

## **Bio-Algae Concentrates - A Breed Apart** The Culmination in Cellular Nutrition

By Roland Thomas, ND

(Editor's note: Bio-Algae Concentrates are also known as **BioSuperfood** and **BioPreparation**)

Uniquely formulated Bio-Algae Concentrates (BAC) blends are a breed apart from any single algae such as spirulina, chlorella, or partial extracts such as astaxanthin. Unseen with any drug, food, supplement, or other algae, BAC has extraordinary efficiencies at nourishing cells of the brain, leading to an awakening of the sluggish hypothalamic-pituitary axis (HPA), the regulator of all organ, system and cellular metabolisms in the animal and human bodies, in turn leading to extraordinary protection, prevention, repair and regenerative benefits.

### **What is BAC?**

BAC are blends of precisely proportioned algae selected amongst hundreds investigated by Dr. Michael Kiriak during 15 years of intensive research mandated by the Academy of Science of the former Soviet Union. He and his team were looking for solutions to low productivity and cancer epidemics in the livestock industry of the former Soviet Union.

BAC contains the following four algae totalling thousands of nutrients, more nutrients per gram than any other food:

- Spirulina Pacifica (ocean strain) and Platensis (lake strain), are naturally occurring algae that have the largest amount of proteins, vitamins, minerals, trace elements, enzymes, etc., more than any other food on earth.
- Haematococcus Pluvialis with high level of lutein, zeaxanthin and astaxanthin, the most efficient amongst carotenoids known to not only transverse the blood brain barrier (BBB), but the only three that can truly transverse the blood retinal barrier (BRB)
- Dunaliella Salina is a mono-cellular alga that contains the highest known concentration of beta-carotene on earth: approximately 10% of the base algae weight. Dunaliella has been used in anti-cancer research showing reduction of tumors and cancer cells. It is exceptionally high in vitamin C, which complements Spirulina's low vitamin C content.

### **Why not take just astaxanthin as it is so powerful?**

Since Dr. Kiriak introduced BAC in America 12 years ago, several people have asked this question, and a few people have tried plain store bought astaxanthin stand alone, and some have gone further making their own blend with store bought algae. Most came back to using BAC, when they were not obtaining results.

There are many reasons why taking a single separate carotenoid like astaxanthin, or some other mix will not provide the results that BAC consistently delivers. Hundreds of clinicians assisted by hundreds of farm aids took more than 10 years investigating hundreds of algae, testing hundreds of different proportioned blends, discovering algae growing technologies that augmented the yield, and that with over 20 species of animals in hundreds of test groups, culminating in several large trials totaling over one million of animal. Dr. Kiriak was on to astaxanthin in 1975, testing it as a separate, learning its potentials, realizing its intense and short lived benefits, trialing it in many ways. When used as a separate, he also learned its inability to stabilize and obtain remission of cancers and other diseases. While by 1979, when astaxanthin was included in BAC, along with many other powerful carotenoids, they finally obtained the results they had been looking for; prevention, stabilization and remission of cancers in the many species tested. Dr. Kiriak says that during those years, he realized the saying "the whole is larger than the sum of its parts", and many other lessons:

The lessons learned during those long years of research are applied in BAC as described further in this article;

- completeness over isolates and separates (i.e. plate of mix fresh foods, Asian style over steak and potatoes)
- balance and frequency of intake over infrequent large doses (eating six small meals increases by 25% the lifespan of rats, while one large meal decreases their lifespan by 25%)

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- synergies obtained with nutrient diversity over the force of large dose of single nutrients or cocktails (mixed foods rich in several carotenoids and antioxidants with moderate orac values delivers more antioxidative and anti-inflammatory protection than a single food with a high orac value)
- efficiencies of wholefood in its natural form over separates (i.e. 23 milligrams of vitamin C obtain eating a red pepper is tremendously more nutritionally functional than 1000 milligrams of ascorbic acid from a vitamin C pill.)

### **Why is BAC not available in powder form?**

The efficiency of BAC is such that it should not be consumed in larger amount than per directions whereby the capsule serving size can be easily measured and controlled by the user. It is not like a plain spirulina alga that can be eaten by the spoon. Some former users of blue-green algae or spirulina that use to eat between 10 to 20 grams per day have realized that they derive more results eating only one to three grams of BAC. Under Health Canada certification, the current capsule size cannot be altered unless a new application is filed.

### **Why is BAC not available in tablet form?**

There is no organic way to stabilize freeze dried algae powder into a tablet without the use of one form or another of chemical stabilizer.

### **Why is there no Chlorella in BAC?**

Many have asked why there is no Chlorella in BAC. When I asked Dr. Kiriak that question 12 years ago, he said that they had closely studied the nutrients rich Chlorella for one year, before arriving at the decision to exclude it. They observed that it was efficient with some animal species that synthesize the cellulase digestive enzymes, like cows, sheep, etc., while it was inefficient with species that do not metabolize the cellulase enzymes, like rats, pigs, and humans. The cellulase enzyme is required to breakdown the chlorella's hard cellulose content. When I asked him about "broken cell wall", he explained that breaking the cell, destroys its molecular integrity and protection, exposing the loose organelles to microbial infestation, and that even when cracked, the hard cellulose content remains a digestive burden. When they subsequently selected two spirulina strains, their research progressed rapidly with all the species tested.

### **How is BAC different from other algae?**

The specific algae selected for BAC, grown and nurtured in extraordinary settings, when blended in precise proportions offer completeness, balance, synergies, and consistencies unseen in any other algae or algae mix.

#### Completeness

- the four algae combined in BAC provide some amount of the largest number of nutrients found in the smallest size possible (i.e. all known amino acids, all known minerals and trace elements, some of all vitamins, fatty acids, dozens of the best carotenoids, thousands of enzymes, other phytonutrients, extraordinary mixed chlorophylls, and much more.
- Growing the algae using volcanic thermal spring waters provide for the abundance of known minerals and trace elements, and many other known and unknown nutrients that are otherwise unavailable in any soil, lake, ocean or lagoon – (I.e. one single alga can only contain what is available in its growing environment, typical surface lake, lagoon or ocean algae may contain at best 40 to 60 minerals, that in the best of cases not impacted by pollution, sun damages, and other seasonal factors like rain, wind / waves, etc.)
- the close system "bioreactor", is a perfect growing and nurturing environment, and when combined with the rich spring waters and advanced hydroponic technologies (perfect use of LUX – light) innovated during the long years of research, the algae are boosted and yield many more nutrients than when grown in conventional open wild lake, lagoon or ocean settings, where they suffer loss for combating water and airborne pollutions, seasonal wind and rain, and even UV damages due to opening in the ozone layer.

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## Balance

Balance or imbalance in our food is a function of which food in which quantity we mix, and / or eat together in one serving, and is very much a factor when it comes to proper assimilation, absorption and utilization of food consumed. With macro food like carrots and potatoes, this is known as food combination and there is scientific evidence showing that a well-combined meal can be better absorbed, and cause less digestive problems (i.e. constipation and gas when consuming a large slice of watermelon immediately following the consumption of steak and potatoes). That same science is much more relevant when it comes to combining micro algae that may contain thousands of nutrients and trillions of molecules. During years of research on BAC, causes of imbalance or balance were identified when using different algae combinations. Many of these discoveries are applied to the blends as we know them today. (I.e. The Dunaliella alga in BAC brought balance, not only for its extraordinary mixed carotenoids, but especially for its high vitamin C content typically lacking in Spirulina's. Note that vitamin C is a critical component in proper assimilation of other nutrients in human and other species.)

## Synergistic

Synergies are those extraordinary biochemical or energetic quantum phenomena's that make the whole greater than the sum of its parts, that make a team of people achieve impossible feats when working together. On the microscopic molecular and atomic levels, synergies can lead to quantum results. Einstein proved that when applying the formula  $E=MC^2$  (Energy equal mass multiplied by the square of the speed of light), that the energy potential delivered by the weight of the hydrogen molecules (100 grams) contained in one gallon of pure water was equivalent to that of several hundred thousand gallons of gasoline. It is synergy that may explain why dairy cows in the Soviet Union, and currently on Canadian farms, when fed one (1) gram of BAC daily, will yield four (4) gallons (5,000 grams) more milk daily, and reduce their daily protein feed by 500 grams: 1 gram of BAC, minus 500 grams of feed, equal 5000 additional grams of milk. Many synergistic effects were discovered and applied during the BAC research years.

## Organic

The definition of Organic foods on Wikipedia: are foods that are produced using methods that do not involve modern synthetic inputs such as synthetic pesticides and chemical fertilizers, do not contain genetically modified organisms, and are not processed using irradiation, industrial solvents, or chemical food additives. Interestingly in this definition there is no mention of the richness or depletion of the soil, lake, lagoon, or environment in which the growth occur, factor likely contributing the most to whether a food is organic or not, given the true definition of organic; of, relating to, or derived from living matter: "organic soils". Fruits, vegetables, herbs, and algae, can only gather in their makeup what is contained in their growing environment. A "certified organic" tomato grown free of herbicides, and grown in a nutrient poor soil will be less beneficial than a "non-certified" tomato grown in a nutrient rich soil even if some herbicides is used. Organic certification has become a loosely controlled marketing affair, while the principles in organic is ignored.

BAC as it is grown today is likely the most meriting food of the "organic" label. As opposed to being grown in a "depleted" environment, BAC is grown in a "most nutrients rich" environment, from mineral dense thermal spring waters taken directly at geysers sourced from two thousand feet below a volcanic peninsula, 100% the opposite of "depleted", which explains why it is the most nutrient dense algae blend on earth at this time.

## **What about the new pollutants in our waters, known and unknown, for which there are no test yet?**

There are over 25,000 different species of algae in the world—some are toxic but many are beneficial to all living creatures. Dr Kiriatic believes there is no natural body of water on Earth (including the Arctic and Antarctic Oceans) that is not polluted to some extent. Contamination of polychlorinated hydrocarbons (PCHC), aldrin, heptachlor, heptachlorepoxyde, lindane, DDE and PCB has been found in tissues samples of Arctic seals. Polar bears, polar foxes and sheep from southwest Greenland. Dr. Kiriatic, therefore, will not use any lake, ocean, manmade lagoon, or any wild grown algae in his BAC products. Many manufacturers claim that they test their lake or wild grown algae for commonly

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known toxins and contaminants. But what about the so many new and unknown pollutants in our waters for which there are no tests for yet? In 1986, after the Chernobyl explosion, to ensure the strictest quality and maintain full control over the growing environment, Dr Kiriak has chosen to grow his algae in enclosed bioreactor systems away from any pollution. This innovation allows protection from lake and airborne pollutants like radioactivity, fish and bird excrements, mercury, PCB, even from UV damages. The algae in BAC are grown without the use of synthetic fertilizers, pesticides, herbicides and without antibiotics, growth hormones, and without preservatives or additives of any sort.

### **Independent certification**

The current commercial version of BAC has received Health Canada Certification and NPN (Natural Product Numbers). This certification involves a long application process with analysis of the ingredient and their nutrients by independent laboratories, demonstration of the rationale of the different formulas, verification of the growth, harvest, preservation, blending, encapsulation and bottling steps as declared by the applicant, an independent verification of the manufacturing facilities. This certification implies that each lot of the final products (not just randomly selected) used in BAC is tested according to Health Canada requirements (the U.S. equivalent to the F.D.A.) for bacteria, herbicides, pesticides, heavy metals and other contaminants.

You can be assured that BAC never contains any of the toxic algae species since they are grown in closed and totally controlled bioreactors, not in the wild. Everything from the water, nutrients, light, heat, and turbulence is done under Dr Kiriak's direct supervision. This controlled environment is another reason why BAC is so unique in the algae product market. From over 20 years of research Dr. Kiriak has learned what light, heat, the ambient air, and water conditions are necessary to concentrate the nutrients of the algae. The concentration of nutrients in Dr Kiriak's algae and their purity far exceeds that of any wild or lagoon grown algae. Dr Kiriak's algae are more nutritional and have a much greater potential to awaken the cell's own natural ability to heal than any other known algae products.

### **The culmination in cellular nutrition**

The end BAC product is 100% natural, organic, complete, balance and synergistic — all this safely, without any toxicity, nor any contra indication, nothing artificial (as opposed to manmade formulations of isolates or separates). The "Concentrates" in Bio-Algae Concentrates means that each algae cell delivers 99% of its nutrient potential due to the nurturing technologies, and nutrient rich and pure environment. It is estimated that all open air lagoon or lake grown alga incur significant nutrient loss, and may yield anywhere between 30% and 65% of its potential due to the depleted nutrients and significant pollution found in most lagoons or lakes on earth at this time. It is those unfortunate factors that stem the sensitive algae in achieving its full potential.

In providing the body and brain this extraordinary efficient nutrition, BAC assists the body in its prevention and resolution of cellular exhaustion and resulting health issues. BAC is extremely efficient at nourishing and energizing the cells that make up the brain within the brain (the hypothalamus-pituitary axis), resulting in increased regulation of all our metabolisms and functions; cellular, systemic, glandular, organs, etc.; this "culmination in cellular nutrition" is what makes BAC the most efficient holistic nutritional on the market today.

For more information on Bio-Algae Concentrates, visit online at [www.thealgaeanswer.com](http://www.thealgaeanswer.com)