



## Health Benefits of NuBana™ Whole Green Banana Flour

Man and beasts have always eaten starch as a major component in their diet. Until relatively recently, much of the dietary starch resisted digestion, because it was protected by the physical structure of the plant or consumed raw. Modern food processing, however, has made foods much easier to digest by breaking down the protective physical structure of plants. It also significantly reduces the amount of resistant starch in foods. While Africans eating traditional diets consume more than 35 grams of resistant starch/day, the modern American diet delivers only ~5 grams of resistant starch/day.

Natural resistant starch is starch that resists digestion in the small intestine and reaches the large intestine. It is a prebiotic, insoluble dietary fiber, which feeds the bacteria and other organisms (called the microbiota) within the large intestine. As one of the most researched nutritional ingredients on the market, natural resistant starch is being linked to numerous metabolic and digestive health benefits, including:

- Low glycemic and insulin response
- Improved insulin sensitivity, which helps to maintain healthy blood sugar levels
- Improves satiety, both a few hours after consumption, as well as the next day
- Increases fat oxidation and glucose uptake into muscles
- Helps to keep colon tissue healthy and functioning well
- Mildly promotes regularity
- Promotes kidney health

### Classification of Resistant Starch

- RS1** Starch that is physically trapped within a food matrix
- RS2** Starch that resists digestion within the native starch granule, i.e., green banana flour, raw potatoes
- RS3** Retrograded starch, which can be found in cooked and cooled starchy foods.
- RS4** Chemically modified starches not found in nature.

In addition, it delivers between 2 and 3 kilocalories/gram and is very well tolerated (does not cause digestive distress).

Green bananas are a well-recognized source of resistant starch. NuBana™ whole green banana flour is made from fresh picked green bananas, which have up to 70% resistant starch. As bananas ripen, the starch is converted to sugar. By the time bananas get to the grocery store, they might have only 7-15% resistant starch. When they develop brown spots, they might have only 1 or 2% resistant starch remaining.

To date, 22 clinical studies have investigated resistant starch from under-ripe or green bananas. They confirm high levels of resistant starch in green bananas and in green banana flour, low glycemic response, fermentation within the large intestine with increased production of short-chain fatty acids and reduced pH, increased bulking, increased satiety and increased insulin sensitivity.

**Call International Agriculture Group for additional information on the health benefits of resistant banana starch.**