

# Sodium reduction in bakery

## Effective strategies and benefits

Bread is one of the primary sources of sodium in the diet, contributing significantly to daily salt intake. Excessive sodium consumption is linked to hypertension and cardiovascular diseases,<sup>1</sup> making sodium reduction in bakery products essential.

The EU is committed to a **30%** sodium reduction in food by 2030, closely monitoring the development in every country.<sup>2</sup>



### Possible strategies of salt reduction in bakery products Adapted from <sup>4</sup>

- 1 Partial or total NaCl replacement:**
  - a** with sea salt with low sodium content
  - b** up to 20-30% with KCl with no metallic or bitter taste
  - c** with a mix of salts; CaCl<sub>2</sub>, MgCl<sub>2</sub>, KCl, MgSO<sub>4</sub>
  - d** up to 20-30% with other salts: CaCl<sub>2</sub>, MgCl<sub>2</sub>, calcium and magnesium salts as lactate and gluconate
- 2 Use of:**
  - a** encapsulated salt (high reduction may present negative technical effects)
  - b** B4 vitamin with up to 25% reduction without sensory changes
  - c** flavour enhancers (glutamates, yeast extracts, hydrolysed vegetable proteins, nucleotides, aminoacids and fermented sugars)
  - d** sourdough in combination with NaCl
- 3 Gradual reduction over time of NaCl**



**Beyond Sea Salt**  
NuTek Natural  
Ingredients

Maintain dough rheology and bread quality, while preserving the sensory and technological properties of the bread. Nutek's encapsulation technology enables sodium reduction with Beyond Sea Salt even up to 50% without bitter or metallic taste.



**MgCl<sub>2</sub> Crystals**  
food grade  
Nedmag

Increase in dough strength and stability, reduce sodium and improve water absorption capacity resulting in a product with desirable textural properties and enhanced nutritional profile.<sup>3</sup> Nedmag's MgCl<sub>2</sub> salt is highly soluble in water and hygroscopic.

**Potassium (K) & magnesium (Mg) also boost the nutritional value, promoting better cardiovascular health. Postassium helps counteract sodium's adverse effects; Magnesium supports e.g. muscle and nerve function.<sup>4</sup>**

<sup>1</sup> Strazzullo P et al. Salt intake, stroke, and cardiovascular disease: Meta-analysis of prospective studies. BMJ. 2009;339:1-9.

<sup>2</sup> World Health Organization. Massive efforts needed to reduce salt intake and protect lives. 2023 Mar 9

<sup>3</sup> Salovaara H. Sensory limitations to replacement of sodium with potassium and magnesium in bread. Cereal Chem. 1982;59:427-430.

<sup>4</sup> Codină GG et al. Strategies for Reducing Sodium Intake in Bakery Products, a Review. Appl Sci. 2021;11(7):3093.