

Dietary Fibers & Functional Additives

VITACEL® VIVAPUR®



**FIBER UP
YOUR WORLD!**

**BAKERY MEAT
DAIRY & MORE**

Healthy.
Tasty.
Natural.
Sustainable.
Safe.

Manufacturer &
Solution Provider

J. RETTENMAIER & SÖHNE
GMBH + CO KG



Fibers designed
by Nature

Solutions for Modern Food Industry

.....

Focused on Today's Consumers' Needs:

JRS Dietary Fibers and Functional Additives support modern food industries with a valuable Modular Toolbox for innovative recipe ideas - assisted by the proven JRS Application and Technology Services. *Ideal base* to fulfill modern consumers' trends, needs and values.

The success of health-oriented food on the market depends greatly on consumer acceptance. With their sensory and haptic properties, the wide portfolio of dietary fibers and functional additives offers optimal solutions for tasty and successful recipes. The different product groups generate dietary values and/or follow functional needs - preferably in synergistic combination.

Sourced by Nature - the complete JRS Product Range is based on re-growing, natural plant raw material.

Customized Solutions: the Modular JRS Toolbox supports individual, customer-specific optimized recipes.

As world's leading manufacturer of dietary fiber concentrates, JRS represents decades of expertise and know-how in production, raw material selection, application and technological service for the benefit of the international food industry.

Follow the Fiber People !



INNOVATIVE RECIPE IDEAS FULFILLING CONSUMERS' NEEDS



Healthy.
Tasty.
Natural.
Sustainable.
Safe.



Fiber Enrichment

Fat Replacer

GMO-Free

Vegan & Vegetarian Products

Longer Satiety

Convenience Food

Gluten and Lactose Free

Sugar Reduction

Calorie Reduction

Healthy Fast Food

Texturizing & Stabilizing Systems

Manufacturer & Solution Provider

.....

Incorporated into the strong, innovative JRS group of companies: For over 140 years, the key competence of the JRS group has been the development, manufacture and marketing of high-value plant fibers for a wide variety of applications in industry and technology.

More than 3.500 employees are successfully engaged for the JRS Plant Fiber Technology - in more than 90 local production and distribution service locations in Europe, America or Asia. Our worldwide sales and logistic network ensures efficiency and closeness to our customers in all major markets.

The JRS Business Unit ‚Food‘ is specialized in the area of modern, health-oriented and technologically advanced food products. Our food engineers, nutritional scientists, biologists, production and application experts work hand in hand on customer specific solutions that are sourced from the rich potential of nature. Innovative, functional and always customer-benefit oriented.



CEO Josef Otto Rettenmaier

A handwritten signature in blue ink that reads "Josef O. Rettenmaier". The signature is written in a cursive style with a checkmark at the end.



THE JRS FOOD COMPETENCE CENTER



21 Production plants in Germany, the US, Mexico and new in France and Italy are specialized in dietary fiber production.
JRS Application Services via pilot plant at Rosenberg headquarters, supported by worldwide JRS network.



Worldwide Headquarters of the JRS Group in 73494 Rosenberg (Germany)



The Modular JRS Toolbox

.....

All modern and industrialized societies display a growing demand in processed food. With an ongoing change of life-style the food consumption focus on high quality products requiring additional choices of health and nutrition benefits. This obligation needs the development and marketing of ingredients summarizing functional and also nutritional benefits and characteristics.

This nutritional need closely associated with the organoleptic expectations of customers is the benchmark for every processed food development. Based on our wide portfolio of **VITACEL®** Dietary Fiber Concentrates – with their high fiber content – and our continuously growing range of high functional **VIVAPUR®** Additives we offer a multitasking modular toolbox with synergistic solutions for modern customers.

Follow the technology leader. JRS's innovative and profitable application in the food industry is a well known 'designed by nature' success story.

Basic Properties

Nutritional Physiological Characteristics

VITACEL® Dietary Fibers:

- Insoluble / soluble fiber
- Digestive support
- Fiber enrichment
- Fat reduction
- Longer satiety
- Reduces energy content
- Counters overweight

Technological Characteristics

VIVAPUR® Functional Additives:

- Universally applicable
- Bright colour
- Neutral in odour and taste
- Excellent flow properties
- Controls moisture level
- Efficient in use
- Application oriented fiber length



Dietary Fibers
Functional Additives

VITACEL®
VIVAPUR® 



High Consumer Acceptance

Clean Label

Nutritional Benefits

Plant Based Raw Material

Economical Solutions

Natural and Healthy

.....

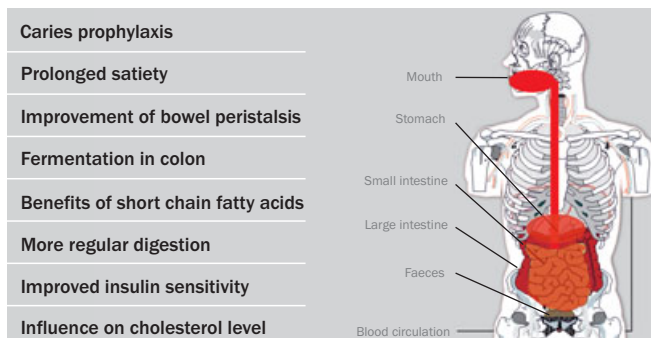


"Dietary Fibers in – Carbs, Fat, Sugar and Calories out!"

Over the last 60 years a growing imbalance in the daily energy intake and energy need has been realized in the western and also in the developing world. This discrepancy can nowadays be noticed in nutritional related challenges. All healthcare systems are considerably groaning under the weight of diabetes, overweight, obesity, constipation, colon cancer and so on. Due to a shift from a physical to a sedentary workload, people need adapted food products - new developments, especially in convenience food. In aspects of reduced energy density, digestive support and satiety promoting factors **VITACEL®** Dietary Fibers offer an interesting tool. While the fiber of the first generation, bran or whole meal flour, were limited on bakery products, this new **VITACEL®** fiber generation allows a much broader application range.

A fiber content of more than 90 %, a white color, a neutral taste, application oriented particle sizes, positive labeling aspects and several other points allowing the usage of these fibers in nearly all food categories. Sourced by Nature - the complete JRS Product Range is based on re-growing, plant raw material.

Positive Effects of **VITACEL®** Dietary Fibers



FOR HEALTHY
MODERN FOOD



A Synergistic Portfolio

.....

Dietary Fibers Functional Additives

The Modular JRS Product Toolbox currently includes well over 350 individual products and has thus been divided into the following areas:

Dietary Fibers

- Wheat Fiber
- Oat Fiber
- Apple Fiber, Organic Apple Fiber
- Potato Fiber
- Psyllium
- Pea Fiber
- Bamboo Fiber
- Powdered Cellulose
- Microcrystalline Cellulose

Functional Celluloses & Hydrocolloids

- Colloidal MCC, Microcrystalline Cellulose Gel
- Hydroxypropylmethylcellulose
- Methylcellulose
- Wheat Fiber Gel
- Alginates **NEW**
- Pectins, Tara Gum & More **NEW**

Specific Compounds

- Fat Replacer
- Bakery Compounds
- Meat Compounds
- Dairy Compounds



Our recommendation:

Professionals use the
No. 1 for smoking

Quality smoking materials –
the original from JRS.

VITACEL®
VIVAPUR®

FOR SUCCESSFUL
MODERN FOOD PRODUCTS



Well-Being and Healthy

.....

VITACEL® 2nd Generation Dietary Fiber Concentrates are plant based with a total dietary fiber content of up to 99 %!

The majority are insoluble natural fibers which are extracted and isolated from the structure-forming parts using a complex, precisely defined thermo-physical process.

Based on their excellent, type-specific properties practically all areas of the food industry benefit from this long-term concept. Allowing a ubiquitous fiber usage **VITACEL®** products have revolutionized the insoluble dietary fiber market.

VITACEL® comprises a wide-ranging product portfolio with varying properties and functions. Within the individual type families we offer up to ten different fineness grades, ranging from 20 to 500 µm fiber length.

Dietary Fibers

insoluble, soluble, natural



VITACEL®
Wheat Fiber



VITACEL®
Oat Fiber



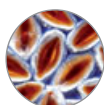
VITACEL®
Apple Fiber,
Organic Apple Fiber



VITACEL®
Potato Fiber



VITACEL®
Pea Fiber



VITACEL®
Psyllium



VITACEL®
Powdered
Cellulose



VITACEL®
Bamboo Fiber



VIVAPUR® MCC
Microcrystalline
Cellulose



DIETARY FIBERS

FIBER UP YOUR WORLD



Highly Functional, for Better Product Reliability

.....

New developments in the dairy and delicatessen area require highly functional, cost-efficient and easy to use ingredients for heat protection, as thickeners, fat replacers, stabilizers or gelling agents. Products based on organic raw materials have an advantage in this regard and can score on several functionality levels. In addition to classic food fibers the product portfolio includes the **VIVAPUR®** Colloidal Systems developed by JRS which are part of the family as well as **VIVAPUR®** Methylcellulose (MC) and **VIVAPUR®** Hydroxypropylmethylcellulose (HPMC) as cellulose-based hydrocolloids.

Application focuses for colloidal systems	
Particle stabilization	Chocolate, soy and cereal drinks, cream and non-dairy whipped cream
Thermal stability	Bake stable fillings and products
Foam stabilization	Mousse desserts, cream and non-dairy whipped cream, ice cream
Fat replacement	Dairy and delicatessen products, meat products

Application focuses for HPMC and MC	
Thermal gelling	Gluten-free bread and bakery products, formed potato products, formed vegetable products, formed meat and fish products with low protein content
Surface activity	Mousse desserts, ice cream, non-dairy whipped cream

Functional Celluloses



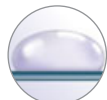
VIVAPUR®
Colloidal MCC,
Microcrystalline
Cellulose Gel (MCG)



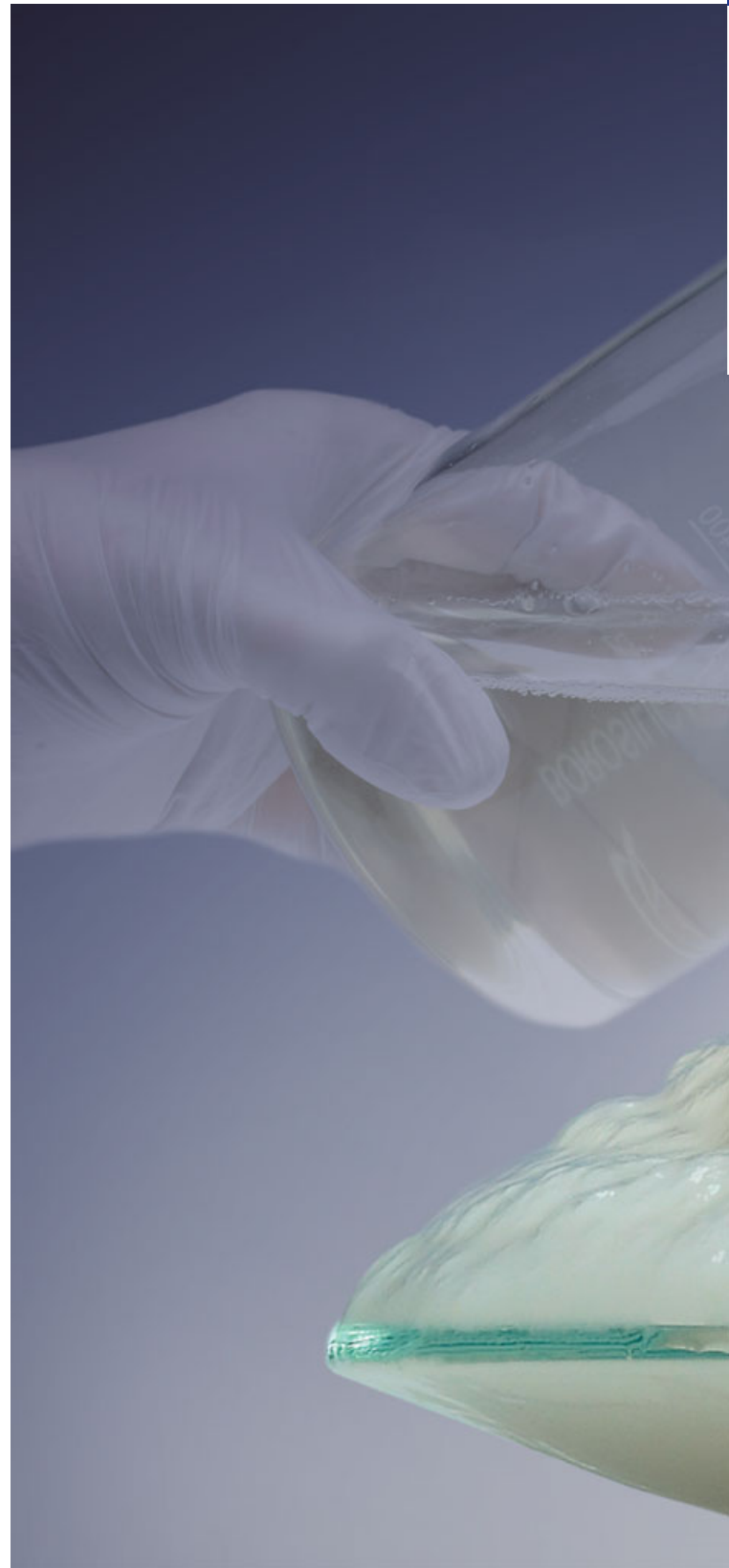
VIVAPUR®
HPMC



VITACEL®
Wheat Fiber Gel

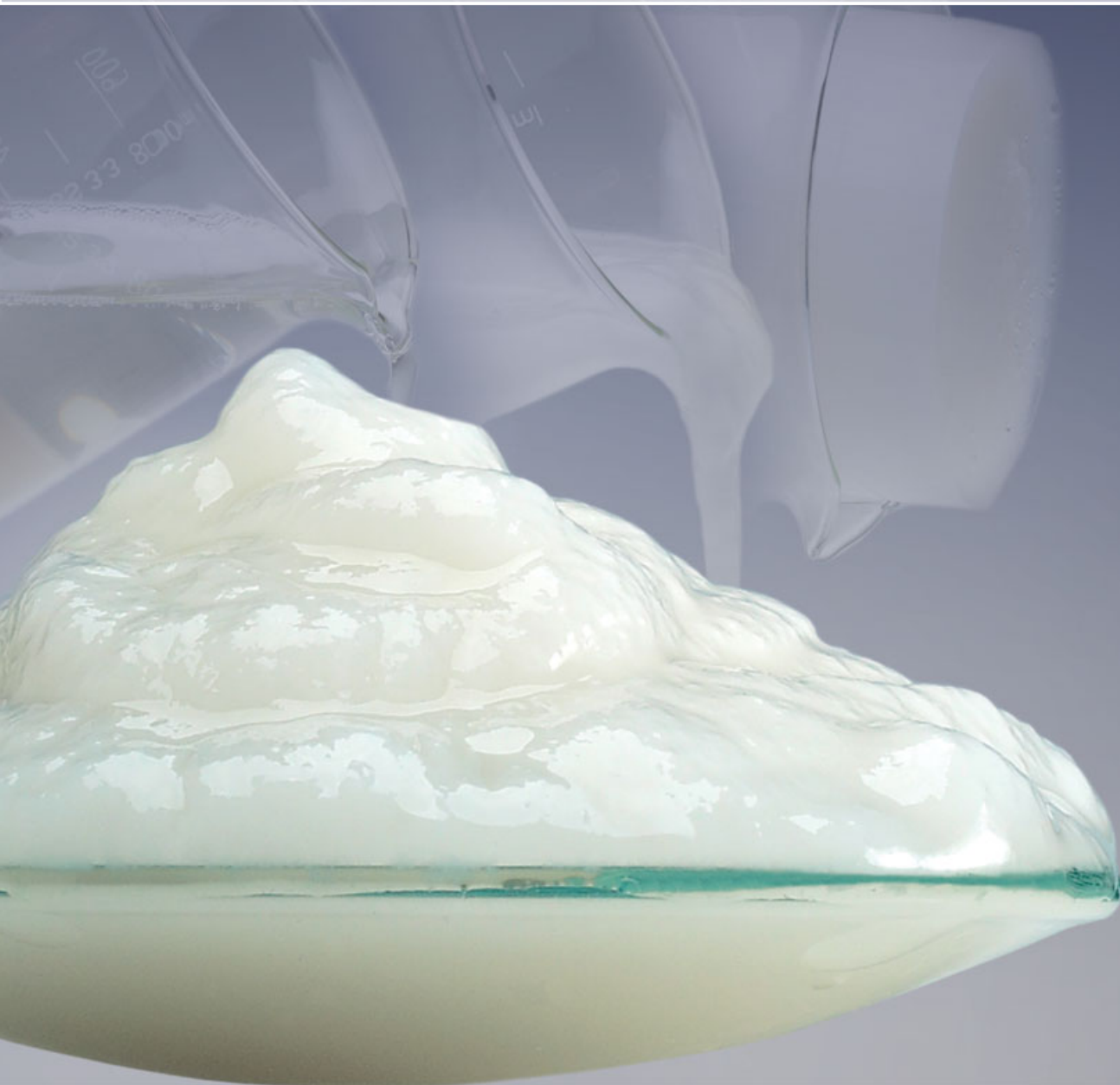


VIVAPUR®
MC



FUNCTIONAL CELLULOSES

MADE FROM RE-GROWING PLANT RAW MATERIAL




NEW in the JRS Toolbox

.....

As a leader in insoluble dietary fibers and functional food hydrocolloids the JRS Group is pleased to strengthen its manufacturing portfolio with alginates, pectins, tara gum and synergistic functional texturizing & stabilizing systems. JRS invests in development and production of plant based texturizing solutions with high consumer acceptance to respond to the increasing demand for label friendly food ingredients.

The JRS European Alginate Range performs an essential functional role in a wide variety of food products. Derived from a rich field of brown algae just off the regional French Brittany coast, these special **VIVAPUR®** Alginates comprise thickening and gelling agents which add the viscosity, texture and stability required for individual applications. All alginate production takes place at our JRS plant in Landerneau, France.

The Portfolio of  SILVATEAM Ingredients Srl., Italy with VIVAPUR® Pectins, Tara Gum & More in particular complements JRS's alginate and cellulose product lines in a synergistic way and enables to offer speciality solutions by extended functional texturizing systems to enhance our leadership position for plant based and label friendly food ingredients. We offer a wide portfolio of high-/low-esterified and amidated pectin grades, customer-specific grades and convenient functional systems.



ALGINATES, PECTINS, TARA GUM & MORE

TEXTURIZING & STABILIZING SYSTEMS



Tailor-Made and Highly Efficient

.....

Tailor-made, Synergistic Functional Compounds:

Even more functionality, efficiency and cost effectiveness – systematically.

Perfectly matched, ready-to-use mixtures based on our products facilitate state-of-the-art solutions for many individual recipe and function applications – e.g. for bakery, meat, dairy products and many other fields.

Benefit from our many years of know-how and our core competence in the most modern special milling and mixing technology as well as customer-specific recipe development.

Our technological support will ensure your head start in the market !

Let's bring together what belongs together – we are happy to provide you with detailed advice.

Specific Compounds



Fat Replacer
Systems



MEAT
Compounds



BAKERY
Compounds



DAIRY
Compounds



SPECIFIC COMPOUNDS HIGHLY FUNCTIONAL BLENDS



B+



M+



D+



From Customer Benefit to Business Success

.....

Good product ideas must lead to marketable customer benefits – that's the credo that we've followed with the **VITACEL®** and **VIVAPUR®** program from the very beginning. JRS is an innovative partner and creative mentor providing with a competitive edge in the hardfought competition.

This comprehensive know-how and many years of experience is available to you. From application advice and formulation development to process optimization and own technology, including for meat, bread and bakery, pasta or dairy products, our competent specialist and application team is your partner for all issues relating to the JRS plant fiber technology.

In close cooperation with our customers individually adjusted and optimized prototypes are developed in our application pilot plant. Ideas from nature - transformed successfully into new products!

Awarded results: the German Agricultural Association DLG honored products from JRS meat pilot plant already several times.

(*) DLG = Deutsche Landwirtschafts-Gesellschaft
e.g. 4x GOLD in 2018



APPLICATION SERVICES SYSTEM and TECHNOLOGY PARTNER



Global JRS Manufacturing Network

.....

Quality From the Start:

21 highly specialised and appropriately certified production facilities guarantee highest quality and efficiency. Based on GERMAN engineering and high quality production technology.

Providing secure, reliable coverage of worldwide demand. Security based on multiple options. JRS stands for security, reliability and a long-term investment and growth philosophy.

In accordance with our high quality standards, our production plants are certified, e.g. to ISO 9001, FSSC ISO 22000 and HACCP. Customer specific audits confirm the high level of the JRS quality system.

The basis of our products are renewable raw materials from assured, continually available sources. As a result, our logistic and procurement concept guarantees high standards in industrial quantities.



SPECIALIZED PRODUCTION

SAFE, RELIABLE, STATE-OF-THE-ART



21 Food
Certified
Production Sites

in Germany,
USA and Mexico,
New in
Italy and France



NEW

European Alginates from JRS Factory
Landerneau, France

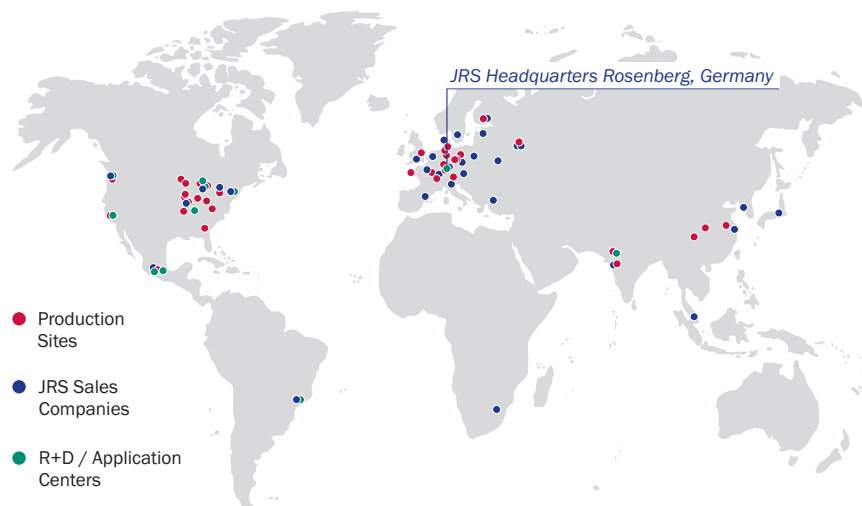


NEW

Manufacturer of Pectins;
JRS Silvateam Ingredients Srl., Italy

Worldwide at Home – JRS's Professionals are Always on Site

JRS – YOUR Qualified Partner – worldwide



Worldwide logistics and presence

High availability and efficient fiber production

In-house research and development, application services

Decades of experience and comprehensive application know-how

Quality manufacturing according to ISO 9001

