



The *Art* of natural freshness



OxyHeal Sachet

*Protecting the taste, texture, and
quality
of baked goods.*

SUPAC oxygen scavenger sachets naturally reduce oxygen levels inside sealed packaging to below 0.1%, using the moisture already present in baked goods to activate the process.

PROTECTION AGAINST MOLD GROWTH

Common bakery molds such as *Aspergillus*, *Penicillium*, and *Rhizopus* require oxygen to grow and reproduce. Reducing oxygen levels effectively inhibits their growth.

PRESERVATION OF FLAVOUR & AROMA

Fats and oils in croissants, pastries, and enriched doughs oxidize when exposed to oxygen, leading to undesirable rancid or cardboard-like off-flavours.

MAINTAINING SOFTNESS & TEXTURE

Oxygen contributes to staling reactions that accelerate texture degradation and reduce product freshness over time.

By minimizing oxygen exposure, SUPAC helps preserve freshness, flavour, aroma, and texture for longer — without additives, heat, or artificial preservatives.

"Because freshness deserves to last longer"



CHAPTER 01 • PEER-REVIEWED STUDIES

Research Evidence — *Bakery Freshness*

The following published studies document shelf-life extension performance of oxygen-scavenger sachets in bakery applications — across sourdough, white bread, durum wheat and packaged retail products.

NO.	STUDY • SOURCE	PRODUCT TESTED	CONTROL → OS SHELF LIFE	KEY FINDING
01	<i>Springer, 2021</i> <small>J. CONSUMER PROTECTION & FOOD SAFETY</small>	Sliced sourdough bread <small>Stored at 22 °C</small>	<6 d → 18 d <small>N₂ and CO₂ held <1% for the full 18-day study.</small>	High-capacity sachets maintained near-anaerobic conditions throughout the entire storage period.
02	<i>Upasen & Wattanachai, 2018</i> <small>SCIENCEDIRECT • PUBMED</small>	Preservative-free white bread <small>Industrial sliced loaf</small>	3–5 d → 5–7 d <small>OS sachet + low-O₂ pack vs. standard storage.</small>	Even after sachet capacity was reached, mold counts remained lower than control — suggesting a secondary fungistatic effect from iron-oxidation byproducts.
03	<i>Italian durum wheat study</i> <small>CITED VIA RESEARCHGATE</small>	Durum wheat bread <small>Traditional formulation</small>	3 d → ~18 d <small>Six-fold extension under ambient conditions.</small>	OS alone achieved similar results to high-CO ₂ MAP without specialised gas equipment — a significant cost advantage for SME bakeries.
04	<i>Rueegg et al., 2022</i> <small>FOOD PACKAGING & SHELF LIFE 31:100771</small>	Bakery products, general <small>MAP-packaged retail formats</small>	+3 — +9 d vs. MAP alone <small>Additional mold-free days on top of existing MAP.</small>	Adding an OS sachet to existing MAP packaging yielded meaningful incremental mold-free shelf life beyond MAP alone.
05	<i>PMC Review, 2022</i> <small>FUNCTIONAL POLYMER & PACKAGING TECH.</small>	Sliced white bread <small>Active-packaging combination</small>	7–10 d → 30+ d <small>OS sachet + ethanol emitter combination.</small>	Combined active packaging achieved 30+ day shelf life — directly relevant for bakeries distributing to foodservice or grocery retail.

CHAPTER 02 • BY PRODUCT CATEGORY

Shelf Life Increase Across Bakery Categories

Side-by-side comparison of typical unpackaged shelf life and the extension delivered by Supac OS sachets — across six bakery product categories.

BAKERY PRODUCT	WITHOUT OS SACHET	WITH OS SACHET
Artisan & Sourdough Bread Sliced, ambient storage	3–5 days	~23 days O ₂ <0.1%
Crusty Rolls & Buns Room temperature	3–5 days	50 days mold-free OS + 60% CO ₂ MAP
Sliced Bread — Clean Label No preservatives, barrier pack	5–7 days	20–25 days OS + CO ₂ atmosphere
Cookies & Crackers Low moisture	2–4 weeks	3–6 months O ₂ eliminated
Granola & Cereal Bars Ambient, sealed pack	1–2 months	6–12 months Low moisture + OS sachet — industry standard.
Nuts & Dried Fruit Sealed pouch	1–3 months	12–18 months O ₂ eliminated

CHAPTER 3 . COST EFFICIENCY

Let's make it financially sensible



— 01 • THE MARKET

\$11.8B Bakery Market

Baked-goods retail sales in Canada (2024). Exports add another CAD \$7.7B — a sector where margin protection matters.

— 02 • THE RESEARCH

3–9 Extra Mold-Free Days

Oxygen scavengers extended shelf life in bakery products. One study took preservative-free cake from ~1 day to 42+ days mold-free.

— 03 • THE MODEL

Break-even at Just 3%

At 1M packs/yr · CAD 2.50/pack · 7¢ sachet, only a 3% spoilage reduction is needed to fully cover the sachet cost.

— 04 • THE UPSIDE

\$150 K Net Gain at 10%

A 10% spoilage reduction yields +\$150 K. At \$4–6/pack, six figures is reached at just 6–7%.

— SHELF-LIFE EXTENSION

What If Your Bakery Products Stayed *Fresh Longer?*

The answer might surprise you. Head to supac.ca to explore our shelf-life extender solutions and request a free sample — no commitment, just results you can taste and measure.

