

# BEET FIBRE— ITS POTENTIAL IN VEGETARIAN PRODUCTS



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Vegetarian dishes have stepped forward the past years as an alternative to animal meat products. However, vegetables lose some of the nutritional juice when fried. New tests show a low amount of fibre, in this case Beet fibre, can assist to improve texture and reduce frying loss

Indications from literature and food ingredient declarations showed beet fibre could work well within those products – this made us curious to find out more.

Beet fibre is produced from sugar beets after the sugar has been extracted. It has a mix of insoluble and soluble fibre, the insoluble part is hemi cellulose and cellulose and the soluble part pectin.

This fibre contains some protein and is free from gluten and allergens, it is free from phytic acid, which could act as mineral blocker. The composition is rather unique in the fibre world which made it perform well in clinical studies and has approved EFSA/EC Health claims.

## Functional benefits in food products

One of the key components in beet fibre is the mentioned fibre mix, the insoluble part mainly holds water and the soluble pectin partly gels and add binding properties in various applications. Its non-lignified structure keeps the water inside the cell structure (left illustration) while lignified fibre holds water on the surface (right). It is a heat/freeze and thaw stable fibre.



## Including Beet fibre in Vegetarian food

A study in vegetarian & vegan mini

burgers showed a reduction in frying loss from 17% in the control to 9% in the ones with 3% Beet fibre added, even if some extra water was added to the one with Beet fibre as the mix was drier than the control when forming the burgers.

## Products from this test; base of yellow peas, carrots and onions





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corn starch. A similar burger batch was made, but here with an addition of a few percent beet fibre and Carob protein respectively. Frying loss was reduced from 13% in the control to 8.3% in the one with added fibre and protein. A good synergy between plant protein and beet fibre was shown, giving this burger a firmer texture and more “meat like” colour inside.

The conclusion is that a vegetarian dish with more of its nutritional juice left and with added healthy fibre and protein is beneficial from a nutritional standpoint. Functionality is an extra bonus for both consumers and producers.

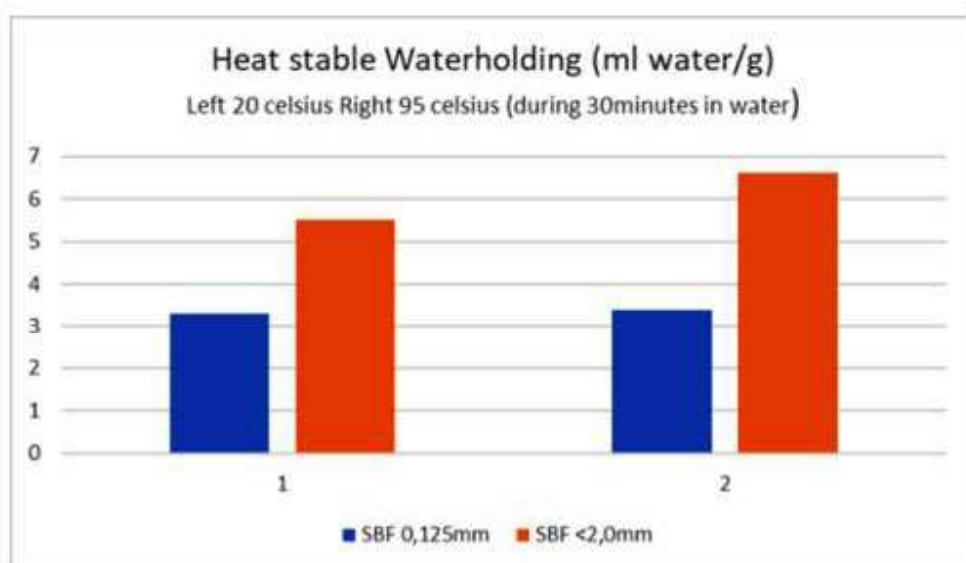
According to the “Handbook of dietary fibre” and “Food applications and benefits of dietary fiber”, Beet fibre is included in several nutritional and functional studies over the years, making it one of the most well documented dietary fibres.

The Vegetarian/Vegan product with added Beet fibre was perceived as firmer both before and after frying by the taste panel, also holding together better and felt juicier due to more moisture left in the product. It was noted that the slight off-white color of beet fibre made it invisible in the product.

We took it one step further with another study which confirmed the results above. Carrots, red beets, corn, white beans, yellow peas and onions were mixed briefly in a cutter and founded base for 100-gram burgers together with a small addition of spices and



Burger with added fibre/protein on the left, control to the right



Process stability, heated Beet fibre increased its water holding when heated compared to when in room temperature, especially the coarser particle size. Lignified fibres didn't show the same trend.