

Botanical, Nutritional & Functional Profile: Psyllium Husk

Comprehensive Multi-Angle Visual and Technical Analysis of Isabgol



Fig 1. Four-angle high-resolution presentation of premium whole psyllium husk (*Plantago ovata*).

1. Botanical Overview & Taxonomy

Psyllium husk, commonly known as *isabgol*, is derived from the outer covering of the seeds of *Plantago ovata*, an annual herb native to Western Asia and India. Renowned for its exceptionally high soluble fiber content, psyllium husk is widely used as a bulk-forming dietary supplement and functional food ingredient.

The multi-angle visual presentation above illustrates the light brownish-tan, flaky, and fibrous texture of processed psyllium husk flakes, which possess a remarkable capacity to absorb water and form a viscous gel.

Botanical Specifications Family: Plantaginaceae Genus: <i>Plantago</i> Species: <i>P. ovata</i> Harvest Form: Milled seed epidermis (husk)	Key Physical Properties Water Absorption: Up to 40x its dry weight Soluble Fiber: > 85% by dry weight Mucilage Composition: Complex acidic polysaccharides (arabinoxylans)
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2. Nutritional Composition & Fiber Metrics

Psyllium husk is almost entirely composed of dietary carbohydrates, specifically non-digestible soluble polysaccharides that act as a superior prebiotic and physiological regulator.

Nutrient Component (per 100g)	Concentration	Physiological Role
Calories	189 kcal	Minimal caloric contribution
Total Dietary Fiber	85.0 g – 88.0 g	Gastrointestinal bulk & motility
Soluble Fiber	71.0 g	Cholesterol binding & glycemic control
Insoluble Fiber	15.0 g	Fecal mass enhancement
Protein	1.5 g	Trace content

Health Highlight: Clinical studies demonstrate that regular intake of psyllium husk soluble fiber aids in maintaining healthy serum cholesterol levels, supporting cardiovascular health, and promoting normal bowel regularity.

3. Applications in Health and Food Technology

Beyond pharmaceutical laxatives and fiber supplements, psyllium husk is increasingly incorporated into gluten-free baking to mimic the elasticity and moisture-retention properties of gluten. It is also utilized in functional beverages, cereals, and weight-management formulations due to its prolonged satiety effect.