



BAKING SOLUTIONS

Roquette's sugar alternatives: Synergies for optimised substitution

THE CHALLENGE: SUGAR SUBSTITUTION, TASTE & TEXTURE

The challenge will be to achieve true reduction (even total substitution) of simple sugars while preserving taste, especially sweetness, and texture, given that - as a bulking agent - sugar has an important texture-generating role. To help you meet this challenge, Roquette offers different, highly complementary and tailor-made solutions to sugar substitution.

YOU ARE LOOKING FOR:	No added sugars	Sugar reduction at optimum cost	Calorie reduction	Sweetness (sugar=1)	Gluten-free BULKING agent	Tolerance	Glycaemic response	Fibre +	Clean label
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✓ ROQUETTE SUGGESTS YOU:

NUTRIOSE® 06	✓	✓	✓	<0.1	✓	Best	Low (25) EFSA positive opinion*	85%	✓
NUTRIOSE® 10		✓	✓	0.1	✓	Best		70%	✓
SweetPearl®	✓	✓	✓	0.9	✓	Good	Low (29) 13.1 claim**		
NUTRIOSE® 06 + SweetPearl®	✓	✓	✓	0 - 0.9 (depends on SweetPearl® ratio)	✓	Good to Best	Low	0 to 85%	
NUTRIOSE® 10 + SweetPearl®		✓	✓	0.1 - 0.9 (depends on SweetPearl®)	✓	Good to Best		0 to 70%	

*October 2014: Reduction of postprandial glycaemic response. ** Regulation (EC) n°432/2012

THE TASTE WITH LESS SUGAR

PARTIAL SUGARS REDUCTION



- > A range of dietary fibres (NUTRIOSE® 06 and NUTRIOSE® 10) from wheat or maize
- > Bulking agent with a neutral taste
- > 2 kcal/g
- > Outstanding digestive tolerance
- > Easy to use, with excellent processing and shelf-life stability
- > Gluten-free
- > GMO-free, Kosher and Halal certified

The way to preserve taste and texture with soluble fibre

AS MUCH AS TOTAL SUGARS REPLACEMENT



- > A naturally sweet bulk sweetener produced from maize or wheat
- > Easy to use; 1:1 substitution
- > Bake-stable
- > 2.4 kcal/g
- > Best-tolerated polyol
- > GMO-free, gluten-free, allergen-free
- > Kosher and Halal certified

The way to premium taste, sweetness and texture

APPLICATIONS



Biscuits and fillings
NUTRIOSE® & SweetPearl®



Cake
SweetPearl®



Cereals and bars
NUTRIOSE® & SweetPearl®

NUTRITIONAL & TECHNOLOGICAL FOOD SOLUTIONS
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Offering the best of nature™

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BAKING SOLUTIONS

Rebalancing sugar content

IN DRIED PRODUCTS (biscuits, cereal and cereal bars)



TECHNICAL CHALLENGES TO REDUCE SUGARS IN DRIED PRODUCTS

When substituting sugar in dried products like a biscuit, there are some impacts on sweetness (consumers think less sugar means less taste and enjoyment), on colour (when substituting reducing sugars by non-reducing ingredients), on shape / spreading and on texture.

✓ SUBSTITUTION OF 30% SUGARS IN DIGESTIVE BISCUITS USING DIFFERENT SOLUTIONS



With SweetPearl® and NUTRIOSE®: processing, moisture, colour and surface aspect are identical to the control.

> Thanks to similar physico-chemical properties to sucrose, SweetPearl® is the best sugar substitute in baked goods. > SweetPearl® P200: most similar to the control and less doughy.

> The amorphous structure of soluble fibres acts in biscuits like glucose syrups and partially anti-crystallizes sucrose. NUTRIOSE® 10 offers a pleasant crispiness. It is a clean-label sugar alternative that provides fibres and maintains taste and appearance well.

	Sensory comparison* with control				
	SweetPearl® P200	NUTRIOSE® 06	NUTRIOSE® 10	Polydextrose	Inulin
Texture	preserved	harder	crispy	friable	doughy
Appearance	unchanged	unchanged	unchanged	unchanged	unchanged
Sweetness	the closest	lower	lower	lower	lower

* Roquette trained panel (2015)

✓ TOTAL REPLACEMENT OF SUGARS THANKS TO NUTRIOSE® & SweetPearl® SYNERGIES

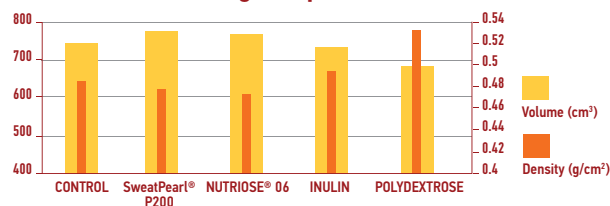


IN SOFT PRODUCTS (cakes)



> The low molecular weight of SweetPearl® is particularly efficient in soft products. In addition to sugar reduction in the end product, volume and texture are preserved.

Substitution of 30% sugar in pound cakes



Cake tasting

CONTROL	++++
SweetPearl® P200	++++
NUTRIOSE® 06	++
INULIN	+
POLYDEXTROSE	++

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