



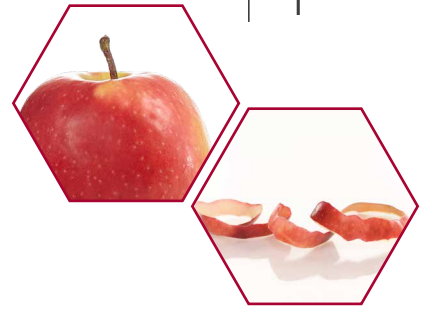
FUNCTIONAL **APPLE FIBERS**

AT A GLANCE

01	A role for functional fibers	S. 1
02	Herbacel® AQ® AFB: A new generation of functional apple fibers	S. 2
03	Easy to use: Activation and functionality	S. 3
04	Product variants: AFB-200 and AFB-250	S. 4
05	Technological fields of application: In-depth application perspective	S. 5
06	Clean Label & sustainability	S. 9
07	Your benefits at the glance	S. 9



01 A ROLE FOR FUNCTIONAL FIBERS



The food industry is undergoing a profound transformation, shaped by clean label expectations, pressure to reformulate, plant-based innovations, and rising demands for texture, stability and sensory quality.

Traditional multi-component solutions such as hydrocolloids or modified starches are increasingly reaching their limits in terms of rising formulation complexity, higher costs, and clean labeling challenges.

Functional dietary fibers are therefore becoming central building blocks of modern food formulations.

HERBACEL® AQ® AFB-200

HERBACEL® AQ® AFB-250



100 percent plant-based food ingredients

Herbafood fibers are derived from gently dried fruits and vegetables. Carefully selected raw materials are mechanically cleaned using a special process and ground to specific particle sizes. The product range extends from fine powder to coarse granules or flakes.

100%
VEGAN



GLUTEN
FREE



100%
KOSHER



100%
HALAL



02 HERBACEL® AQ® AFB

A NEW GENERATION OF FUNCTIONAL APPLE FIBERS

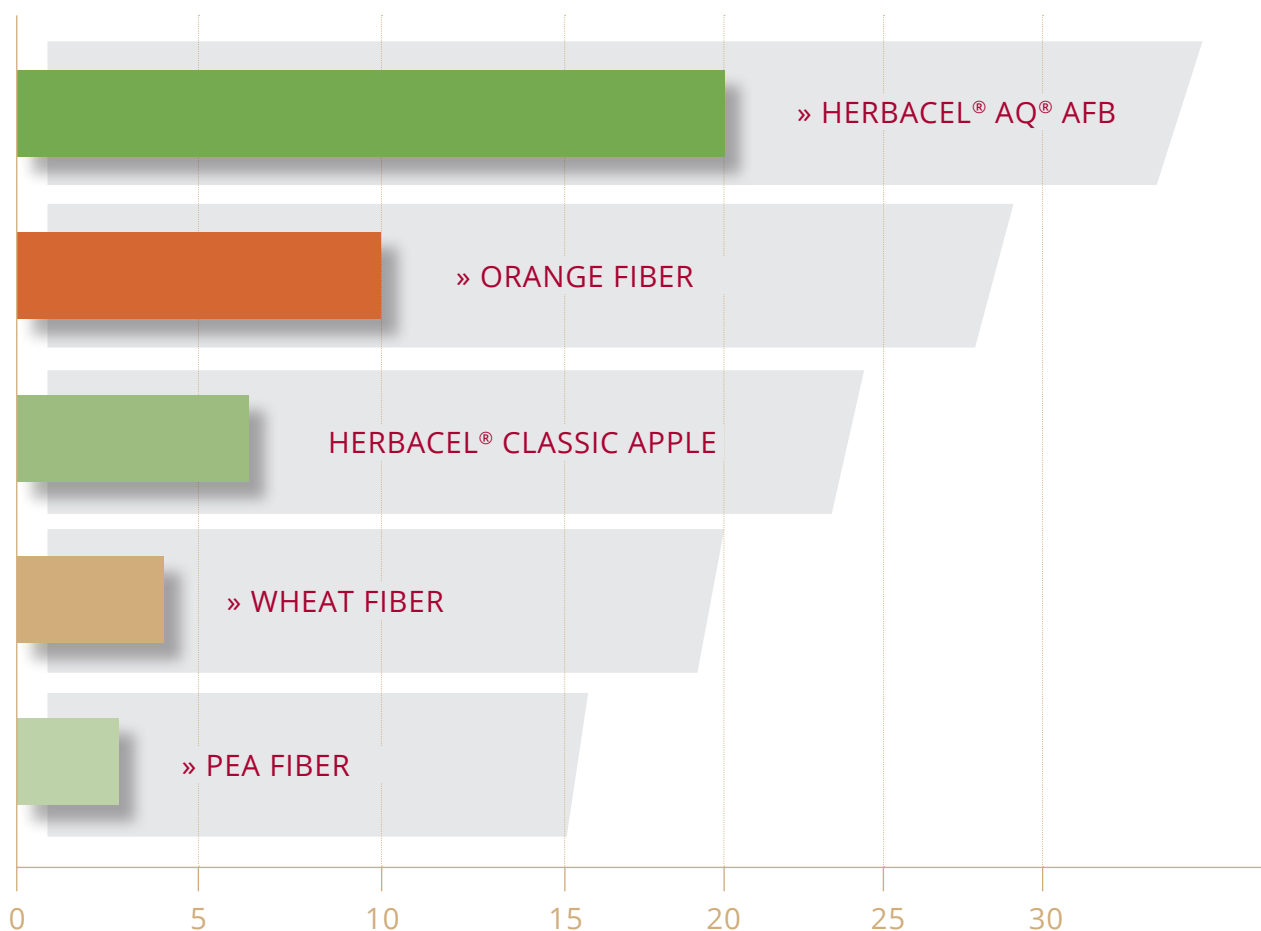
Herbacel® AQ® AFB-200 and AFB-250 are prime examples of functional fiber systems that simultaneously meet multiple technological requirements while remaining compliant with clean label standards.

Key Benefits

- Very high water binding capacity (approx. 20 g of water per 1 g of fiber)
- Rapid swelling in both cold and warm systems
- Process-stable functionality, even under shear
- Simple to labeling as “apple fiber”
- Plant-based, allergen free*, vegan
- In accordance with sustainable manufacturing practices from by-products of pectin production

* acc. to Reg. (EU) No 1169/2011 and Food Allergen Labeling and Consumer Protection Act of 2004 (FALCPA) and Food Allergy Safety, Treatment, Education and Research Act (FASTER).

Waterbinding capacity of highly functional apple fibers vs. other common dietary fibers



03 EASY TO USE: ACTIVATION AND FUNCTIONALITY

The functionality of **Herbacel® AQ® AFB** is based on a capillary fiber network that efficiently absorbs and binds water. Upon hydration, the structure expands and forms a network that imparts viscosity and texture.

Mechanical shear forces, from agitation with a whisk to UHT, enhance fiber activation, increasing viscosity without compromising water retention. This process-dependent behavior clearly distinguishes **Herbacel® AQ® AFB** from traditional fruit fibers.



+ Easy integration into the process



+ Exceptional heat stability



+ High water binding capacity



+ Excellent cold swelling properties

04 PRODUCT VARIANTS: AFB-200 AND AFB-250

HERBACEL® AQ® AFB-200

- + Brownish color
- + Slightly fruity profile
- + High functional intensity
- + Ideal for applications where color can be utilized for technological purposes

HERBACEL® AQ® AFB-250

- + Light-colored, nearly neutral variant
- + Very broad range of applications
- + Particularly suitable for mild or color-sensitive products



TYPICAL VALUE OF FUNCTIONAL APPLE FIBER

Dietary fiber content:	approx. 85 %
Moisture:	max. 10 %
Water binding capacity:	20.0 + 3.0 g/g
Dispersibility:	in cold and hot water
Grain size (90%):	< 300 um

05 TECHNOLOGICAL FIELDS OF APPLICATION IN-DEPTH APPLICATION PERSPECTIVE

Herbace[®]l AQ[®] AFB-200 and **AFB-250** demonstrate their functional capabilities in a wide range of modern food systems. The following categories describe typical technological challenges and illustrate how they can be addressed using functional apple fiber. We would be happy to advise you on customized formulations and potential applications – we're here for you.





Herbace[®]l AQ[®] AFB-250 –
for color-neutral applications



Herbace[®]l AQ[®] AFB-200 –
for golden brown color tone



**Unique water binding capacity of
functional apple fibers**



**Functionality
of apple fibers**
Watch the video

5.1 SAUCES & DELI PRODUCTS

Technological challenges

- + Stabilization of water-oil systems
- + Preservation of body, texture, and viscosity
- + Reduction of solid carriers
(e.g., tomato paste, starch)
- + Homogeneity and sedimentation control

Benefits of Herbacel® AQ® AFB

- Formation of a stable, viscosity-imparting fiber network
- Improved suspension stability
- Support for clean label formulations by replacing complex stabilizers
- Optimization of visual homogeneity

5.2 PLANT-BASED & VEGETARIAN PRODUCTS

Technological challenges

- + Juiciness and moisture retention
- + Structure development in protein-rich or low-protein systems
- + Binding and stabilization of fats
- + Adjusting the texture of vegan/vegetarian alternatives to match that of animal-based products

Benefits of Herbacel® AQ® AFB

- High waterbinding capacity for improved juiciness
- Texture-enhancing properties for bite and mouthfeel
- Enhancement of flavor perception through moisture management
- Process stability under thermal and mechanical stress



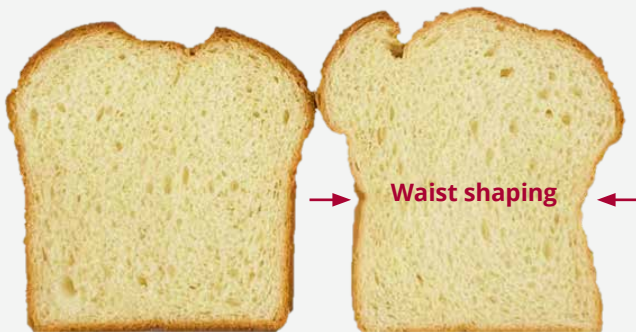
5.3 BAKERY PRODUCTS & DOUGH SYSTEMS

Technological challenges

- + Moisture management during and after the baking process
- + Stabilization of the crumb
- + Reduction of traditional binding agents (e.g., egg, starch)
- + Prevention of dryness and structural defects

Benefits of Herbacel® AQ® AFB

- Stabilization of the dough matrix through water binding
- Improved perception of freshness throughout the shelf life
- Promotes volume development
- Contributes to uniform pore structure



Brioche

20 % butter, 15 % sugar
Dough yield 146
0.5 % Herbacel® AQ® AFB-250

Brioche

20 % butter, 15 % sugar
Dough yield 148
2.5 % carob flour

5.4 MEAT & MEAT ALTERNATIVES

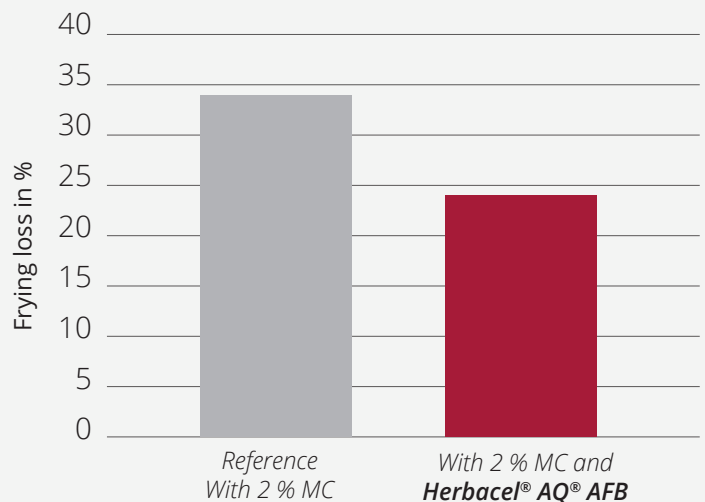
Technological challenges

- + Water retention and reduction of cooking losses
- + Improved texture
- + Stabilization of emulsions
- + Economic optimization through higher yields

Benefits of Herbacel® AQ® AFB

- Building a stable water-fiber network
- Supporting emulsion stability
- Improving juiciness and texture
- Contributing to robust process control

Significant improvement by addition of functional apple fiber Herbacel® AQ® AFB



Frying loss in plant-based patties (with 2 % MC) reference versus Herbacel® AQ® AFB and 2 % MC



5.5 DRINKS, DAIRY PRODUCTS & FRUIT PREPARATIONS

Technological challenges

- + Control of sedimentation in suspensions
- + Mouthfeel and body in reduced-sugar systems
- + Stabilization of fruit particles
- + Viscosity adjustment without labeling disadvantages

Benefits of Herbacel® AQ® AFB

- Creation of a fine, stabilizing network
- Enhancement of sensory richness
- Support for natural texture profiles
- Clean label alternative to traditional stabilizers

5.6 FUNCTIONAL GUMMIES & ENRICHED CONFECTIONERY

Technological challenges

- + Control of surface moisture
- + Stickiness at high active ingredient concentrations
- + Processability and flowability
- + Clean label-compliant dust and dusting systems

Benefits of Herbacel® AQ® AFB

- Natural moisture absorption
- Improved handling and shelf stability
- Supports clear, consumer-friendly labeling
- Suitable for premium functional positioning



06

CLEAN LABEL & SUSTAINABILITY



Herbacel® AQ® AFB meets key requirements of modern product development:

- Labeling: “apple fiber” – simple, clear, and consumer-friendly
- Vegan & allergen free*
- Resource efficient: Use of a byproduct from pectin production
- Reformulation strategies (reducing sugar, fat, salt and unwanted additives)

* acc. to Reg. (EU) No 1169/2011 and Food Allergen Labeling and Consumer Protection Act of 2004 (FALCPA) and Food Allergy Safety, Treatment, Education and Research Act (FASTER).

07

YOUR BENEFITS AT A GLANCE

Herbacel® AQ® AFB 200 and **AFB 250** represent a new generation of multifunctional dietary fibers that go far beyond traditional fiber applications.

They offer:

- Functional performance in modern food systems, such as high water retention, suspension stability and texture enhancement
- Clean label compliance
- Process robustness
- In accordance with sustainable manufacturing practices
- Easy to use

In this way, they enable food manufacturers to meet the growing demands of the market and consumers and to develop innovative, stable, and sensorially appealing products.



HIGHLY FUNCTIONAL DIETARY FIBERS AND APPLE EXTRACTS

Herbafood Ingredients GmbH belongs to the H&F Group and is the pioneer in the field of multifunctional ingredients for the food industry and offers a comprehensive range of functional dietary fibers, with a focus on fruit-derived fibers such as citrus fibers and apple fibers.



Phöbener Chaussee 12 · 14542 Werder (Havel)



+49 3327 785-202



solutions@herbafood.com