Sodium Reduction: Crackers

Case Study

Summary

A leading cracker manufacturer contacted Kudos Blends seeking a solution to reduce the sodium level in their crackers. A simple 1:1 exchange of sodium bicarbonate for KODA™ potassium bicarbonate significantly reduced sodium content and produced an indistinguishable end-product.

Background

A global food manufacturer reached out to Kudos Blends seeking a solution to reduce sodium in crackers while maintaining brand quality and end-product attributes.

Their sodium target was 700mg per 100g of end-product. Primary attempts at sodium reduction did not provide the required results:

- Replacing sodium bicarbonate with standard bakery-grade potassium bicarbonate negatively impacted flavour and created unsightly 'bicarbonate spotting'.
- Replacing sodium bicarbonate with standard bakery-grade potassium bicarbonate failed to provide the same sensory attributes and all-important texture.
- Reducing sodium chloride (salt) negatively impacted flavour.

What KODA™ 50 Can Do For You

- Reduce sodium in crackers by up to 25% without compromising end-product volume and shape.
- Provide the same signature cracker taste, texture and appearance that customers expect.
- Ensure full dissolution of bicarbonate in low-moisture end products and prevent 'bicarbonate spotting'.
- Replace sodium with the essential mineral potassium to improve the nutritional profile.

Our patented sodium-reducing KODA™ technology is also available for applications such as cakes, cookies, crumpets, tortillas, muffins, pancakes, doughnuts, premixes and many more. To find out more about how to improve the nutritional profile of your baked goods, contact our experts.

Challenge

In crackers, sodium bicarbonate typically accounts for around 25% of the sodium present. As such, the most simple and effective way to reduce sodium is to replace sodium bicarbonate with potassium bicarbonate. However, choosing the right grade is crucial for the success of the project.

Generic grades of potassium bicarbonate can cause 'bicarbonate spotting', whereby the potassium bicarbonate does not fully dissolve within the cracker dough. This unreacted potassium bicarbonate gives an unpleasant taste and a very poor end-product appearance. It imparts a bitter, soapy flavour with a pale and spotted aesthetic. Additionally, it reduces functionality, meaning that there is a loss in overall volume and shape, leaving products with an underbaked and soggy texture.

Optimisation of particle size and prevention of clumping during storage is essential to keep the powder free-flowing, allowing it to fully dissolve in low-moisture batters and doughs.

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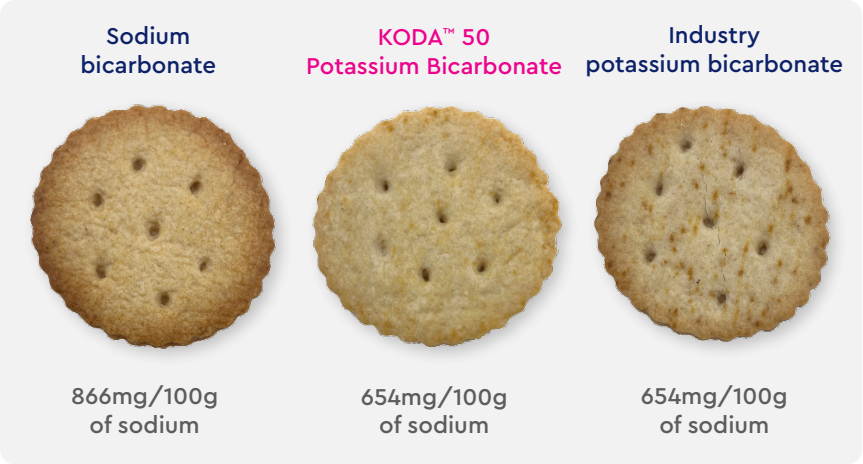
The Solution

Our patented KODA™ technology provides an unrivalled end-product result which not only replicates the functionality of sodium bicarbonate but can also greatly reduces sodium and improves the overall nutritional profile. Its unique, patented manufacturing process ensure it fully dissolves in even the driest doughs to deliver exceptional functionality, while also maintaining free-flowing characteristics throughout its shelf life to ensure easy use.



Triangle Taste Test Comparison

To establish that KODA™ 50 delivers the same flavour profile in baked goods as sodium bicarbonate, a series of controlled taste tests were conducted by an independent research centre.

Three samples were given to taste-testers. Two of them were identical controls, with the third containing KODA™ 50 instead of sodium bicarbonate. Testers were not privy to this information, which allowed us to determine if any differences are truly distinguishable.

The results concluded that making the change from sodium bicarbonate to KODA™ 50 produced an interchangeable end product. This shows that KODA™ 50 not only delivers the same functional benefits as sodium bicarbonate, but it also ensures the same flavour profile is achieved. This allows manufacturers to provide healthier options while maintaining the quality of their products.

Samples	Percentage of correct identifications	Outcomes
Sodium bicarbonate vs KODA™ 50 potassium bicarbonate	27%	Interchangeable
Sodium bicarbonate vs potassium bicarboante	83%	Perceptibly different

ARM & HAMMER™ Performance Products

Proud Distributor of KODA™ 50 and KODA™ 100 Products in the US

Visit our website to request a sample or contact a member of our team to hear more about our versatile solutions:

ahperformance.com | spdahperformance@churchdwight.com