Community BioRefineries
The Epitome of American Innovation

By Scott Hewitt CEO and Vincent R. James Ph.D. CTO
Community BioRefineries,

Our Bioreaction blog tells the stories of our journey from the simplest to the most complex discoveries made by the Community BioRefinery that will change the way the world looks at 'carbon neutral world' – and how the Community BioRefinery seeks to 'feed and fuel the world'. Our Bioreactions involve a process that leads to chemical transformations from food to fuel and everything in between.

A "bioreaction" (in biochemistry terms) includes five types of general chemical reactions. They include: Combination synthesis; Decomposition; Single displacement; Double displacement; and Combustion. (Don't worry; there won't be a quiz...)

Resistant Starch

CBR Applied Technologies produce resistant starch without traditional cooking or steeping or use of harsh acids during the production process.

Resistant starch is "Nature's Fat Burning Breakthrough" and has the potential to become the next hot nutrition trend. Over 160 studies have confirmed its remarkable health benefit and its powerful impact on weight loss. Resistant starch is widely used in Europe; in the US market, products containing resistant starch show it as "fiber" in the ingredients lists.

Resistant Starch Properties

NOTE: The terms "resistant starch" and "immune starch" are often used interchangeably. Properties include boosted insulin sensitivity, lower blood sugar levels, minimized appetite, and a different food digestion site.

Immune/resistant starch is a popular subject these days. Many people have explored it and seen significant improvements by adding it to their diet.

Fluffy Cellulose

Fluffy Cellulose: Our Research Collaborators have developed technologies which may be used to produce this novel product. The name "fluffy cellulose" is the original name of this product.

Today it is called by other names such as Oatrim (invented by Dr. George Inglett, USDA-NRRL), which is produced from oat fiber and used in milk products, meats, breads, cookies and the like. Fluffy cellulose is a pure fiber product that is mostly devoid of lignin and ash. It has a flour-like appearance, tastes like flour, and acts like flour but it is pure fiber. In aqueous slurries, fluffy cellulose can act as a "fat mimic," e.g., imparting a creamy, smooth texture into such foods, but is pure fiber. Therefore, fluffy cellulose exhibits soluble and insoluble fiber traits when blended into foods, both of which have tremendous health benefits for the human diet in the reduction of cholesterol, blood-sugar levels, and calories in foods. These traits (color, odor, taste, mouthfeel) can allow its use in many food products, including breads, milks, ice-creams, meats, cereals, and donuts without adversely affecting the taste or texture of these products. A cup of wheat flour contains about 250 calories but fluffy cellulose contains zero calories and was originally described as "Fake Flour".

Our Research Collaborators have worked for nearly thirty years to develop its own version of this product from corn, soy, rice, and barley fibers. Some of this work was through sub-licensees of the original “fluffy cellulose” patent invented by Dr. Michael Gould of the NRRL/USDA labs in Peoria, Illinois. CBR Research Collaborators have also worked with the Pacific Northwest Labs and received a grant through the PNNL to work on the CBR’s version of this product. The company plans to roll out these novel product lines in the near future.