Left to right: Nele Eerdekens (lab technologist), Ward Uyttersprot (lab technologist), and Peter De Saert are part of the Univar team, working extensively with baking trials, enzymes, and Novozymes.

> "Last year for the first time we introduced the use of separate and pure enzyme types to flour mills, and it is a great success."
>
> Peter De Saert, Technical & Development Manager at Univar Benelux

CORRECTING FLOUR TO PERFECTION WITH **THE RIGHT PARTNERSHIP**

Novozymes and Univar are successfully working together to deliver the optimized blend of ingredients – including enzymes – to flour mills in Central Europe, both to correct their flour and to satisfy the needs of bakeries.

Bread improvers, and not individual flour mills, are and will be the main market for Novozymes' enzyme solutions. But in the new partnership with Univar, Novozymes now penetrates the bakery sector further.

The enzyme expertise of Novozymes and the experience Univar has with the flour mill industry open up the potential for enzymes in yet another important market segment.

"Last year for the first time we introduced the use of separate and pure enzyme types to flour mills, and it is a great success," says Peter De Saert, Technical & Development Manager at Univar Benelux.

Univar supplies flour mills with various ingredients that are complementary to enzymes, and distributes Novozymes' enzymes to the flour mill industry in parts of Europe.

The new partnership gives Novozymes the opportunity to learn more about the flour mill industry and stay closely informed about wheat quality trends.

"It was natural for us to partner with Univar as they have the flour industry expertise and contacts with the agricultural sector that we do not. Novozymes in turn offers its broad range of enzyme solutions and expertise with baking trials," says Leo Nieuwenhuis, Account Manager at Novozymes and member of the Univar Account Team.

Qualitative advice

Bakeries expect flour mills to deliver wheat flour that suits their baking needs. The flour, in general, must not have any off-qualities that hinder the baking process.

Without correction, wheat quality fluctuates dramatically from year to year; factors include the climate, the use of new wheat varieties, and more stringent legislations regarding the use of fertilizers. With every harvest, flour mills analyze the deficiencies in the flour and improve it so that bakeries get the flour with the exact properties they need.

"Flour from last year's harvest is different from this year, and we continuously adapt the flour to offer the bakeries the quality they need," says Peter De Saert.

To do this, flour mills receive practical information about the flour related to specific baking applications from well-equipped and specialized organizations like Univar.

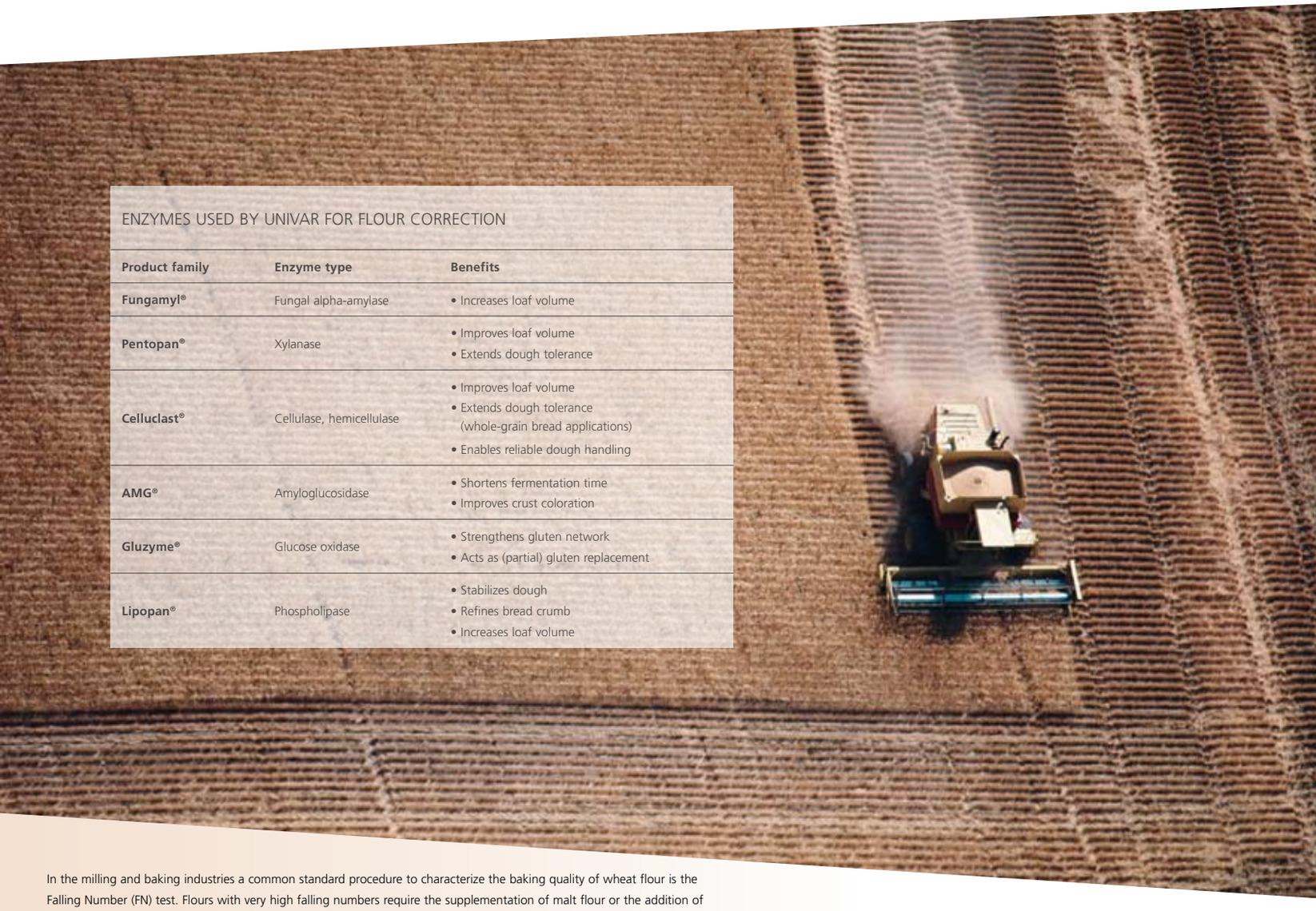
Flour mills send samples of their flour substrate for each new season to Univar for analysis. The substrate is not just one variety of wheat but a combination of many different wheat species based on the qualifications required by bakeries. The substrate is not corrected and is pure with all the deficiencies of the new crop.

"We analyze the substrate and offer the option of a customized study for each flour mill so that they can see how they are positioned in the market and what they need to do to correct their wheat flour," adds Peter De Saert.

Flexible flour correction

Univar provides flour mills with a FARICO (Farine Correcteurs range) report of their substrate, which is an extensive report based on lab analyses and baking trials.

First Univar runs a lab analysis and baking trials on the uncorrected wheat flour to reveal deficiencies and define the most appropriate dosage of ascorbic acid and diastatic active malt or buffering systems. Then this information and samples of the flour are sent to Novozymes Switzerland AG, where further baking trials are performed.



ENZYMES USED BY UNIVAR FOR FLOUR CORRECTION

Product family	Enzyme type	Benefits
Fungamyl®	Fungal alpha-amylase	• Increases loaf volume
Pentopan®	Xylanase	• Improves loaf volume • Extends dough tolerance
Celluclast®	Cellulase, hemicellulase	• Improves loaf volume • Extends dough tolerance (whole-grain bread applications) • Enables reliable dough handling
AMG®	Amyloglucosidase	• Shortens fermentation time • Improves crust coloration
Gluzyme®	Glucose oxidase	• Strengthens gluten network • Acts as (partial) gluten replacement
Lipopan®	Phospholipase	• Stabilizes dough • Refines bread crumb • Increases loaf volume

In the milling and baking industries a common standard procedure to characterize the baking quality of wheat flour is the Falling Number (FN) test. Flours with very high falling numbers require the supplementation of malt flour or the addition of fungal alpha-amylase. When malt flour is added, the effect can easily be controlled by the FN test. However, the FN value of flour remains unchanged when fungal alpha-amylase is added in amounts recommended for the baking industry. Fungal alpha-amylases are sensitive to the heat in the FN test so the improved flour characteristics can only be measured in baking trials.

"During the baking trials we add enzymes and fine-tune the dosage of the enzymes to reach the targets defined by the customer," says Leo Nieuwenhuis.

The finishing touches are added at Univar to adjust the water-binding capacity with farico proteo. This is a unique functional protein/fiber complex, which will be available on the European market for the first time in the coming season. It is part of an economical package with Novozymes enzymes that can replace the addition of more expensive vital wheat gluten. Last but not least, Univar does practical tests to check the compatibility of its final correction formula with commonly used bread improvers.

Univar not only offers standard enzyme cocktails to flour mills, but also provides customized solutions, especially to the larger mills. These solutions, using individual, pure Novozymes enzymes and tailor-made concentrates, give flour mills the flexibility they need to correct their flour.

"This is just one of the many examples of the strength of the Novozymes–Univar partnership, and I am certain that this and the other initiatives the Novozymes–Univar team are constantly working on will lead to even greater success for the joint team in the future," says Damian Gill, Distribution Manager CWE at Novozymes.

Flour mills also receive information regarding each enzyme and its activity. They can then adjust individual enzyme levels to correct their flour as efficiently as possible. In addition, pure enzymes are more cost-effective than enzyme cocktails, making them even more attractive to flour mills.

"We believe selling pure enzymes individually is a breakthrough in this field. We started to sell enzymes like this last year and our customers are very happy," says Peter De Saert.

The flour mill industry has moved from being very traditional to dynamic and innovative, embracing new technologies like enzymes and new ideas more openly.

"Today we have possibilities that didn't exist 5 to 10 years ago," says Peter De Saert. "And our partnership with Novozymes is definitely a step in the right direction to both move the industry forward and prepare it for tomorrow." ■

Leo Nieuwenhuis is an Account Manager at Novozymes and a member of the Univar Account Team.

FOR MORE INFORMATION
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