

# BAKING UPDATE

**Vitamin D**  
Amended legislation offers  
new baking opportunities

Practical technology from Lallemand Inc., parent of American Yeast, producers and distributors of Eagle® yeast, fresh and instant.



## Legislation Update

Health officials in countries across the world have in the past few years paved the way for vitamin D, as amended food legislations offer the baking industry new opportunities:

**November 2010:** The Institute of Medicine increased the Recommended Daily Allowances for vitamin D for Americans from 200 to 600 IU per day for children and most adults.

**February 2011:** An Interim Marketing Authorization (IMA) was published in the Canada Gazette. Health Canada permits the use of vitamin D2 yeast for the increase of the vitamin D content of yeast-leavened baked goods to a maximum level of 90 IU vitamin D/100g.

**January 2012:** In responding to questions from Health Canada on implementation of Dietary Reference Intakes for calcium and vitamin D, the Expert Advisory Committee of the Canadian Academy of Health Sciences recommended increasing the mandatory fortification of selected foods with vitamin D and exploring other fortification options, through modeling exercises.

**August 2012:** FDA Regulation amended to allow a greater amount of vitamin D into bread and baked goods. The maximum level is increased from 90 to 400 IU/100 grams.

**February 2014:** FDA proposed updates to nutrition facts label on food packages, including a mandatory declaration of vitamin D on the nutrition facts label

**June 2014:** EFSA Commission implementing decision was published authorising the placing on the market of UV-treated baker's yeast (*Saccharomyces cerevisiae*) as a novel food ingredient under Regulation (EC) No 258/97.

**Sept 2014:** Health Canada propose changes to nutrition information on food labels, including mandatory declaration of vitamin D on the nutrition facts table.

**Under review:** Since September 2012, Health Canada is evaluating the possibility of modifying the IMA to allow a greater amount of vitamin D in baked goods (400 IU per 100g instead of 90 IU). ●

## EFSA approves vitamin D yeast for yeast-leavened bread, rolls and fine bakery wares

On 4 May 2012, Lallemand made a request to the competent authorities of the United Kingdom to place vitamin D-enriched UV-treated baker's yeast (*Saccharomyces cerevisiae*) on the market as a novel food ingredient. This vitamin D yeast is intended to be used during the production of yeast-leavened bread, rolls and fine bakery wares and serve as a natural and vegetarian alternative source of vitamin D.

On 12 December 2013, in its 'Scientific Opinion on the safety of vitamin D-enriched UV-treated baker's yeast', the European Food Safety Authority concluded that yeast exhibiting an enhanced content of vitamin D2 is safe under the intended conditions of use.

On June 24 2014, a Commission implementing decision was published authorising the placing on the market of UV-treated baker's yeast (*Saccharomyces cerevisiae*) as a novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council. In near future, yeast-leavened breads, rolls and fine bakery wares sold in the European Union will be allowed to contain a maximum level of 5 µg (200 IU) of vitamin D2 per 100 g of final product. The vitamin D yeast may also be sold on the retail market (as 50 g cubes) for home baking. ●

## The rise and rise of home baking in Britain

With TV shows, books and celebrity chefs all singing the praises of the joys of baking, it seems home baking is enjoying a true renaissance in the UK. At the end of 2012, a research from Mintel on home baking revealed that as many as 41 million Brits (equating to 79% of adults) bake at home. What is more, almost a quarter (23%) of adults bake at least once a week, while an impressive one in twenty (6% – or 3 million) consumers have been well and truly bitten by the baking bug – baking every day. In the last year alone, as many as 22% (equating to 9 million) of home bakers claim to have upped their baking.

The onset of the economic downturn actually helped to kick start the revival in home baking. Indeed, the market for home baking rose a spectacular 59% between 2007 and 2012 to reach £1.7 billion, as Brits engaged in home based activities to save money.

The explosion in the media on the topic has also made home baking more accessible than ever, drawing more novice cooks to the baking aisle and helping the more experienced to develop their baking prowess. Some 44% of Britain's bakers say they have been inspired by cookery shows to bake more, increasing to over half (54%) of the nation's young bakers, the under-25s.

According to Mintel's study, Britain's women remain the official baker at home, with nine in ten (90%) baking. Nevertheless, men are becoming more engaged in baking. Male celebrity bakers such as Jamie Oliver, the Fabulous Baker Brothers and presenter of The Great British Bake Off Paul Hollywood are helping to raise the profile of baking among men. An impressive seven in ten (68%) men bake and almost a quarter (22%) of male bakers are baking at home more than they were a year ago, compared to 13% who are baking less. ●

## Vitamin D: one of the top nutrients for health according to Americans

An Angus Reid survey conducted in 2013 in U.S.A. for Lallemand examined vitamin D in the broader context of health and wellness and the results show that the vast majority of respondents believe that calcium (88%), vitamin D (85%) and fiber (85%) play “a great or moderate role in maintaining or improving their health”. *“Not surprisingly these three nutrients (calcium, vitamin D and fiber) are on top of consumers’ mind, as the latest “Dietary Guidelines for Americans” of 2010, which are the cornerstone of Federal nutrition policy planning and nutrition education activities, classified vitamin D together with calcium and fiber as nutrients of public health concern”,* said Wendy J. Dahl, Assistant Professor, Food Science and Human Nutrition, University of Florida.

When questioned more specifically about vitamin D, it appears that Americans are becoming more aware of its importance in maintaining good health. Indeed, in 2013 85% believed that vitamin D plays a great role in maintaining or improving their health, compared to 76% in 2009. Milk is the food source that most Americans associate with vitamin D (69% of Americans), followed by yogurt (39%) and orange juice (23%) versus breads (8%).

According to the Second National Report on Biochemical Indicators of Diet and Nutrition in the US Population, a larger proportion of Americans have less than adequate intakes of vitamin D. Between 1998 and 2006, the mean 25(OH)D concentrations (a marker of vitamin D status) in the U.S. population decreased by 10%. Approximately 17% of the population had concentrations < 40 nmol/L, the level considered to be associated with a desirable vitamin D intake. ●

## The Basics of Vitamin D

The main biologic function of vitamin D in people is to maintain serum calcium and phosphorus concentrations within the normal range by enhancing the efficiency of the small intestine to absorb these minerals from the diet. Beyond these bone health benefits, other potential roles for vitamin D are currently under intense investigation, and these include effects on muscle strength, the risk for cancer, and the risk for type 2 diabetes. Very few foods naturally contain vitamin D. Fatty fish such as salmon, tuna, and mackerel are among the best sources. Mushrooms provide some vitamin D. In some mushrooms that are newly available in stores, the vitamin D content is being boosted by exposing these mushrooms to ultraviolet light. ●

## Vitamin D yeast creating new opportunities for bakers

Bread has ancient roots, and is a staple of many diets throughout the world, from thriving metropolises to developing nations. Bread deserves an important place in the diet because it is inexpensive, low in fat and provides a range of nutrients. Depending on the ingredients used to make bread, the finished product can contain a range of essential vitamins and minerals. These can include B vitamins, such as niacin, thiamin, riboflavin and folate, as well as other vitamins and minerals such as vitamin D, vitamin E, potassium, calcium, magnesium and iron.

With most people unable to get enough vitamin D from sunlight or foods, scientists are endorsing that bread and other baked goods made with high-vitamin D yeast could fill that gap.

Helping to satisfy consumers’ quest for more natural and vitamin D rich ingredients, during the regular production process Lallemand’s yeast is exposed to a source of light that naturally transforms the sterols present in yeast into vitamin D.

In this way, all Lallemand North American bakers yeasts (Eagle<sup>®</sup>, Lallemand<sup>®</sup>, Instaferm<sup>®</sup>) are non-fortified and vegetarian sources of vitamin D that can enhance the vitamin D content of baked goods, and of bread in particular. ●

## What is the link between pneumonia and Vitamin D

A study published in 2013 looked at vitamin D levels and rates of community acquired pneumonia in a large group of people in the United States. The researchers found that people with the lowest vitamin D levels had more than double the chances of getting pneumonia, compared to people with high vitamin D levels. ●

## Vitamin D2 versus vitamin D3

Vitamin D comprises a group of fat soluble seco-sterols found naturally in only a few foods, such as fish-liver oils, fatty fishes, yeast, mushrooms, egg yolks, and liver. The two major physiologically relevant forms of vitamin D are D2 (ergocalciferol) and D3 (cholecalciferol). Vitamin D3 is photosynthesized in the skin by the action of solar ultraviolet (UV) B light. Vitamin D2 is produced when ergosterol, which naturally occurs in yeast and molds, is exposed to UVB light. Both vitamin D2 and D3 are used in nonprescription vitamin D supplements, but vitamin D2 is the only form available by prescription in the United States. ●

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*Lallemand Baking Update* is produced by Lallemand Inc. to provide bakers with a source of practical information and technology for solving problems. If you would like to be on our mailing list to receive future copies, or if you have questions or comments, please contact us at:

LALLEMAND Inc.  
1620 Préfontaine  
Montréal, QC H1W 2N8 CANADA  
tel: (800) 840-4047 (514) 522-2133  
fax: (514) 255-6861  
email: [baking@lallemand.com](mailto:baking@lallemand.com)  
[www.lallemandbaking.com](http://www.lallemandbaking.com)

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