deutscheback
Together. Better Baking.

Enzyme systems and enzyme compounds

Cost-effective and ecologically sound

The huge number of enzymes and the diversity of their applications in baking are impressive. Moreover, the high efficacy of enzymes, and thus their low dosage levels, make their production and use attractive from the point of view of both cost and ecology. Enzymes already save resources in the fields of production and logistics, since they need less warehouse capacity and packaging material. And most important: enzymes can reduce the amount of other baking ingredients added.

With this in mind, our technologists have developed innovative baking concepts that offer added value in terms of economy and quality as well as providing the basic treatment for specific applications. From hundreds of single enzymes we formulate enzyme systems that have greater potential effect because of their combination. For example, they can help to achieve a longer shelf-life or reduce the amount of salt added.

When designing our enzyme compounds we make use of the synergisms between enzymes and other raw materials such as dietary fibres or hydrocolloids in order to optimize water absorption or reduce the addition of gluten.

Enzyme systems

Prolonged shelf-life

Consumers rate texture with a practical test: by feeling and squeezing the product. That means freshness of the crumb and elasticity are not only important criteria for the decision to buy wrapped bread; they also determine when consumers throw away bread bought fresh because it has "gone stale". The enzyme systems adjusted to different flour mixtures result in a much fresher and succulent crumb and therefore a more attractive product.

Product	Properties	Usage Level
TopBake Fresh series	Keeps the crumb of wrapped wheat bread soft and elastic during storage	0.5–2 %
TopBake Fresh XL2 1 %	Prolongs the shelf-life of the crumb, especially with rye or mixed wheat-and-rye bread and heavy doughs like "Stollen" (sweet fruit loaves)	0.5–2 %
TopBake Fresh XL3 1 %	Soft, succulent crumb in wheat or mixed wheat bread	0.5–2 %
TopBake RMB Fresh 2	Good water binding; soft, succulent crumb, especially with mixed rye bread	0.5–2 %

Better volume and stability

The potential of wheat flour lipids was underestimated for a long time, yet the polar lipids – especially glycolipids and phospholipids (lecithins) – have an effect on the baking process.

Mulgazym optimizes their emulsifying properties, thus making it possible to reduce the addition of other emulsifiers or avoid it completely.

Product	Properties	Usage Level
Mulgazym SFX series	Increases the baked volume of hamburger buns, sandwich loaves etc. and keeps the crumb fresh	0.1–2 %
Mulgazym DFX series	Improves gas retention and fermentation tolerance; increases baked volume; creates a finer texture in wheat products	0.1–2 %
Mulgazym EFX series	Improves dough stability, fermentation tolerance and baked volume; creates a finer texture	0.1–2 %

Salt reduction

A healthy diet without loss of quality

There is plenty of evidence that excessive salt consumption is detrimental to health. Since a large proportion of the salt consumed daily is taken in through bakery products, many countries have set limits to its use. Besides loss of flavour, a reduction of the salt content has an adverse effect on stickiness, dough stability and gas retention. Saltase can compensate for these disadvantages.

Product	Properties	Usage Level
Saltase	Compensates for the functionality of salt	0.1–2 %
Saltase Plus	Compensates for the loss of functionality and flavour caused by salt reduction	0.1–2 %

Enzyme compounds

Optimized water absorption

In industrial baking, good water binding has a direct influence on processing properties and the quality of the products. So the stability and consistency of the dough during its preparation are just as important in terms of quality as the volume, freshness and elasticity of the end products.

The product line TopBake WA optimizes water absorption and enhances the stability of the dough. Moreover, the TopBake WA Pure series is available as a variant without E numbers.

Product	Properties	Usage Level
TopBake WA series	Increases water absorption capacity, optimizes dough stability and enhances the succulence of the crumb	0.5–5 %
TopBake WA Pure series	Variant without E numbers	0.5–5 %

Gluten reduction

An all-rounder for weak and composite flours

The use of weak flours or gluten-free raw materials like maize, soy or cassava (tapioca) has a marked influence on baking performance. The weaker the wheat gluten, or the smaller the proportion in the product, the greater is the negative effect on dough stability and volume. This loss of quality can be compensated for with TopBake Gluten Enhancer; in recipes containing vital wheat gluten it is possible to replace ten parts of vital gluten with one part of Gluten Enhancer.

Product	Properties	Usage Level
TopBake Gluten Enhancer series	Optimized dough stability; good volume; enhanced crumb structure	0.5–5 %