BAKING PRODUCTS: HOW IMPORTANT ARE NATURAL LIPIDS AND HOW TO MEASURE THEM?

IMPACT FACTOR: 52%

Back to Flour Series

What Are Natural Lipids?

Wheat flour lipids are the **natural fats and oils** found in wheat grains. Although they make up a **small percentage** of wheat flour (typically **1–2**% of the total weight), they play a **crucial role** in baking, dough structure, and texture.



Why Are Natural Lipids Important?

- **Dough Development:** Lipids help in forming a strong and elastic **gluten network,** improving dough handling and structure.
- **Gas Retention & Loaf Volume:** They stabilize air bubbles in dough, leading to a **better rise and softer texture**.
- **Moisture Retention:** Lipids prevent excessive drying, keeping bread and cakes **soft and fresh** for longer.
- **Flavor & Aroma:** Certain wheat lipids contribute to the **characteristic flavor** of baked goods.
- **Crumb Softness**: They interact with starches to reduce **staling**, ensuring a tender crumb.

Effect of Lipids on Baking

- **High Lipid Content (Whole Wheat Flour):** More fat from the bran and germ, leading to **denser, moister breads.**
- **Low Lipid Content (Refined Flour):** Less fat, giving a **lighter texture** but faster staling.

Though present in small amounts, **wheat flour lipids** are essential for **dough structure, softness, flavor, and shelf life**. They act as **natural emulsifiers**, enhance the **gluten network**, and contribute to the overall **quality of baked goods.**

Why Should We Care?

Lipids impact many baked product characteristics such as Moisture, Size & shape through their interaction with Gluten.

How To Measure Them?

- Content - **SpectraStar™**
- Impact On Gluten Properties **Alveolab®**
- Impact On Dough Properties **Mixolab®**

Lipids Impact On Baked Products Characteristics

The numbers in the table represent the strength of the impact of each **COMPONENT** on the **CHARACTERISTICS** of various baked products:

- **3 = Strong impact / 2 = Medium impact / 1 = Low impact**
- The Impact Factor in rows indicates how strongly a COMPONENT affects a specific CHARACTERISTIC.
- The Impact Factor in columns shows how strongly a COMPONENT influences a particular BAKED PRODUCT.

	Noodles	Flat Bread	Cracker	Pan Bread	Wafer	Wheat Tortilla	Baguette	Hamburger Bun	Pizza Crust	Sponge Cake	Biscuit	Croissant	Steamed Buns	Impact Factor
Color		1	1	1				1		1	1			15%
Size & Shape			2	1	1	2	2	1	1	1	3	1		38%
Volume/Rise	1							1	1	1	1	1	1	18%
Surface	1			1	1	1	1			1			2	21%
Scoring														0%
Puffing		1										1		5%
Thickness		1		1	2	1								13%
Crispness	1		1		1		1	1	1		2	1		23%
Softness	3					1		1					1	10%
Texture	1		2		2	1					2			21%
Elasticity														0%
Stickiness	1	1												5%
Flexibility		1				1								5%
Chewiness	2	2				2		2	1					23%
Springiness				1			1	2						10%
Crumb Texture		1		1			1	2	2	1		2	1	28%
Flakiness			3								1	2		15%
Crumbling			2	2	2					1	1			21%
Slicing				1				1						5%
Moisture		2	2	1	1	1	1	1	1	1	1	1	1	36%
Cooking	1													3%
Water Abso.	1													3%
Staling	2	1	1	1	1	1	1	1	1	1	1	1		33%
Sogginess					1	1		1	2		2	1		18%
Impact Factor	19%	15%	19%	15%	17%	17%	11%	19%	14%	11%	21%	14%	8%	

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