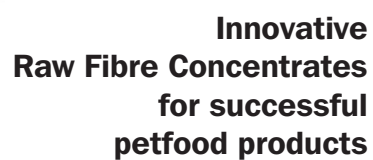


Natural Raw Fibre Concentrates





ARBOCEL®

Natural Raw Fibre Concentrates

ARBOCEL® - multifunctional Raw Fibre Concentrate

What is ARBOCEL® ?

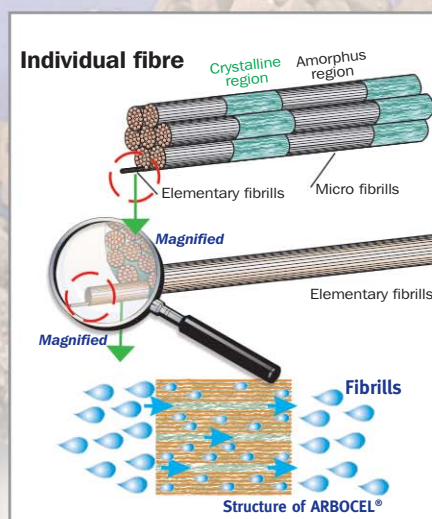
ARBOCEL® raw fibre concentrate is the purest and highest concentrated source of fibre available. The neutral fibre for all species of animals even in high dosages, **ARBOCEL®** shows no negative influence on colour, consistency and palatability. The success of **ARBOCEL®** raw fibre concentrate is its perfect combination of nutritional and functional / technological properties that helps producing highest quality petfoods in a most economical way.



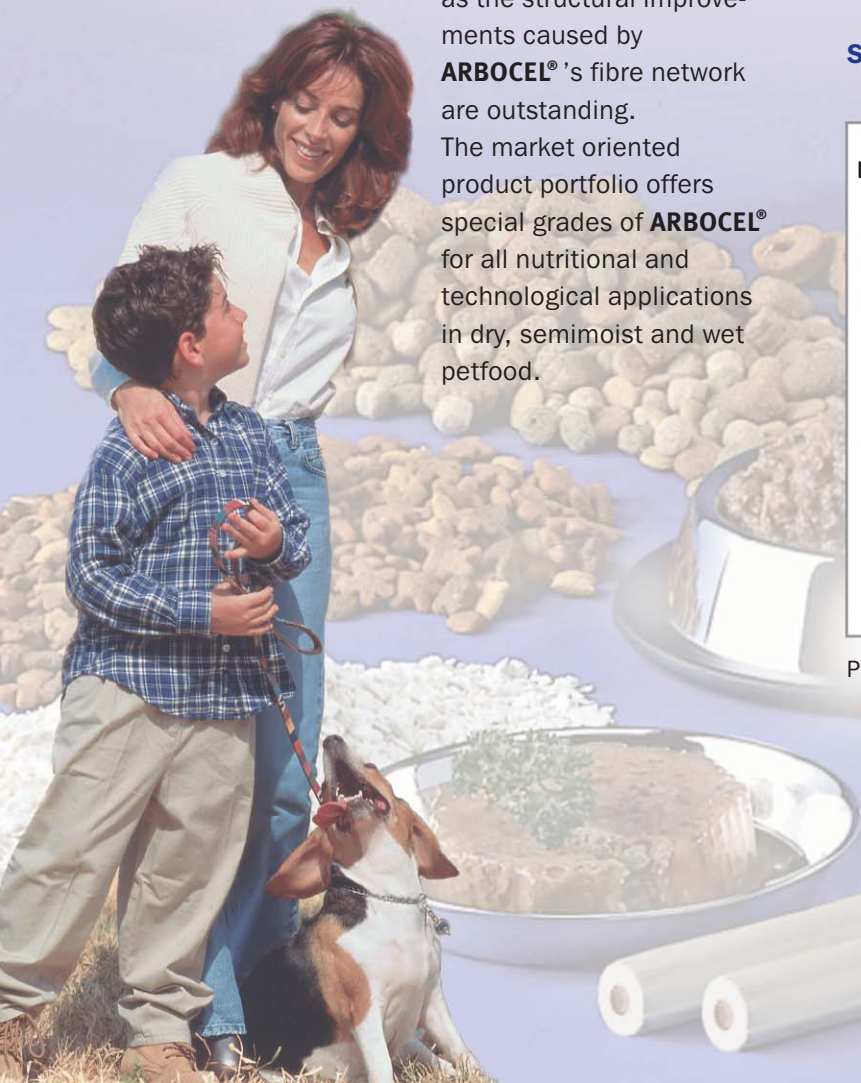
In all variations of petfood the perfect water and fat binding properties as well as the structural improvements caused by **ARBOCEL®**'s fibre network are outstanding.

The market oriented product portfolio offers special grades of **ARBOCEL®** for all nutritional and technological applications in dry, semimoist and wet petfood.

Structure of cellulose



Physical fibre structure of **ARBOCEL®**





ARBOCEL® - convincing product variety

How does ARBOCEL® work?

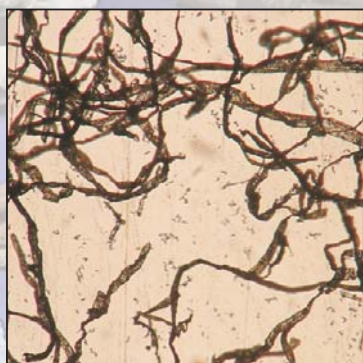
ARBOCEL® consists of systematically aligned cellulose chains, which in turn are made up of glucose molecules. They are bound together β -1.4 glycosidically, which makes them indigestible for humans and most of our pets. It is possible to bind water to the OH groups of glucose molecules by way of hydrogen bonding. Liquid is also stored in the fibre capillaries, i.e. in the spaces between the individual fibrills.



REM magnification of a 200 μ m fibre

Both oily and aqueous solutions can be absorbed here. Due to this, the **ARBOCEL®** fibres are supporting emulsifiers and hydrocolloids without being soluble themselves.

Dispersed under shear forces **ARBOCEL®** fibres are forming a three-dimensional insoluble fibre network which helps to improve texture and stability of the final product.



REM magnification of a 2000 μ m fibre



ARBOCEL® - neutral in palatability - outstanding in performance

Advantages of ARBOCEL® in pellets / extrudates

- Raw fibre enrichment
- Calorie-free filler i.e. for diet food
- Improved stability of extrudates and pellets
- Considerably less abrasion due to the improved surface structure
- High water- / oil retention
- Prevents oil leakage
- Faster and even drying process due to fibres drainage effect
- **ARBOCEL®** is widely pressure and temperature resistant and there is no danger of it burning or colouring under extreme extruder parameters
- Excellent healthy aspects i.e. for **dental hygiene** and **hairball diets**

Preferred types: **ARBOCEL® B 600; BWW 40; BWW 40 C.**



Advantages of ARBOCEL® in semi-moist products

- **ARBOCEL®** creates the desired "meat like" texture and helps forming the desired structure of the end product
- Shelf life is positively influenced due to prevention of water separation
- Rich in raw fibre and calorie-free, therefore perfect for treats
- An increase in water and fat binding capacity has been achieved through the specific capillary effect, whereas the microbiological stability (a_w -value) is not negatively affected

Preferred types: **ARBOCEL® BWW 40; BWW 40 C**





Advantages of ARBOCEL® in wet petfood



- Very high water and fat binding capacities
- Insoluble fibres imitate meat fibrills
- Perfect meat like structure
- Better structure i.e. of fine minced or reconstructed produced, i.e. patés
- Reliably prevents syneresis and gel separation
- **ARBOCEL®** shows synergistic effects with emulsifiers and hydrocolloids
- **ARBOCEL®** is stable even in difficult pH and heat conditions

Preferred types: **ARBOCEL® BC 1000; FIF 400; BWV 40; BWV 40 C.**

Advantages of ARBOCEL® in snacks & treats

- Adds no calories to the formulation
- Less breaking in baked products
- Ideal dental hygiene effects
- Multifunctional properties (i.e. stabilisation of texture, anti-hairball effect...)
- Stabilizing effect i.e. in fillings for coextruded products

ARBOCEL® is most suitable for manufacturing of special petfoods, such as dietary products for elder animals, high energy diets, sensitive diets, dental hygiene products or drinks.



ARBOCEL® - multifunctional Raw Fibre Concentrates

The appropriate type to use

The difference between the individual types of applied **ARBOCEL®** fibre is principally distinguished by the fibre length and the raw material. The longer the fibre, the greater its ability to bind water and fat. The a.m. three-dimensional fibre network is stronger the longer the fibres are. More cross-linkage in such a network improves stability. The longer the fibre the higher its functionality however on the same time

long fibres show very low bulk density (15-20 g/ltr) and a very fluffy character why they are limited in their use. Shorter fibres, for example, are more suitable for use in an extruder, whereas it is mainly longer cellulosis fibres with a fibrous character that are used in the production of chunks.

Improving faeces consistency - improving intestinal health
0.5 - 1.5% ARBOCEL® BWW 40, BWW 40 C, RC
Reduce abrasion in extruded products
0.5 - 2% ARBOCEL® BWW 40, BWW 40 C
Increase oil-binding capacity and prevent oil leakage
1.2 - 2% ARBOCEL® RC
Dental hygiene products
2 - 6% ARBOCEL® BWW 40, BWW 40 C, BC 1000, FIF 400, FT 400
Hairball products
4 - 12 % of ARBOCEL® BWW 40, BWW 40 C
Low calorie diets/ senior food
1.5 - 18 % of ARBOCEL® B 600, BWW 40, BWW 40 C
Texturizing chunks and pates
0.5 - 2% of ARBOCEL® BWW 40, BWW 40 C, BC 1000
Stabilize fillings
0.5 - 10% of ARBOCEL® B 600, BWW 40, BC 1000

Please consult our technical application team:

E-Mail: petfood@jrs.de

Phone: + 49 (0) 79 67/15 2-260



ARBOCEL® - product advantages for your success

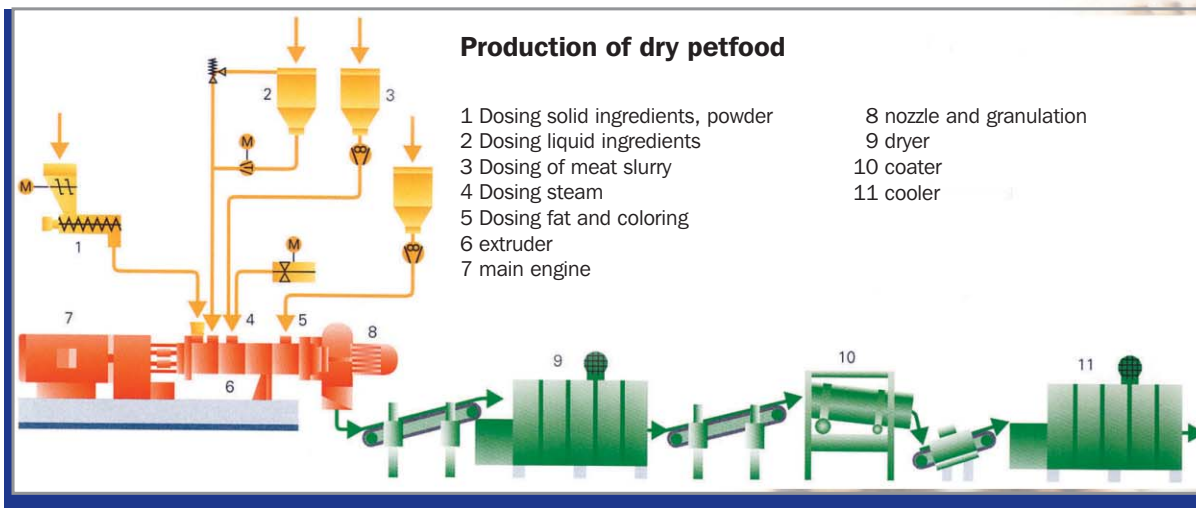
How to apply ARBOCEL® in petfood production processes?

Extrusion:

- Addition of **ARBOCEL®** with bulk ingredients through the hammer mill (necessary for the compacted grades), in lower dosages i.e. via micro dosing system directly into the mixer.

Tabletting:

- Special grades for direct compressing and wet granulation are available.

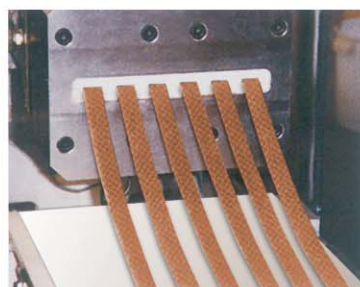


Semimoist meat products:

- Add **ARBOCEL®** together with the frozen meat directly to the mincer, alternatively to the chopper while mixing.

Baked products:

- Medium and long fibre grades should be preblended with dry ingredients.



Injection molding:

- Premix long fibres with starch base - ideal is high shear mixing.

Wet products:

- Ideal is the use of high shear equipment as WolfKing, homogenizer, bowl chopper or similar.

Quality and the environment – Ideas designed by Nature

VITACEL®

- multifunctional ingredients for healthy maintenance of the intestinal tract and to increase the protein digestibility
- the highest purity standards
- market-comparable, excellent value for money
- the highest quality standards with the ISO 9001/2000, HACCP, GMP + QS



Our technical service will gladly provide detailed information - we look forward to your enquiries !



JRS Headquartes Rosenberg, Germany

JRS - Your qualified partner - worldwide

- Longstanding years of experience in the production and processing of fibres
- Customer-specialized types
- 22 production plants in Europe and Overseas
- Market strength due to worldwide market leadership
- Globality is a key word in our marketing



22 Production plants in Germany, Finland, England, USA, Mexiko, India, Russia

J. RETTENMAIER & SÖHNE
GMBH+CO.KG



Fibres designed
by Nature

WORLDWIDE HEADQUARTERS

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