Untreated soft wheat flour		Untreated soft wheat flour
	Pastazym BCT 200 ppm		Pastazym BCT 200 ppm
	Durum		Durum



The pilot plant for pasta.

What concrete benefit does your new trials laboratory offer a pasta manufacturer?

The plant is so flexible that practically every manufacturing process can be simulated. This lets us test various enzyme systems for the client until they are exactly right for use, and the client does not have to interrupt his routine production to perform his own tests. Obviously, this saves enormous amounts of time and money. And it gives the client reassurance that no major problems should be expected when he switches his own production system to the new recipe.

Tell us about the practical side of this client support, what steps are involved in developing a product?

To start with, the client sends us his raw material, which we analyse for protein and gluten content, water absorption properties, ash and many other parameters. We also enquire about other aspects of his pasta production: for how

long is the dough mixed, how high is the temperature, how much water is added, what is the drying process like? And, of course, we need to know what the customer wants to achieve. Sometimes it is just a question of reducing loss at the cooking stage, sometimes bite is an issue, or a different colour.

What are the criteria for setting up the test series?

We conduct preliminary tests with our small laboratory plant using the customer's recipe. Then our team discusses which additives might be appropriate for the specific application. If the flour contains less than ten per cent protein, we would, for example, use compounds from our EMCEdur series, but if the protein content is over eleven per cent, our choice could be something from the Pastazym Plus range. Two or three days are then spent testing varying amounts of the chosen ingredients using our laboratory plant. After that comes the upscaling process so

«We can tweak each ingredient until it works at the best»

that full-scale tests can be performed, which also takes several days. At the end of the tests each client receives an exact interpretation of all the analysis data and samples from the trials.

Can customers come to your lab in Ahrensburg and be present at the trials?

We are happy to let clients look over our shoulders. That is in fact the ideal situation. When a project is developed in a direct dialogue with the client, we usually find the best solutions.

From your observations, what would you say is the biggest problem for pasta manufacturers?

The quality of the flour! Durum is the ideal variety of wheat for pasta. But due to fluctuating prices and limited availability, many manufacturers have to use soft wheat or mixtures of hard and soft wheat instead. That often causes problems.

And Mühlenchemie has the solutions to hand?

For years we have been pressing ahead with the development of innovative functional systems so that flours that do not have ideal qualities can be turned into durum-quality pasta. Our aim is to help food manufacturers become more independent of the commodities markets. After all, it is vital to marry quality with profitability - otherwise companies will not survive global competition in the long term. That is what we are working for - and our new pasta plant is an important element of our commitment. ■

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