

# New enzyme blend to boost volume for bakery

By Jess Halliday, 08-Sep-2009

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**Mühlenchemie is launching a new enzyme blend to help compensate for fluctuations in flour quality, increase volume of baked goods, and reduce emulsifier use.**

Flour quality – such as levels of protein and lipids – can vary on a number of factors. For instance heavy rain around harvest time may cause wheat to sprout or mildew, and drought too can have an impact.

To a certain extent flour millers can make up for the fluctuations by optimise the grist (mix of grain), removing certain kernels or blend qualities. But Dr Lutz Popper, head of R&D at the German firm, told to FoodNavigator.com: *“There are limitations, especially when the infrastructure to blend is not there. Then you need additives to adjust it to the needs of the market or the application.”*

Typically emulsifiers and oxidising agents are used to do the job. These need to be labelled on product packaging – and consumers are increasingly looking for ‘clean’ labels, with as few ingredients listed as possible.

Enzymes, on the other hand, do not need to be listed on-pack.

Mühlenchemie’s new enzyme blend, called Alphamalt EFX Mega, is said to achieve similar results to DATEM emulsifiers, thus reducing the need for them to be used or allowing them to be removed altogether.

## **Polarising lipids**

The esterase complex is said to act on the lipids that are naturally present in the flour. Non-polar triglyceride lipids – that is, those that do not mix with water – are split out into mono- and di-glycerides, which rendered them polar.

Meanwhile, the polar lipids (naturally hydrophilic), such as phospholipids or glycolipids are made more polar, enhancing their emulsifying capabilities.

Dr Popper said the action can help boost volume in bakery goods as the gas bubbles have a stronger protective shell, keeping more air in. The air is more finely distributed and the crumb structure smaller, so the product is softer.

## **Cheaper flour?**

In addition to the clean label benefits, Dr Popper said the enzyme blend *“can help volumise – or if you are happy with a certain volume it can reduce costs”*.

In breads with long fermentation, like baguettes or Turkish style breads, the use of Datem emulsifiers may no longer be required at all.

As to whether it could allow bakery firms to source cheaper, lower quality flour, Dr Popper said this may be counterproductive.

*“People want reduced raw material costs, and wheat is the most expensive raw material. Some batches may be lower protein quality and can be adjusted. But if there are sprouting problems you would have to treat carefully, and then there is the question of margin.”*