



ORGANIC BAKED GOODS

a megatrend in France

Organic baked goods are a megatrend in France. However, manufacture of organic products is considerably more demanding than that of conventional products. In particular, the lower protein content of the flour and restrictions in what additives can be used create challenges for bakers. Non-GMO enzymes are a key factor in optimizing organic flours.

More and more people in France are making shopping choices based on a stylized green leaf on the product packaging. The logo stands for food whose ingredients are at least 95% from organic agriculture, and which are made according to the requirements of the E.U.-wide organics regulation.

It took longer than in other E.U. member states like Germany and Denmark for French consumers to discover their passion for organic foods. But once they did, they caught up with unparalleled speed, as market research institution Mintel reports: “Organic has been the top claim used on launches of bread or bread products in France, featuring on almost one in five launches, way ahead of the European average. More significantly, the organic claim is also extensively used on sweet bakery products in France, having appeared on over one in 10 launches over the last five years.”

In its latest study of French consumer behavior, Mintel prognosticates a bright future for the organic category: “Half of French consumers agree it is worth paying more for organic bread/baked goods, significantly above the 39% of consumers that agree on the same point in Europe’s largest organic food market, Germany. This is clearly a growth opportunity for the

Organic has been the top claim used on launches of bread or bread products in France, being featured on almost one in five launches. Photo courtesy of Mühlenchemie.

by Martina Mollenhauer and Fabien Varagnac

Low protein content, additive restrictions are a challenge for bakers

bakery market and a chance for producers to see progression beyond the 2% CAGR for bread/bread products and 2.6% CAGR for sweet bakery products over the next five years.”

To enter the organics market, bakers have to meet numerous requirements. E.U. directive No. 834/2007 forms the basis for all agricultural products advertised as “organic.” This European legal standard provides detailed regulations for all areas of production, marking and sale of organic products.

LESS ADDITIVES, WEAKER FLOURS

One of the most significant limitations affects the use of additives and supplements. To meet consumer expectations that products should be as unadulterated as possible, the use of additives is greatly restricted. For example, widely used emulsifiers like mono- and diglycerides of fatty acids or diacetyl tartaric acid esters are prohibited, as is the acid regulator sodium acetate.

For a food product to be sold as organic, at least 95% of the ingredients need to be from organic agriculture. With many baking ingredients like milk, eggs, fat and sugar, this requirement presents no problems. For the purposes of baking techniques, there are no differences between organic and non-organic. However, the situation is quite different for the main ingredient, wheat flour. Organic flour is often comparatively weak in terms

Retailers expanding organic baked goods lines

The French food retail sector has significantly expanded the organic product range in the last few years. According to Mintel, major retailers in the country have been keen to exploit the growth opportunity. Carrefour opened its sixth dedicated organic store in Paris, Carrefour Bio, in March 2016, and opened another outlet in Lyon in November 2016. Other retailers such as Leclerc and Auchan have been investing in this area as well, and across the retailing spectrum players have developed dedicated private label ranges. For example, Lidl launched a premium organic line in September 2016 called Si bon si Bio. Moreover, the retailer Monoprix announced in 2016 that all its baguettes would now be organic, suggesting that it is becoming an industry standard.

"The growth of more affordable private label organic lines in particular has allowed a wider range of the population into the market," Mintel said.

of baking quality, as farmers may not fertilize their fields with mineral nitrogen. The direct consequence for wheat is lower gluten and protein content, which is, for example, reflected in lower sedimentation values.

Adding to the difficulties is the lower variety and availability of organic wheat. French organic mills prefer domestic wheat, but with a total growing area of just 25,000 hectares and an annual harvest of around 75,000 tonnes, there is no real choice as to varieties or quality grades.

Thus, bakers wishing to add organics to their product range face a dilemma. On the one hand, they have to cope with a difficult raw material situation. On the other hand, they have to meet high consumer expectations, because in appearance and flavor, consumers expect organic products to not differ significantly from their conventional equivalents.

NON-GMO ENZYMES

A proven way to improve the quality of baked goods is to use flours that have been standardized with enzymes. In France, two requirements have to be met. The enzymes must not be produced using genetically modified microorganisms; this also goes for the rest of the E.U. In addition, and only in France, there is another regulation by which the enzymes must be included on a state-approved positive list.

Mühlenchemie offers a wide range

of non-GMO enzymes for the milling and baking industry, with properties designed around the needs of organic products. Especially for high-volume products like bread rolls and sandwich bread, as well as hot dog and hamburger buns that need to have a soft, moist crumb, these flour treatments are an effective way to improve the functionality of organic flours.

The effect of the various enzymes on baking performance can best be shown using a specific example. Sandwich bread is a popular but also demanding organic product. The list below shows the most common quality issues in sandwich bread manufacture, along with proven solution approaches.

SANDWICH BREAD STANDARD RECIPE

1% Instant yeast
 1.8% Salt
 4% Margarine
 9% Sugar
 Mixing with spiral kneader: 2-minute low speed, 7-minute high speed
 2-minute bowl fermentation
 Dividing
 2-minute relaxation
 Shaping
 Fermentation: 150 minutes at 32 °C; 80% humidity
 Baking in closed pan: 30 minutes at 200 °C

Problem: Low baking volume

Cause: Low fermentation activity

Solution: Alphamalt A 4050. This fun-

gal amylase releases fermentable sugars from starch, and hence increases oven rising and boosts the volume of the bread.

Problem: Light, pale crust

Cause: Low enzyme activity of the flour

Solution: Betamalt 25 FBD. This amyolytic barley malt extract favors the formation of maltose and so improves the browning and shine of the crust.

Problem: Poor dough elasticity, low baking volume

Cause: Low protein content of the flour, weak gluten network

Solution: Alphamalt EFX 22050. The creation and improvement of emulsifying substances from the flour's own lipids by carboxylester hydrolases improves dough stability and yield by volume.

Problem: Fast staling

Cause: Natural retrogradation process

Solution: Alphamalt Fresh Organic. This antistaling enzyme delays the re-crystallization of the amylopectin in the agglutinated starch, resulting in a longer freshness preservation.

Problem: Poor dough elasticity

Cause: No ascorbic acid added to the flour

Solution: ELCO AF Natural. This ascorol powder is rich in vitamin C, and improves dough properties in a similar way to ascorbic acid. It stabilizes the dough and boosts yield by volume.

Problem: Poor dough stability

Cause: Weak gluten properties of the flour

Solution: Alphamalt Gloxy 21087. This glucose oxidase strengthens the gluten network, dries out the surface of the dough and improves stability. **WG**

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