

Greetings from

VITACEL®

Dietary Fibers

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Fibers designed by Nature

Today's Health Trend and Mantra is...

Increase Fiber

Reduce Calories

Maintain Appeal

According to World Health Organisation (WHO) and Indian Council of Medical Research and National Nutrition Centre

- We require 30 to 40 grams of FIBER per day.**
- For adults up to age 50 years
for women 25 grams and
for men 35 grams per day**
- Above 50 years
for Women 21 gms and
for men 30 gms. Daily.**

Types of Dietary fibers

Dietary Fiber comes from different sources and is an important part of a healthy diet.

Fiber is often categorized based on its ability to dissolve in water

**There are two types
Soluble fiber and Insoluble Fiber**

Different plant foods have varying proportions of soluble and insoluble fibers.

Dietary Fiber Source

Soluble Fibers are more common in foods such as beans, peas, barley, apples, Carrot and citrus fruits.

Insoluble fiber include Whole wheat or bran products, green beans, potatoes, cauliflowers, lignin and cellulose.

functions and effects of Dietary Fiber.

	Insoluble Fiber	Soluble Fiber
Reduction of the energy density	Marked effect	Marked effect
Reduction of the hunger feeling	significant effect	Marked effect
Lowering of blood sugar levels	significant effect	Significant effect
Lowering of the blood cholesterol level	No effect	Marked effect
Binding of toxic material	Good effect	significant effect
Promotion of intestinal digestion	Marked effect	good effect
Effects on the digestion time	Marked effect	No effect
Fermentation in the colon	No effect	Marked effect

The need for fiber fortification

- The prevalence of CVD (**Cardio Vascular Disease**) remains high even in the United States despite reductions in total and saturated fat intake to levels near government recommendations.
- Furthermore, the rates of obesity and type 2 diabetes have increased dramatically, raising serious concern for public health.
- While many factors undoubtedly contribute to this problem, the study underscores the potential importance of dietary fiber not only to CVD risk but also many other health concerns.

the need for fiber fortification

- Soluble fiber dissolves in water and helps your body absorb vital nutrients from foods.
- Insoluble Fiber acts as a scavenger removes toxic chemicals from our system.
- Insoluble fiber stays in its fibrous form, helps food pass through the digestive system, and adds bulk to the stool, which helps to stay regular.
- It is recommended that our food should have a balanced mix of Soluble and insoluble Fiber.

Different Type of Dietary Fiber

Widely used/available Natural Dietary Fiber's

- ❑ Wheat Fiber. (90 to 96% insoluble Fiber)**
- ❑ OAT Fiber. (90 to 96% insoluble Fiber)**
- ❑ Apple Fiber. (insoluble 45% and Soluble Fiber 15 %)**

These fibers can be easily incorporated in our foods in many aspects..

Opportunities/ Ideas for fiber incorporation in convenience foods

FIBER - Opportunities/Ideas are plenty.

- You can incorporate **Fiber** in most our day to day food, starting from idli, Vada, Chapathi, Roti etc., Oil fried snacks and in most of the maida based sweets also in most of the bakery products.
- **Dietary Fiber** for Nutritional, Functional and Economical benefits.
- Due to the high **dietary FIBER** content and taste neutrality, low calorie products can be produced, also in combination with sugar substitutes and Oil or Fat substitutes.

Opportunities/ Ideas for FIBER incorporation in convenience foods

**With just a small amount,
the desired dietary fibre enrichment or the
functional effect is obtained.**



**There are different types Fibre grades and
combination of Fibre available to be used for
different Product applications.**

FIBER incorporation in convenience foods

- Dietary Fibre can be incorporated in oil fried snacks like Pani Puri, Namkeen, Farsan, Samosa, Kachori, Pagoda, Muruku, Mixture etc., reduces oil intake, increase freshness, increase in volume, fibre enrichment.
- Fiber in Sweets:- Boli, Gulab Jamun, Kajukatli, Sonpapdi and in all maida based sweets.
- Fibre in Naan, Roti, Paratha, Kulcha, Khakra, Papad etc., increase in dough volume.

FIBER incorporation in convenience foods

- **In Frozen Food (Veg and Non Veg) Products helps in freezing and thawing stability, reduces ice crystallisation, increases volume.**
- **Fibre in meat Products, fried chicken, Curry/Dhal for Fiber enrichment.**
 - **Support emulsification.**
 - **volume increase due to water intake by Fibre.**

Functional benefits of Fibers

Dietary Fibers in Bakery products...

- **SOFTNESS** - keeps the bread & cake fresh and soft for longer period by retaining bound moisture in the capillary of the Fiber
- **STRUCTURIZING**- Crumbs falling while cutting or slicing will be minimum as the Fiber will hold it tighter.
- **SHELF LIFE** - increases shelf life in terms of softness.
- **INCREASED YIELD** - of final product especially the weight of Fiber plus water and due to reduction in batter bulk density.
- **FIBER ENRICHMENT** – with 97% Fiber content.

Technological advantage of Insoluble FIBER

Water-binding:

As compared with other products, Fiber does not release the bound up water during the baking process which makes the desired freshness .

Increased dough and batter volume:

A significant volume increase can be seen with as little as a 2-5% addition when compared with regular volume due to extra water absorption depends on the Fiber grade.

Texture improvement:

Through Fiber reinforcement and good fat or water absorption, an improved texture and dough stability is obtained. For this reason, fibers are often used as processing Fiber or aids.

Freezing point protector:

Fiber products prevent the formation of undesired ice crystals and keep the desired consistency and freshness during the freezing and thawing process in frozen dough.

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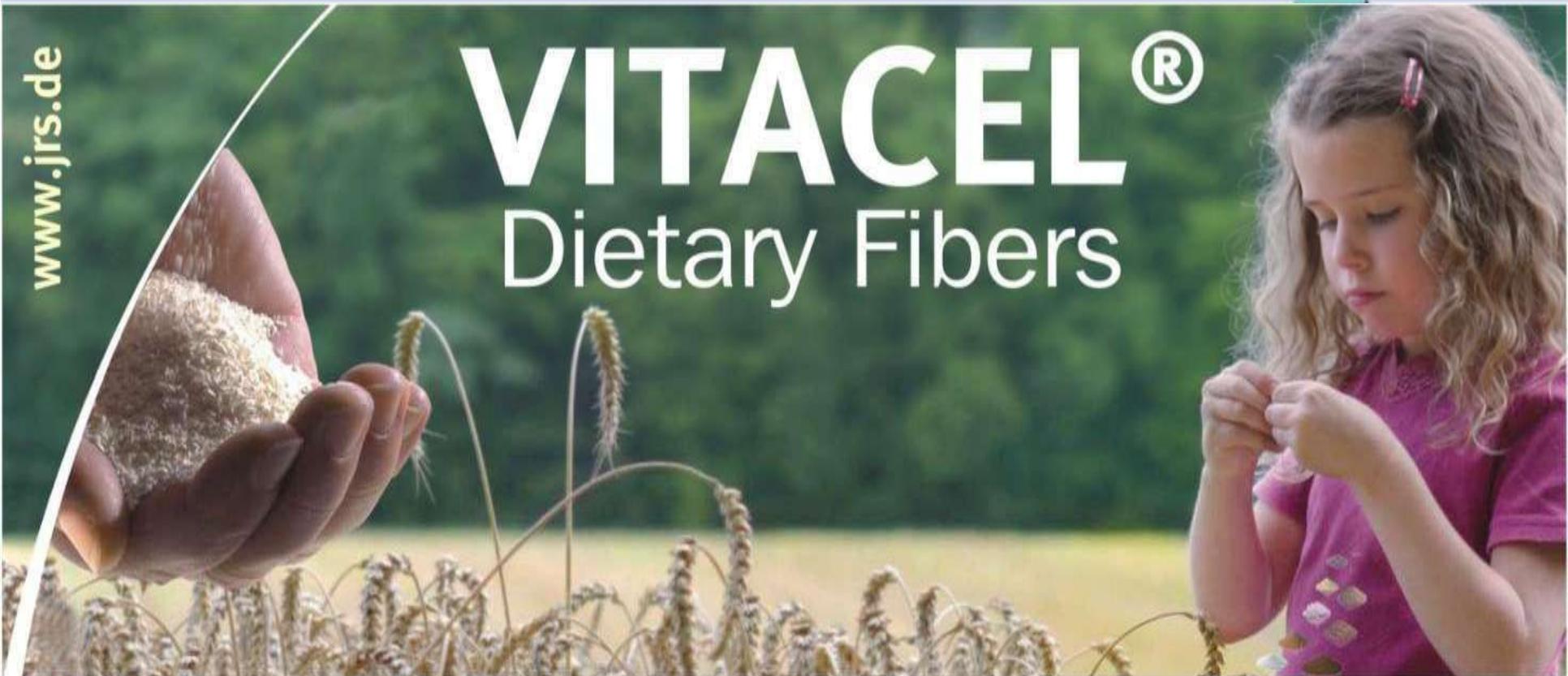


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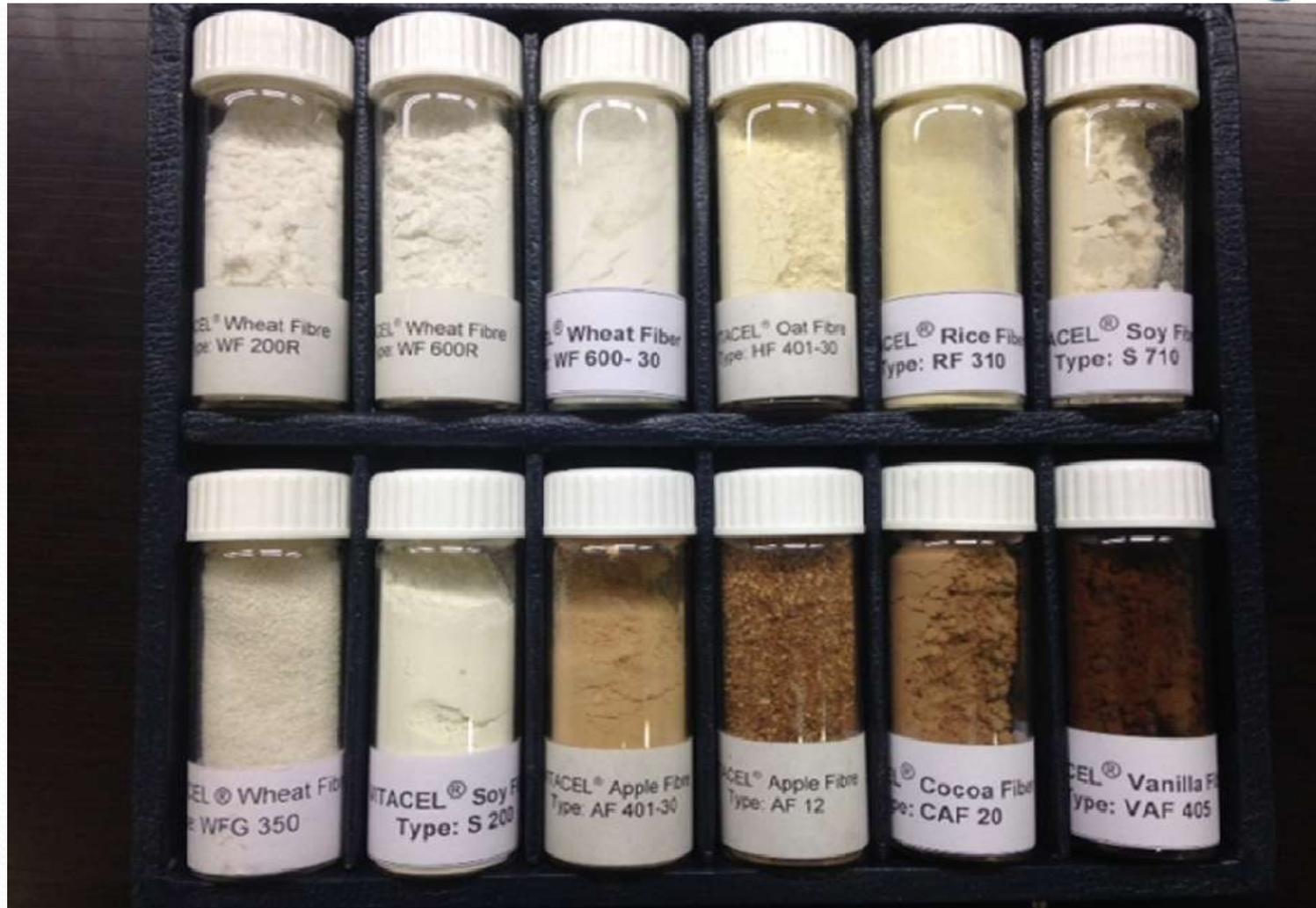
Dietary Fibers



Fibers designed by Nature

- **Established in 1878**
- **Employees > 2100**
- **16 Production Plants in Europe, USA, India, Mexico**
- **3 Locations for R+D in Germany, USA, India**





VITACEL® Wheat Fiber comparison with Wheat Bran (average values in %)

Criteria	Wheat Fiber	Wheat Bran
Origin	Plant	peel
Soluble dietary fibres	3	3
Starch / carbohydrates	-	33
Protein	0.4	16
Fat	-	+
Phytic Acid	-	+
Standard plate count max	max. 10 ³	max. 10 ³ - 10 ⁷
Colour	White	Beige/brown
Taste	Neutral	Spelty/dull
Calorific value (kcal/ g)	0.09	1.5
Total dietary fiber content	98 %	44 %
Water binding capacity	3.5 – 11.00 (in g H ₂ O / g ds)	2



Properties of VITACEL® fibers:

- Neutral Taste and Neutral Aroma
- White to off white colour (except apple fiber)
- 97% Fiber Content depends on the Fiber
- Gluten Free and Non Allergenic
- High water retention capacity depends on the grade
- Improves texture and structure
- Functionality independent of temperature, pH and pressure
- Very High Microbiological product safety
- Shelf life up to 2 to 5 years depends on the grade of Fiber.



VITACEL® Products

- **WHEAT FIBER - insoluble fiber of different grades**
- **OAT FIBER – insoluble of different grades.**
- **APPLE FIBER - mix of soluble and insoluble**
- **MCG – A Colloidal System Fat replacer.**

VITACEL® Successful Product Application

- Fiber enriched products like Marie Biscuits, Cookies.
- Bakery Products like Bread, Bun, Rusk, Cakes, Puff, Khari etc.,
- Most of the Maida based Sweets.
- Oil fried Snacks and kurkure Products like..
- Food pre mixes including Masala mixes
- Application in Ice Creams, Sauce Products etc.,
- Dry noodles, Pasta Products etc.

VITACEL[®] DIETARY FIBERS

Your #1 Global Insoluble Fiber Solution Provider for
over 140 years

FIBER UP YOUR WORLD!

Fibers from different sources

Cereals Wheat, Oat, Rice
Fruits & vegetables Apple, Orange, Pea, Potato, Soy
Plants Sugarcane, Bamboo, Powdered Cellulose and many more....

Varied Applications



Multifunctional Benefits

- Fiber Fortification to meet fiber Claims
- Fat and Calories Reduction
- Enhanced Texture and Structure
- Improved freeze thaw stability in frozen Products
- Better sensorial properties during the Shelf-Life
- Increased Yield
- Reduction of Product Cost
- Label Friendly

Ask our technical experts how they can provide further help to meet your specific finished product goals

Follow the fiber people!!



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Apple Fiber

enriched

Wheat Bread





**Fiber enriched
Bread and Burger Bun**



**FIBER
Enriched
Brown
Bread**

The image shows two rectangular slices of a light-colored sponge cake stacked on a silver metal tray. The top slice is slightly offset to the right. The cake has a golden-brown top surface and a porous, airy interior. A blue rectangular box with a white border is overlaid on the top slice, containing the text 'FIBER Enriched Sponge Cake' in a brown, serif font.

FIBER Enriched Sponge Cake



**FIBER
enriched**

**Fat
reduced**

**WHEAT
Tea Cake**



**Apple Fiber enriched
Wheat Muffins**

Fiber enriched Fat reduced Wheat Puff



**OAT
FIBER
Enriched**

**Oat
Cookie**



**APPLE
FIBER
Enriched**

**RAGGI
COOKIE**

VITACEL® = High Quality Products

DIN EN ISO 9001 Certified Quality



additional:

- Kosher / Halal Certificate
- Organic Certificate
- Quality Seal
- Allergen Friendly (Wheat Fiber)

**For further information about
FIBER availability,
incorporation in Food and Bakery
Products, Recopies' etc.,
You can consult**

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Thank you all