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### **Spirulina (*Arthrospira platensis*) as food: A commodity to better feed the world**

The filamentous blue-green algae or cyanobacterium *Arthrospira platensis* and better known as Spirulina, has been with us since the dawn of time. This aquatic microorganism is naturally found in the oceans and is widely sold around the world as a health supplement. In very small amounts, Spirulina is consumed as food. Highly nutritious, the World Health Organization (WHO) considers Spirulina the world's best super-food and many health experts would agree. The biomass is comprised of about 60% protein and like meat the protein is nutritionally complete containing all the essential amino acids. Comparatively, Spirulina is as rich as blueberries in micronutrients and antioxidants. It also has carotenoid, chlorophyll, xanthophyll, phycocyanin and phycobilirubin compounds, some unique to cyanobacteria. Having no cell wall, the organism is easily digested, is low in lipid (excluding gamma linolenic acid) and is high in iron. Many studies support the therapeutic uses for Spirulina, hence its widespread use as a supplement to the diet. Until recently, providing fresh, wholesome Spirulina to the general public had not been possible due to several constraining factors including; antiquated growth practices, insanitary growth practices, unsustainable cultivation practices, niche consumer market and several other reasons. One method for pure cultivation is accomplished by use of growth systems called photobioreactors (PBRs). We have worked on the research and development of PBRs for almost 10 years and have developed and tested a PBR specific to the cultivation of Spirulina. Food-grade (organic) cultivation is now possible at an affordable cost, in a sustainable manner, to produce more nutritious food per hectare than any other crop. Full-scale commercial deployment of our technology is now happening in Southern California and fresh, raw Spirulina is on the market under the brand "Go Spiral". We see consumer acceptance for fresh Spirulina, but there is a learning curve to overcome.

### **Biography**

Brian C Hampson has broad experience as a scientist and professor. He has completed his BS in Genetics and Human Development, MS in Aquatic Biology and a Doctorate degree in Food Science/Microbiology. He has worked as a Scientist for the USDA Agriculture Research Service and McCormick Corporation. As a professor of Food Science, he taught subjects such as food quality assurance, food safety, food product development, food processing, wine and fermented foods and food biotechnology. Early in life, he has worked his way through school employed in the retail food industry. Currently, he is retired from teaching and is involved in craft distillation and Spirulina food production.

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