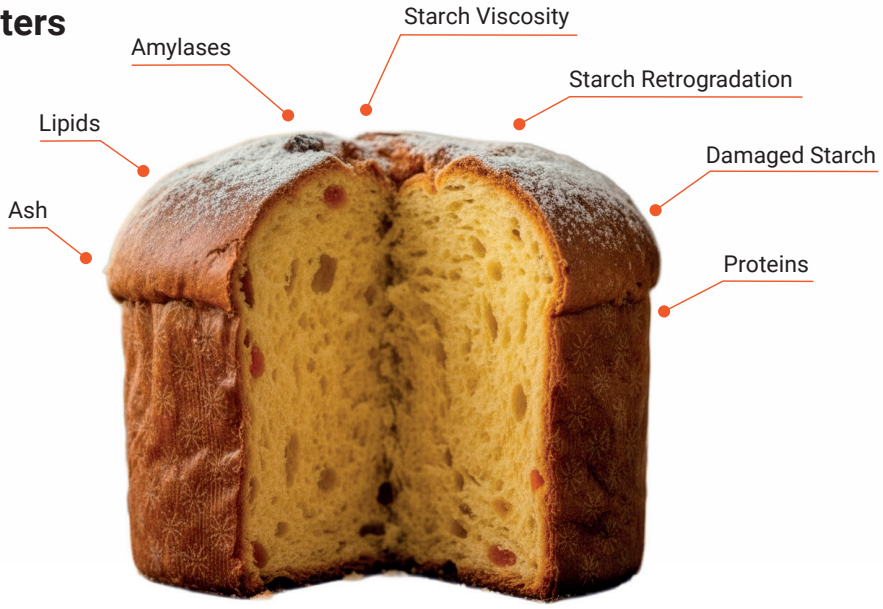
UNDERSTANDING WHAT IMPACTS CHEWINESS OF BAKED PRODUCTS

Back to Flour Series

Why Chewiness Matters



• **Texture & Mouthfeel:** Chewiness enhances the eating experience by adding a pleasant mouthfeel and a satisfying bite, balancing softness and firmness, especially in products like bagels, brioche, and cookies.

• **Sensory Satisfaction:** Chewiness enhances sensory engagement and is often linked to comfort and indulgence, especially in familiar foods like fresh bread or homemade cookies.

• **Freshness Indicator:** Chewiness often signals freshness and good moisture retention. As products lose chewiness, they tend to become dry and stale.

• **Product Authenticity:** Certain products rely on chewiness for their identity, such as bagels, brioche, cookies, or brownies. Without it, they fail to meet consumer expectations.

• **Flavor Release:** A chewy texture allows flavors to be released gradually during chewing.

• **Binding & Structure:** Chewiness supports structural integrity through gluten structure, delivering a firm yet tender texture in pizza and chewy breads.

• **Texture contrast:** Chewiness enhances contrast with crispy or soft elements, creating a more dynamic and enjoyable texture.

• **Shelf Life & Freshness:** Chewy products retain moisture longer and stay fresh and enjoyable for a longer period of time.

Key Flour Components Affecting Chewiness

Key Flour Components	Contribution to Chewiness	Mechanisms
Proteins	22%	Moderate gluten development balances chewiness and softness. Excess gluten can make products overly elastic, while some products require higher protein quantity and quality.
Damaged Starch	22%	Damaged starch has a higher water-absorption capacity, increasing dough hydration and promoting gluten development, which indirectly affects chewiness. Excess levels weaken structure and create gummy textures.
Starch Viscosity	18%	During baking, starch gelatinization contributes to crumb softness and density. Excessive gelatinization overly softens the texture and reduces chewiness.
Amylase (Enzyme Activity)	14%	Amylase produces sugars that support fermentation and dough elasticity. Proper activity maintains chewiness without making the crumb dense or overly elastic.
Lipids	13%	Small amounts of natural lipids improve gluten elasticity and chewiness. Excess added fats tenderize the dough and reduce chewiness.
Ash Content (Minerals)	6%	Higher ash strengthens the gluten network and enhances chewiness. Excess ash increases density and reduces the balance between chewiness and lightness.
Starch Retrogradation	5%	Amylose retrogradation during cooling adds firmness and chewiness, while amylopectin contributes softness. A balance between both is essential for desirable chewiness.

Consistent Impact Across Most Products Impact Varies Significantly by Product Type

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How Flour Components Impact Chewiness of Different Products ?

Chewiness	Starch Viscosity	Starch Retrogradation	Damaged Starch	Proteins	Amylase (Enzymatic Activity)	Ash Content (Minerals)	Lipids
Noodle	3		3	3		1	2
Flat Bread	3	2	2	3	2	1	2
Wheat Tortilla		2	2	3	2	1	2
Hamburger Bun	3		3	3	2		2
Pizza Crust	3		3	3	3	1	1
Pan Bread	3	1	2	3	2	1	1
Baguette	2	2	2	3	2	1	1
Sponge Cake	2	1	2	3	2	1	1
Croissant	2	1	2	3	2	1	2
Steamed Buns	3	2	3	3	3	1	1

3: Strong Impact 2: Average Impact 1: Low Impact

Explore the Back to Flour Series
Connecting Flour Components With Bakery Product Excellence.

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KPM Equipment for Monitoring These Key Flour Components


SpectraStar


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Rheo F4