

KFSU Company and product summary

KFSU Pty Ltd is a Queensland company dedicated to providing healthy food ingredients from sugarcane to the marketplace.

KFSU will be the first company to bring a commercial scale sugarcane dietary fibre to the international market with Kfibre™ the flagship brand and Fibacel™ “dietary fibre” being the first product to market.

KFSU is currently building their first processing plant in Home Hill in QLD Australia and will supply commercial samples for product development to customers in the second half of 2010.

A second plant is being planned for Costa Rica to ensure year round manufacturing and supply from what is a seasonal raw material.

Fibacel™ is natural whole cell product manufactured from a sugar manufacturing Bi-product and unlike dietary fibre from wheat, oats and corn does not compete with food grains for raw materials, this give KFSU the ability to give long term stable pricing on their products.



Fibacel™ is a pale cream coloured product processed chemically free with all of the inherent goodness of the Sugarcane plant without the sugar.

Milled to customer's specifications between 20-1000µm, trials have shown that it has.

- High water absorption and retention
- Fat emulsifying properties
- Non allergen status
- The ability to lower the GI rating of manufactured goods
- Excellent binding and bulking functions

Fibacel™ has the ability to compete with traditional natural fibres on both pricing and functionality while giving a novel new product to the market.

The following pages will give a summary on how Fibacel™ may be used in the food and health industries, it should be noted that KFSU trials are indicative to that trial only and that all products & formulations have their own unique characteristics and that the following information is to be used as a guideline to assist with companies own product development.

Fibacel™ is a light weight product with a specific gravity of between 230-280kg/M₃ depending on particle size, as a comparison wheat flour has a specific gravity of 593kg/ M₃ at a particle size of 80µm this should always be remembered when being used in a formulation.

Substitution of flour with Fibacel™ in formulations should be done on a volume for volume basis not a weight for weight basis, the water binding capacity of Fibacel™ compared to flour is considerable.

Baked goods:

Substituting flour with between 10-20% of Fibacel™ has been shown to give.

- Increased formulation bulking due to increased water uptake
- Longer shelf life with a moister product in muffins
- Better mouth feel in unleavened products
- As well as functional health claims for added fibre and iron
- Some health products that have traditionally used wheat as a binder may use Fibacel™ as a replacement to help formulate products for customers with wheat allergies

Fibacel™ ability to retain moisture under heat shear and pressure allows traditional flour components of a formulation to bake and dry while still retaining a higher than normal moisture content.

It should be noted that Fibacel™ has been shown to work more efficiently when blended into the formula as a dry mix before any liquids are added.

Small Goods:

Starch is the no1 binder and water retention product used worldwide in the manufacture of smallgoods such as processed meats and sausages, consumers have become accustomed to the mouth feel and manufacturers are reluctant to change their formulations.

Starch has a water retention factor of 3-1 and over time allows migration of moisture from the product reducing its potential shelf life and quality.

Fibacel™ has water retention properties of 6-1 and has the ability to lock in moisture for a longer period reducing moisture migration and increasing shelf life as well as giving a smaller more even distribution of ice crystals through the meat matrix when frozen.

In sausage products starch is generally used at a 5% ratio in the formulation allowing 15% moisture addition without affecting mouth feel some of this moisture is lost during the cooking process for pre-cooked processed meats and some is lost in the cooking process for frozen products such as beef patties.

Small Goods continued:

By replacing a % of the starch used in formulations with Fibacel™ manufacturers may enhance their process in the following manner:

- Increase moisture absorption and retention (cost savings)
- Increased shelf life
- Reduced water migration

The world is increasingly looking towards healthier products, as well as cost savings the use of a natural dietary fibre such as Fibacel™ to replace some starch and reduce green meat inputs would also give functional claims on a range of healthy meat alternatives such as:

- Reduce fat
- Reduced calories
- Reduced starch
- Added fibre

As well beef patties used in the hamburger trade have traditionally used heated flour from wheat as their main binding material the substitution of wheat with Fibacel™ would not only give a product with a reduced fat & calorie count but also be able to give a free from grain allergies labelling.

Celiac disease is the world's no 1 auto immune disease grain allergies are increasing and as well as looking for healthy alternatives for themselves celiac sufferers need to find tasty healthy alternatives for their families and friends so that they might eat similar foods.

A beef pattie with Fibacel™ incorporating a gluten free bun could quite possibly be the next big thing on the takeaway food market.

Low GI:

The glycemic index or GI is a measure of the effects of carbohydrates on blood sugar levels. Carbohydrates that break down quickly during digestion and release glucose rapidly into the bloodstream have a high GI; carbohydrates that break down more slowly, releasing glucose more gradually into the bloodstream, have a low GI.

A lower glycemic index suggests slower rates of digestion and absorption of the foods carbohydrates and may also indicate greater extraction from the liver and periphery of the products of carbohydrate digestion. A lower glycemic response usually equates to a lower insulin demand.

All fibre to some extent have the ability to lower GI in food products although in some cases quit large amounts are need, recent trials with a major sugar-processing company have shown that the addition of Fibacel™ into white sugar at 3% inclusion rate will reduce the GI rating from high to low.

The ability of Fibacel™ to reduce the GI rating of food at such low inclusion rates is still being investigated, however it is documented that sugarcane as well as being an excellent source of fibre has a naturally occurring bio-active which aids in the lowering of GI.

KFSU's chemical free low heat processing ensures that all of the natural benefits contained in the sugarcane plant are still in Kfibre™.

KFSU still has work to do with its GI claims but the ability to add a natural product to a large percentage of everyday foods backed by scientific evidence creates a large range of new health and functional claims from foods that are already part of the everyday diet

To be able to add Fibacel™ to a product like chocolate and **claim low GI, High Fibre and High Iron** as well as the documented claims that already exist in Chocolate such as polyphenols claimed to lower cholesterol will give healthy guilt free chocolates as well as allowing potential customers such as diabetics to increase the customer base for confectionary.



KFSU uses Chocolate as part of their marketing strategy to demonstrate the smooth mouth feel of Fibacel™.

Consumers think that fibre is coarse or harsh to the mouth KFSU has shown with Fibacel™ that this is not the case

Health claims:

Fibacel™ insoluble dietary fibre in the diet aids in healthy bowel function by binding water and carrying it through the bowel and giving bulky soft stools.

As well the ability of Fibacel™ when added to food products to give a feeling of satiety or fullness aids the diet and health conscious consumer to reduce their food intake by making them feel full longer.

KFSU is working with a Japanese pharmaceutical company to develop a range of health bars that not only give essential vitamins and minerals through the seeds fruits and nuts ingredients but can also act as a meal replacement through the feeling of satiety that products containing Fibacel™ will give.

Fibacel™ also contains Octacosanols which have been claimed to assist with heart health and Xylobiose a moisture retention compound used in cosmetics, KFSU has in their earlier analysis of samples produced measured these compounds, however Fibacel™ produced by newer improved technology has not had the analysis to measure these compounds done and is making no claims health or otherwise on these products.

Once KFSU has finalised the Home Hill production facility they will continue research into the amount and efficacy for use in the human diet and cosmetic industry.

Conclusion:

Fibacel™ is an excellent cost competitive dietary fibre with its own unique abilities able to compete on price and physical characteristics with its competitors while giving customers looking for that edge a novel new product.

KFSU technology and ongoing R&D program will give both customers and investors the confidence that there will be ongoing and continued enhancement of the original product while working toward a wide range of new products and claims backed by sound science.

Fibacel™ is KFSU Pty Ltd first product under the Kfibre™ banner but will certainly not be its last *nature backed by science* is to be KFSU's goal while creating new and healthy products with minimal processing.