

# NEWSLETTER



INGREDIENTS  
Your Long Term Partner

BAKERY, CONFECTIONERY & SPECIALITY INGREDIENTS

Q4 2020

Dear Readers,

As the year 2020 draws to a close and with various COVID-19 vaccines being approved and manufactured at a rapid pace, we are hoping to see a more positive and stable 2021 by Q2.

The global pandemic of 2020 caused the largest disruptions to personal and professional life that we have seen in our lifetimes. And while we are hoping for this event to fade into the history books by the end of next year, the lessons it brought forth will certainly not be forgotten. Experts anticipate that the pandemic's psychological influence on individual health will leave a lasting impact on consumer behavior for decades to come. In a recent research survey conducted by Accenture, **81% of consumers are now making healthier, more sustainable or more ethical purchases after COVID-19 with 89% likely to continue after the crisis.**

In alignment with these global health trends which are shaping our world, in this edition of our newsletter we will be exploring various solutions to make bakery, dairy and culinary products healthier. We will also be sharing a new innovative enzyme solution for Arabic flat bread manufacturers to keep a regional favorite, fresher for longer.

Please contact us to discuss any of the solutions presented here in further detail and please let us know if there are other topics you would like us to cover in our next newsletter.

We wish you all a healthy and safe new year!

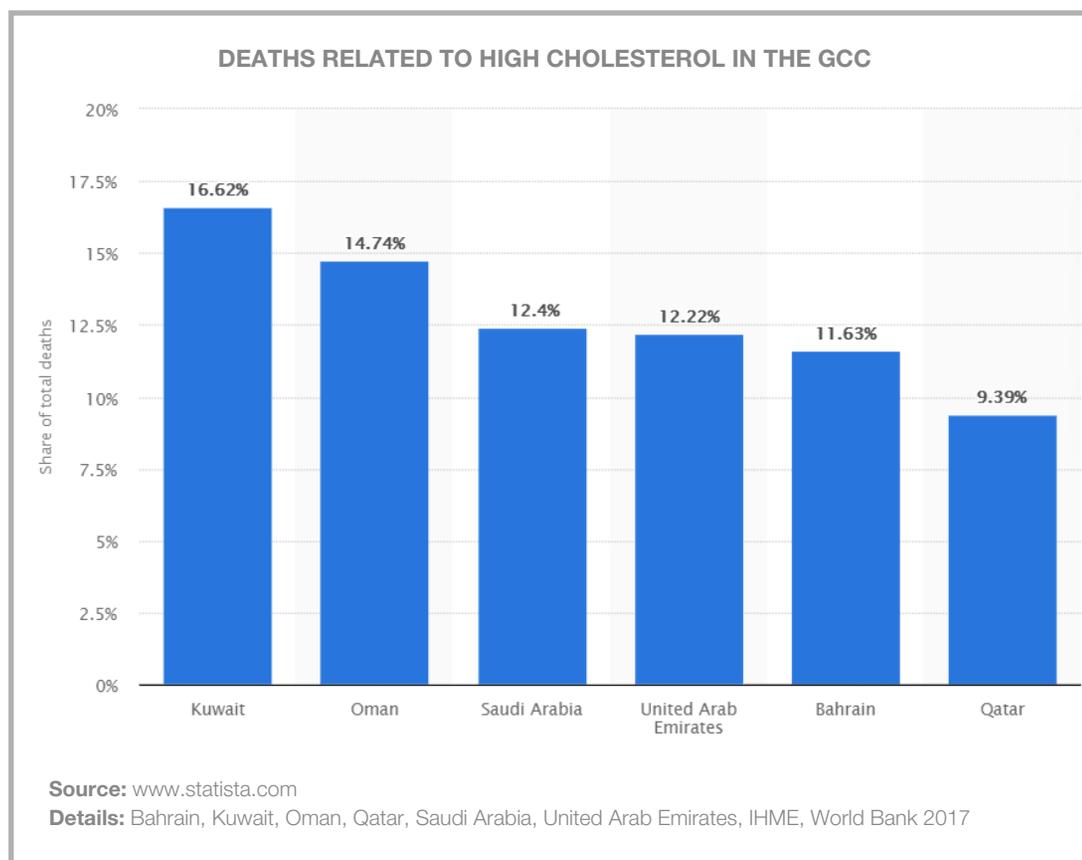
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# Cholesterol Reduction with VIVIDOL® Healthy Fat Solutions

High Cholesterol is a risk factor in the development of coronary heart disease and a major health issue in the GCC with an estimated 43% of the UAE population suffering from the condition and with an average of 15% of deaths in the GCC correlated to high cholesterol.



Scientific studies have shown that phytosterols reduce the uptake of cholesterol and have a positive influence on blood serum cholesterol levels.

To obtain the effect on blood serum cholesterol levels, the daily intake of phytosterols should be between 1 and 3 g. In several countries within the EU, **foods containing phytosterols can make health claims stating the product's cholesterol lowering benefits.**

FSL and AAK have developed **VIVIDOL®** which is a healthy and novel speciality non-trans and non-hydrogenated fat blend solution which contains sterol esters and various beneficial phytosterols. These nutrients made from pine sterols and rapeseed oil are clinically proven to reduce blood cholesterol levels.

The advantages and benefits of **VIVIDOL®** are easy to deliver to consumers by simply adding it to everyday products which enable them to significantly reduce their uptake of cholesterol.

## BENEFITS OF VIVIDOL®

- ✓ **VIVIDOL®** is based on top-quality non-GMO ingredients.
- ✓ The production is monitored by state-of-the-art quality control systems.
- ✓ **VIVIDOL®** has good melting properties and no off-putting taste.
- ✓ AAK provides technical support and tailor-made oil blend solutions for your applications.
- ✓ Liquid product easy to incorporate into application
- ✓ No additives
- ✓ Approved as Novel Food

**VIVIDOL®** is offered in liquid form and has excellent melting properties. It is produced using proprietary processing technology for converting phytosterols to sterol esters, yielding a product that can be incorporated in a variety of food products such as:

- ✓ Baked goods
- ✓ Milk-based products
- ✓ Fermented milk-type products
- ✓ Culinary applications such as spicy sauces, mayonnaise, salad dressings and yellow fat spreads
- ✓ Soya drinks



## Keeping Arabic Flat Breads Fresh with **POWERFLEX** and **POWERFRESH** Enzymes

Kuboos or Khubz is a flat Arabian pita bread / roti made with wheat flour or all-purpose flour. Pita bread can also be made with fiber enriched flour to create a healthier high in fiber staple food. However Arabic bread manufacturers often face challenges to keep breads fresh for more than 2 days as they do not contain any preservative or anti-staling ingredients which would increase the cost of this price sensitive product.

However, freshness and taste will always be king for consumers and the demand for convenience is driving the need for longer-shelf-life solutions. This presents an opportunity for industrial manufacturers to capitalize on market share which was primarily dominated by artisan bakers in the past who produce short shelf-life products.

To achieve success with such a solution, industrial manufacturers needed a recipe which increases shelf life without increasing the costs or by adding chemical ingredients to this basic natural food. At the same time, ingredients manufacturers needed to grasp a deep understanding of the mechanisms which cause flatbreads to lose freshness and become stale.

### RESEARCH AND DEVELOPMENT

The enzyme blend was designed to maintain flatbread softness and freshness for up to four days. A sensory evaluation found that the enzyme blend improved freshness, moistness, foldability and overall liking with a minimal impact on cost due to the low dosage.

The basis for this work is an understanding of the mechanisms that cause flatbreads to lose freshness and become stale. One of the most widely accepted theories concerns starch retrogradation in wheat flour. Starch accounts for 70% of flour content, comprising the polysaccharides amylopectin and amylose in a ratio of 3:1. Immediately after baking, the amylopectin starts to form a crystalline, rigid structure. This structure then also forms associations with amylose. For consumers, the noticeable effect of this process is that the bread crumb becomes gradually firmer and more crumbly.

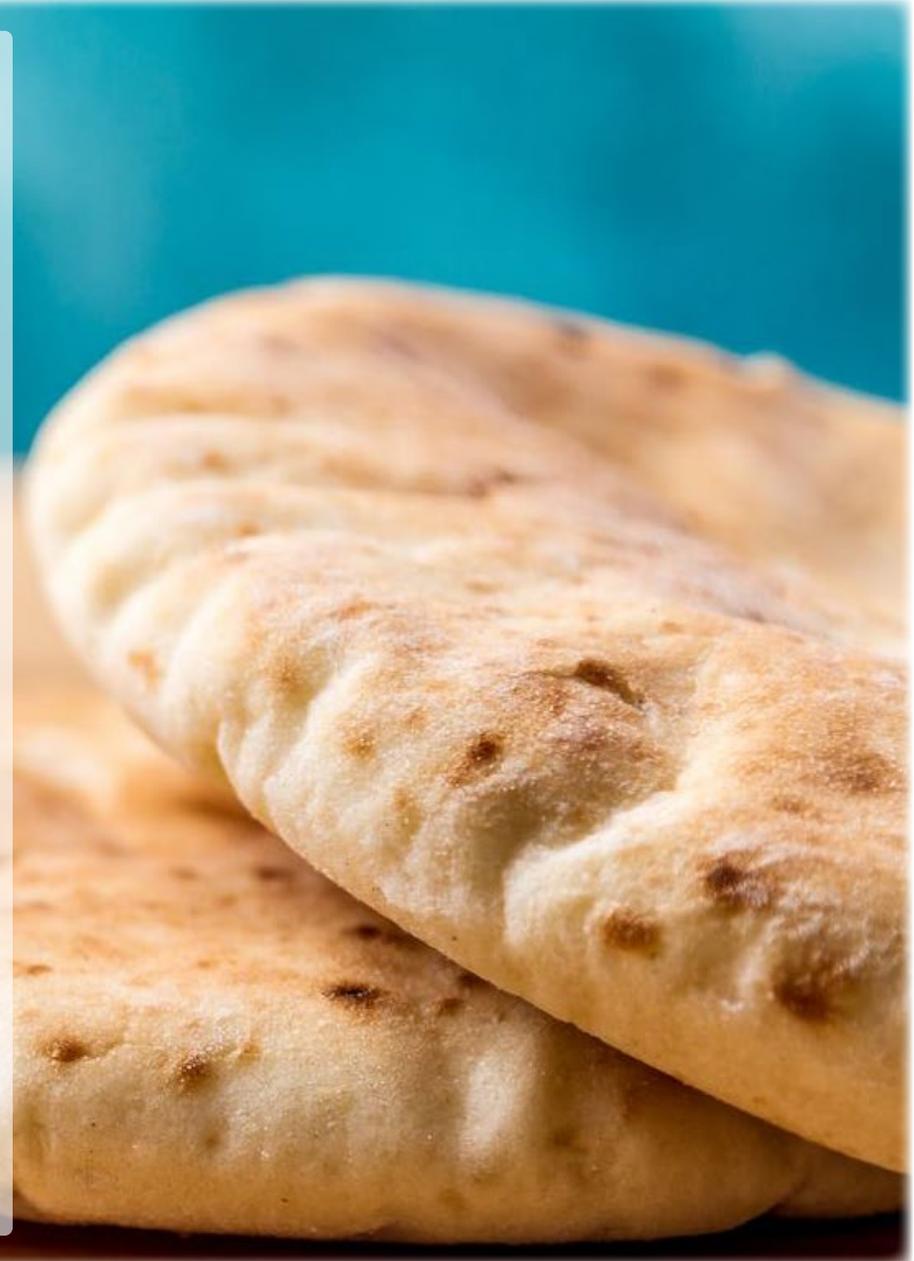
**DuPont and FSL thoroughly researched these staling mechanisms to develop the POWERFLEX and POWERFRESH enzyme range which is a clean-label and affordable solution which maintains the freshness and texture of flat bread applications.**

## TRIALS OBSERVATIONS:

The action patterns of various amylases proved particularly effective in starch modification. Endo-amylases such as fungal and bacterial  $\alpha$ -amylases, primarily hydrolyze starch at random within the amylose and amylopectin molecules. Exo-amylases, which include G4 and maltogenic amylase, act on the non-reducing ends of the starch molecules, cutting off maltotetraose (G4 glucose oligomers) or maltose, respectively. This process delays the recrystallization of amylopectin and consequently the staling of the bread.

The production of convenient flatbreads that break the previous one-day limit on shelf life is a commercially viable possibility. The availability of these powerful enzymes allows industrial manufacturers to enter the previous artisan stronghold of flatbread production. Product freshness will always be critical to consumers, no matter how busy their lifestyles become. Through the use of a tailored enzyme blend, manufacturers can now roll freshness, convenience and a low price into one appealing flatbread. Fresh and longer-life flat bread.

**Please contact us for more details on these solutions. Our technical experts will be happy to assist you further in the application support of this cost effective, clean label and longer shelf-life solution for your traditional Arabic breads and other flat breads.**



## Calcium Propionate and is it Vegan?

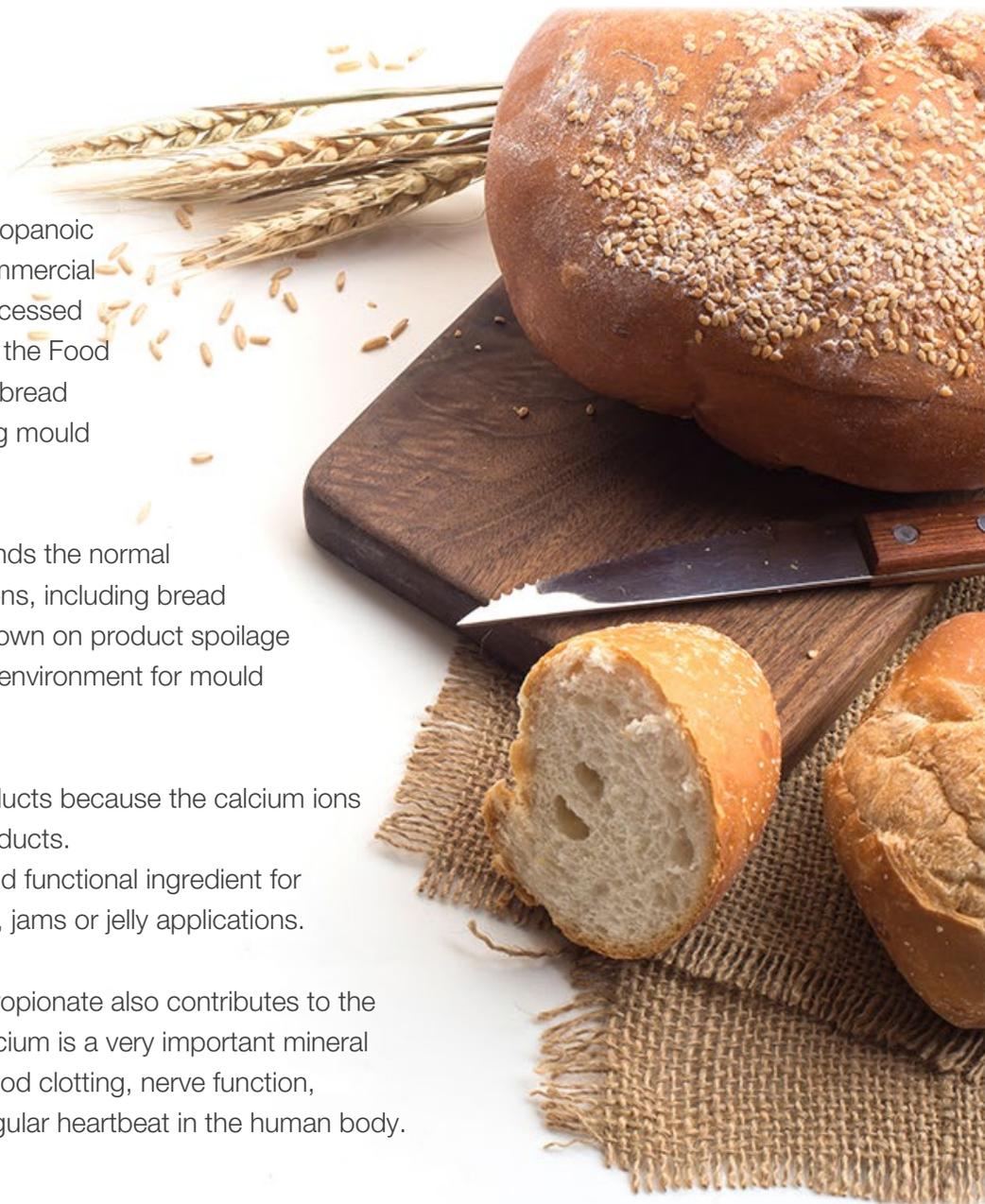
**Calcium Propionate** (also known as E282) is the calcium salt of propanoic acid. It is used as a food preservative and is commonly found in commercial bread and other baked goods. However, it can also be found in processed meat, whey, and other dairy products. It meets the specifications of the Food Chemicals Codex and is generally recognized as safe (GRAS). As a bread preservative, it helps keep baked goods fresher longer by preventing mould and bacterial growth.

By prohibiting mould and bacterial growth, calcium propionate extends the normal shelf-life of bread and baked goods. For large-scale baking operations, including bread that is found sliced, wrapped, or foiled in grocery stores, this cuts down on product spoilage and waste. Ordinarily, the high moisture content of bread is an ideal environment for mould growth. However, calcium propionate severely inhibits this problem.

**Calcium Propionate** is best used with yeast-leavened bakery products because the calcium ions interfere with the chemical agents in non-yeast leavened bakery products.

- ▶ **Calcium Propionate** is also used as a food preservative and functional ingredient for cheeses, confectionery, frostings, gelatins, puddings, fillings, jams or jelly applications.

In addition to preserving foods for longer periods of time, calcium propionate also contributes to the product's nutritional value due to it being a rich source of calcium. Calcium is a very important mineral for the human body which contributes to bone and tooth health, blood clotting, nerve function, hormone and chemical regulation. Calcium also helps maintain a regular heartbeat in the human body.



When it comes to calcium, we often think of dairy products such as milk, cheese, and yogurt. However, calcium is found in many foods, including those supplemented with additional minerals. Perhaps the strongest association with calcium and animal products is why so many people wonder whether calcium propionate is vegan.

**The short answer is yes, Calcium Propionate from FSL and Kemin is vegan.**



With the growing popularity of plant-based diets, there is always concern over reading labels and identifying possible ingredients that may prevent a food from being considered vegan.

**FSL's partner Kemin ensures that their source of calcium is from minerals and propionic acid which are not sourced from animals and which is vegan friendly.**

**Kemin and FSL are committed to keep your product safer and fresher for longer. We leverage our decades of research and experience in food safety to ensure a microbiologically safe product while also ensuring a consistent and well performing antimicrobial solution.**



Kemin's **SHIELD® DRY Calcium Propionate Powder and Granules** are globally recognized and a well-known antimicrobial solution to enhance the quality, shelf-life and freshness of baked goods.

## 1. SHIELD® DRY: Calcium Propionate Powder

### PRODUCT AT A GLANCE

|                           |   |
|---------------------------|---|
| Appearance                | Free flowing powder   |
| Odor                      | Faint propionic acid  |
| Color                     | White to off-white  |
| Assay on dry matter       | Min. 99%*   |
| pH (10% aqueous solution) | 6 - 9   |
| Water insoluble matter    | Max. 0.3%   |
| Moisture content          | Max. 4% by weight   |
| Specific gravity          | 0.3 - 0.5 g/cm <sup>3</sup>                                 |
| Dosage                    | 0.1 to 0.3% depending on application                        |
| Storage and Shelf life    | Storage in a cool, dry and dark place, shelf life – 3 years |

\*Thereof minimum 78% propionic acid

## 2. SHIELD® DRY GRANULE: Calcium Propionate Granule

### SPECIFICATIONS

|                           |   |
|---------------------------|---|
| Appearance                | Granular  |
| Odor                      | Faint propionic acid  |
| Color                     | White to off-white  |
| Assay on dry matter       | Min. 99%*   |
| pH (10% aqueous solution) | 6 - 9   |
| Water insoluble matter    | Max. 0.3%   |
| Moisture content          | Max. 4% by weight   |
| Specific gravity          | 0.6 - 0.85 g/cm <sup>3</sup>                                |
| Dosage                    | 0.1 to 0.3% depending on application                        |
| Storage and Shelf life    | Storage in a cool, dry and dark place, shelf life – 3 years |

\*Thereof minimum 78% propionic acid



## Cleaner Labels without Calcium Salts using GRINDSTED Pectin

As consumers become more health and label conscious, they are seeking healthier sugar reduced options with cleaner labels.

**GRINDSTED Pectin Prime 541** for reduced-sugar jams, fruit spreads and ice creams helps clean up labels by removing the need for calcium salts. Calcium salts are added to low-sugar jams for texturizing purposes. (Pectin, however, must still be declared on the ingredients list.)

Natural batch-to-batch variations in the calcium content of fruit can have a major impact on the texture of the spread. In reduced sugar systems, a limited amount of calcium is added to increase the viscosity and the set temperature of the jam and hence to facilitate the suspension of the fruit and achieve a more appealing texture.

**GRINDSTED** can also be used in reduced-sugar spreads made with fruit juice concentrates and sweeteners, or other fruit-based products such as toppings, fruit sauces, fillings and ice cream ripples.

This product has been developed specifically to meet customer requests, with demand principally coming from European manufacturers of fruit preparations, jams and jellies.

Pectin is usually made on a commercial scale using citrus peels.



Please contact FSL if you are interested in any of the above products or topics:

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