

# Optimizing functionality

NATIONAL STARCH PRESENTED AT FIE 2009 N-DULGE FR, A STARCH-BASED SOLUTION WHICH MIMICS THE ROLL THAT BUTTER, MARGARINE OR BAKERY FATS PLAY IN A CAKE RECIPE

**+** N-Dulge FR was developed in collaboration with Campden BRI, one of the UK's leading authorities on food processing. The task was to fine tune the ingredient's functional properties, so that characteristics such as springiness, cake structure, volume, texture, shelf life and moisture loss were maintained or improved when replacing butter or margarine with N-Dulge FR. In traditional cake formulations, butter and margarine help confer a soft eating quality by preventing the gluten in flour from hydrating. Fat also stabilizes air bubbles in the batter to give a fine crumb structure which creates the soft and springy texture consumers desire. Without these interactions, cakes do not rise correctly and the mouthfeel can suffer.

N-Dulge FR mimics the role butter and margarine play in cake recipes through its film-forming capability, preventing gluten from hydrating and helping stabilize the air bubbles in batter. The result is a soft cake with good volume, a fine crumb structure and the same mouthfeel achieved with fat. This enables manufacturers to reduce the fat content of reci-



John Todd Photography

pes by up to 75 per cent – 35 per cent more than the closest competitor – with no loss of quality. Recently, pound cakes incorporating N-Dulge FR were tested for textural changes over a period of time. Testing was carried out over seven days. Compared to the control cake, on day one, 24 per cent less force was required to mis-shape the cake incorporating N-Dulge FR. By day seven, 48 per cent less force was required. These tests indicate the lower cost issues as reduced fat cake maintains a soft and fresh eating texture for longer. Bakers can therefore

take advantage of a longer shelf life by extending production runs which, in turn, results in less cleaning and reduced product changeover. Further testing on the ability to freeze and thaw a cake incorporating N-Dulge FR showed that the cake did not suffer when the product was frozen.

To supplement the analytical research carried out by Campden BRI, National Starch Food Innovation also conducted informal blind consumer testing. The results showed 54 per cent of participants preferred the reduced fat pound cake to the standard recipe cake. [www.foodinnovation.com](http://www.foodinnovation.com) +++

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# Longer lasting freshness

NOVOZYMES HAS INTRODUCED NOVAMYL PRO, A SUCCESSOR PRODUCT OF THE NOVAMYL ENZYME USED IN BAKERY IMPROVERS FOR MORE THAN 20 YEARS

**+** Novamyl contained only one maltogenic amylase but Novamyl Pro is a blend of maltogenic amylases enabling a new level of bread freshness to be achieved such as crumb softness, elasticity and additional improved moistness.

In general, Novamyl Pro can be used in all yeast raised baked products such as sandwich bread (white or wholemeal) or buns. However, the producer claims that Novamyl Pro works especially well in lean recipes, i.e. low in sugar and fat, which are typically seen in European styles of bread. The more basic the formulation for example, with no emulsifiers and only one flour type, the fewer ingredients that are required to maintain the freshness of the product. In such recipes, the new formula provides freshness value because it slows down retrogradation of the starch, and thereby it slows down the staling of the bread. However, also in a lean recipe with a premium formulation, e.g. with different emulsifiers and different flour types, Novamyl Pro will give a significant improvement of the eating quality over Novamyl. The en-



zyme-mixture is available as a granulate in two strengths: Novamyl Pro 80 BG (80PROMU/g) and Novamyl Pro 12 (12PROMU/g). The dosage levels are between 1-10 PROMU per kg flour, corresponding to 12 – 125 ppm Novamyl Pro 80 BG and 83-830 ppm Novamyl Pro 12 BG, respectively.

The new ingredient will not influence key parameters such as production process, dough properties and appearance of the final bread, but it offers a new flexibility and freedom to production scheduling and distribution coverage. The longer production runs on dedicated lines result in less waste and down-time, and the exceptional long-lasting softness and freshness experienced means that specialty products do not have to be baked every day, and that baking can be skipped on Saturdays. The prolonged freshness also supports greater distribution coverage. Novamyl Pro as well as Novamyl can be used in frozen bread applications such as unproofed frozen dough, par-baked and pre-proofed bread processes. [www.novozymes.com](http://www.novozymes.com) +++



## Verona (Italy), 22/26 May 2010

The international exhibition dedicated to technologies, raw materials and semi-finished goods for production of bread, pastry, pizza and pasta.

[www.siabweb.com](http://www.siabweb.com)



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# From silo to truck

