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Message: from the President of BioNatural Healing College (BNHC)

Greetings!



First and foremost, I am extremely thankful to Almighty God for granting me this opportunity to present the BioNatural Healing College E- Magazine to our dear readers. Also, I would like to thank you all especially those that are our dear readers that send us their valuable feedback and support. The information provided is for educational purposes only.

We hope this BNHC- E Magazine will be useful to you based with the efforts and dedication of many other researchers and colleagues around the globe. Thanking and wishing you all have the best health and prosperous life.

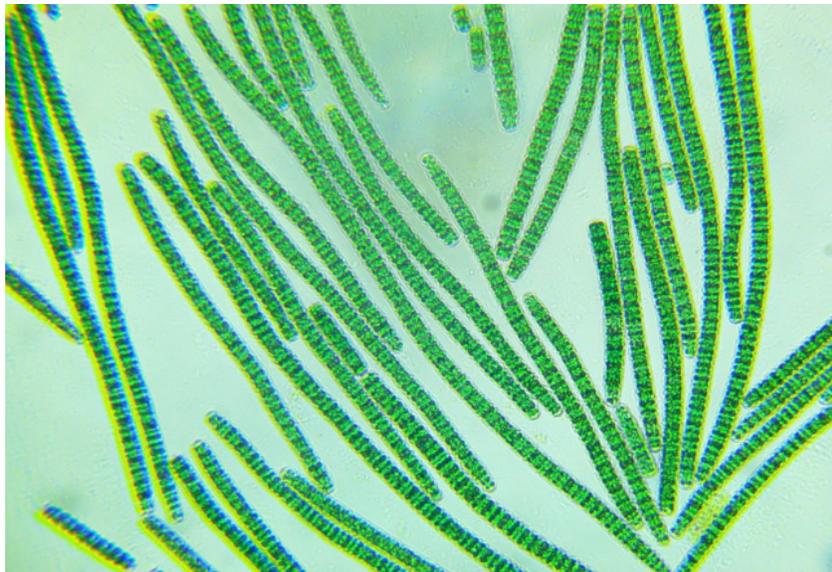
Best regards,
Dr. Nadir Sidiqi Ph.D.

Dr. Tanveer Alam Ph.D.
Natural & Medical Sciences Research Center
University of Nizwa, Sultanate of Oman: *Spirulina*:
Food of the Future



The genus *Spirulina* belongs to [photosynthetic](#) bacteria that cover the groups [Cyanobacteria](#) and [Prochlorophyta](#). **Spirulina** is a blue-green, free-floating, filamentous cyanobacteria (micro-algae) characterized by [cylindrical](#), multicellular [trichomes](#) in an open left-handed [helix](#). *S. platensis* occurs in Africa, Asia, and South America, whereas *S. maxima* is confined to Central America^[1].

Spirulina is a blue-green micro-algae, this super food dates back over 3 billion years and is the most well-known of these algae. A potent nutrient-dense whole food, spirulina is over 60%-70% protein, and is a complete protein, supplying all eight essential amino acids. It is low in fat, but does contain vital essential fatty acids, including very high amounts of Gamma Linolenic Acid (GLA). GLA is a hormone precursor, and is found conducive to healthy heart functioning and circulation. It also has anti-inflammatory properties, which are beneficial for skin and hair. It has been hailed as the “food of the future”, besides being considered as an ideal food for astronauts by NASA. Spirulina was consumed by the ancient Aztecs but became popular again when NASA proposed that it could be grown in space for use by astronauts^[2]. Spirulina may be the single [most nutritious food](#) on the planet. The quality of the protein in spirulina is considered excellent-comparable to eggs. It gives all the essential amino acids that you need.



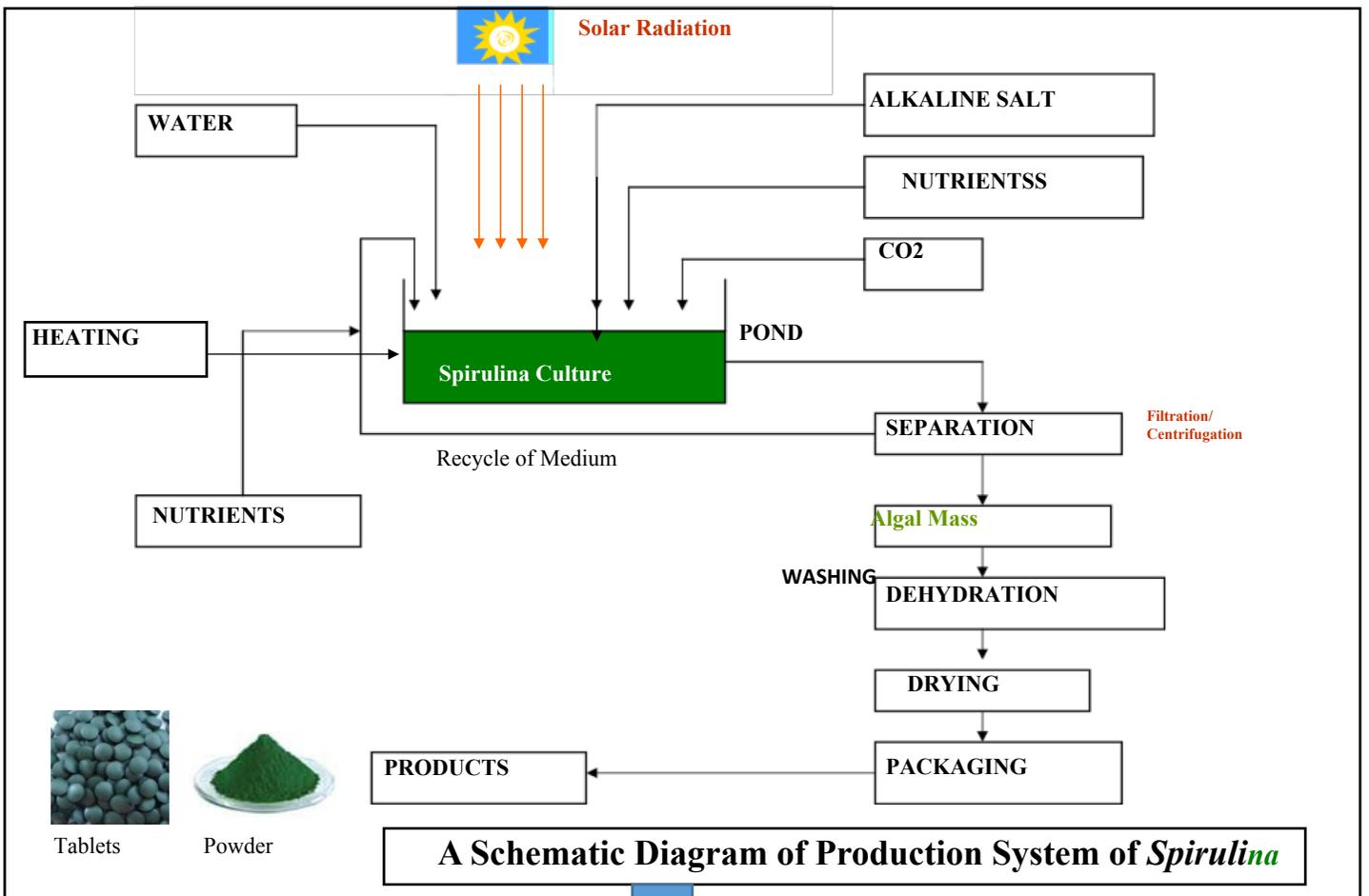
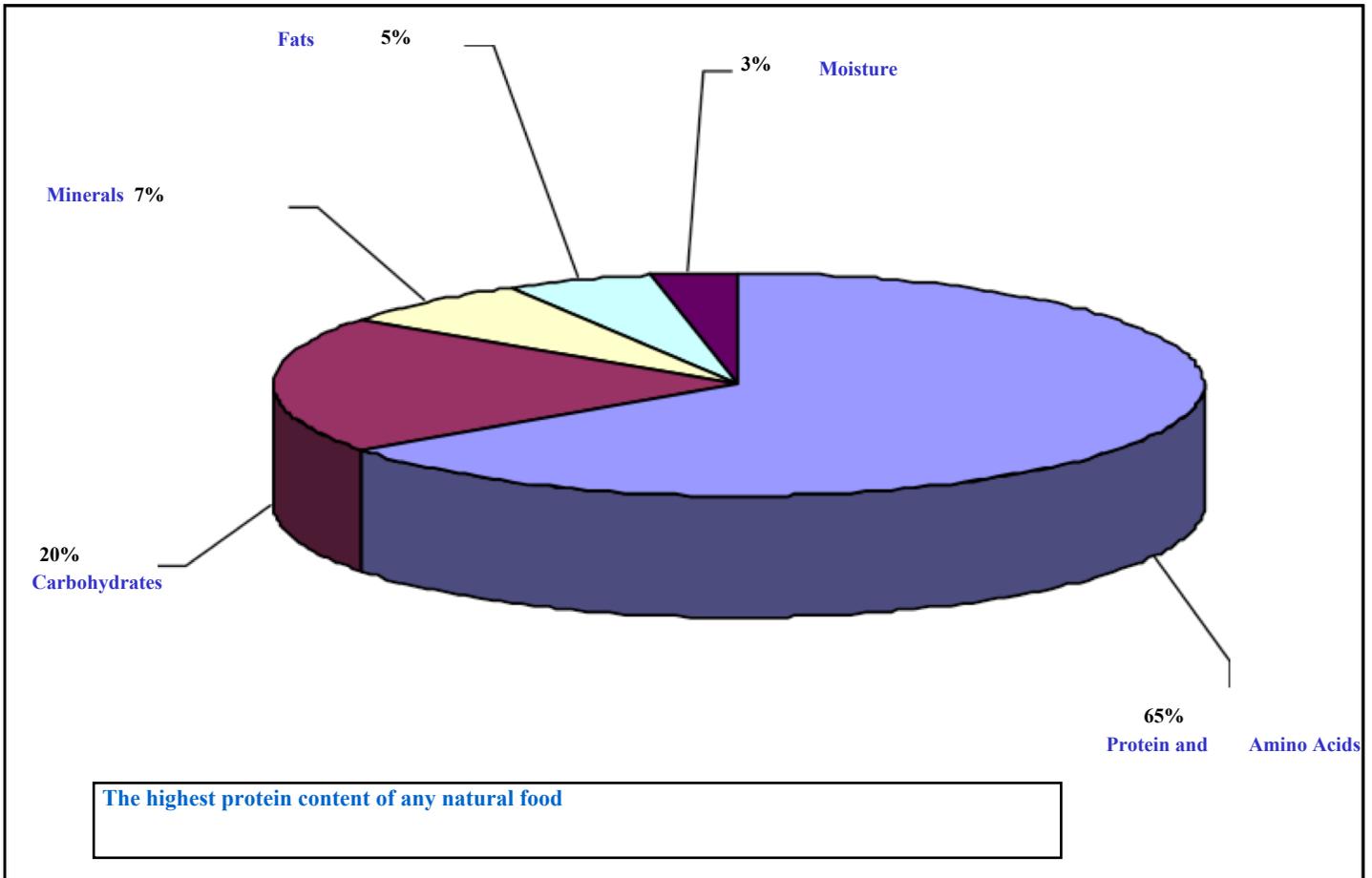
Spirulina platensis

Cultivation: They occur naturally in tropical and subtropical lakes with high [pH](#) and high concentrations of [carbonate](#) and [bicarbonate](#). Most cultivated spirulina is produced in open-channel [raceway ponds](#), with paddle wheels used to agitate the water. Spirulina thrives at a pH around 8.5 and above, which will get more alkaline, and a temperature around 30°C (86°F). They are [autotrophic](#), meaning that they are able to make their own food, and do not need a living energy or organic carbon source.

Chemical Compositions:

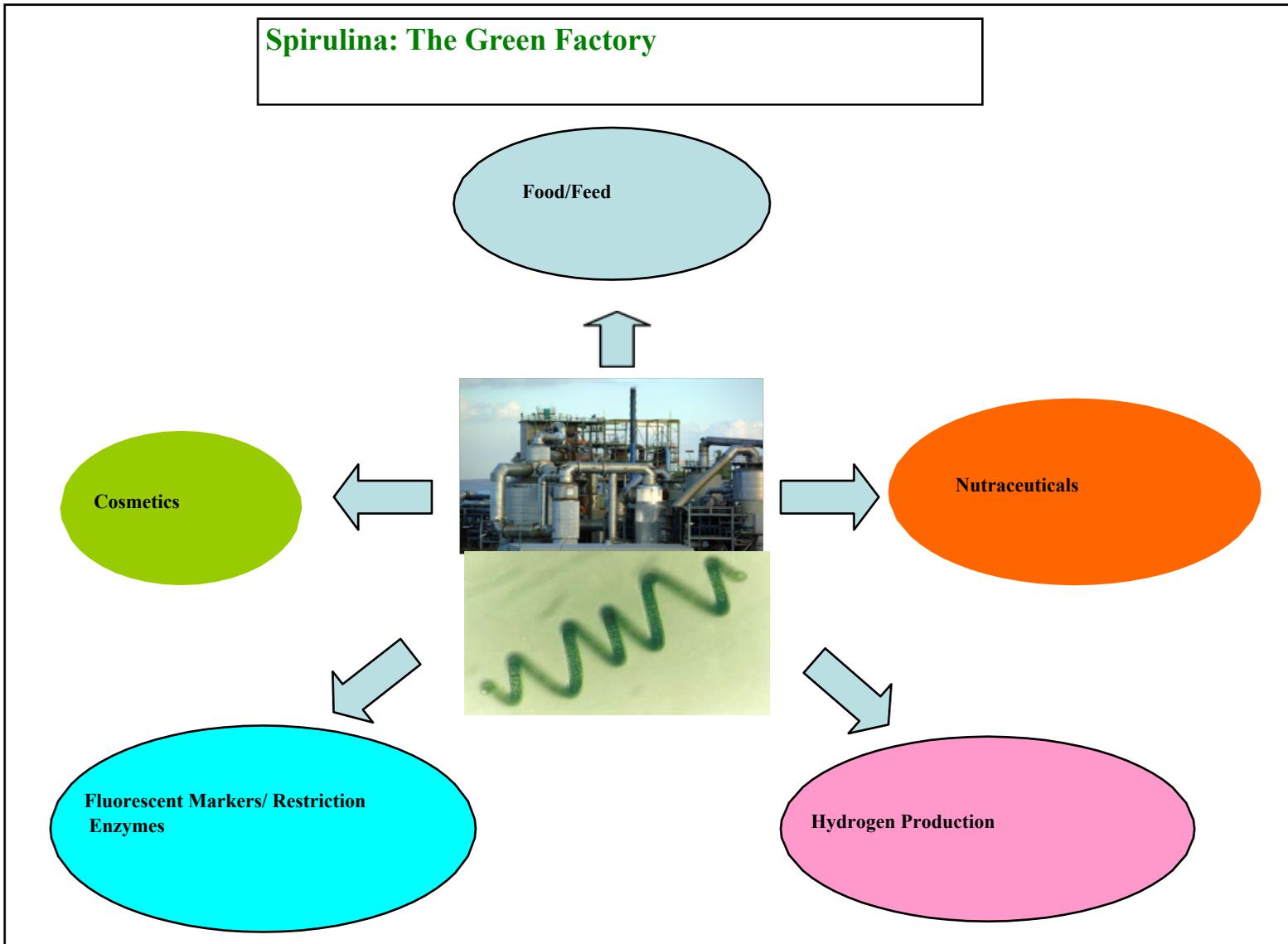
Basically, Spirulina consists of 55-70% protein and 5-6% lipid. Polyunsaturated fatty acids (PUFAs) constitute 1.5-2% of the total lipid content of this alga. In fact, Spirulina spp. is rich in-linolenic acid (36% of the total PUFAs), vitamins (B₁, B₂, B₃, B₆, B₉, B₁₂, vitamin C, D and E), minerals (K, Ca, Cr, Cu, Fe, Mg, Mn, P, Se, Na and Zn), pigments (chlorophyll a, xanthophyll, β-carotene, echinenone, myxoxanthophyll, zeaxanthin, canthaxanthin, diatoxanthin, 3-hydroxyechinenone, β-cryptoxanthin, oscillaxanthin, phycobiliproteins, C-phycocyanin, and allophycocyanin) and enzymes^[3].

Composition of Spirulina



Potential Applications of *Spirulina*:

Spirulina: The Green Factory



Potential Applications of *Spirulina*:

1.Human Health: (i) Poly-unsaturated fatty acid such as gamma-linoleic acid (GLA) is a group of essential fatty acids particularly favorable for its application in nutraceutical and pharmaceutical industries. GLA plays significant roles in improving human body functions including cancer, diabetes, heart disease, arthritis, Alzheimer's disease, etc. (ii)**Anticancer & Anti-viral activities:** Consistently high levels of **Phycocyanin** (ranging between 15-18%) give Spirulina its unique blue color. Phycocyanin is widely known as a blood builder and also shows potent anti-viral activity and anti-cancer properties^[4,5].

GLA is a hormone precursor, and is found conducive to anti-inflammatory properties, which are beneficial for skin and hair.

2. Use as Feed and Feed Additives:

(i) Use of Spirulina in Poultry: A few studies on the use of Spirulina as a very effective agent in inducing preferred yolk color have been reported^[6].

(ii) Use of Spirulina in Aquaculture: Spirulina formulated feed increases the growth rate of many species. It improves the palatability of the feed. It was also reported that fish fed with Spirulina have less abdominal fat^[7].

(iii) Use in Crustaceans: A specific application of Spirulina, mainly as a colorant pigmentation agent in the diet of the black tiger prawn was suggested^[8].

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Dr. Sally Warren, Board Certified Traditional Naturopath: Protein; a lot or a little?



Protein is always in the food news. Recently, however, it is promoted with packaged foods such as pancakes, cookies, shakes, snacks, bars, drinks - even water - proclaim their mega portions of protein! We are so obsessed with this nutrient, but can the body actually use these higher amounts? People believe that greater protein intake makes for leaner, more muscled bodies without having to do much more than consume it. The truth is that the body can only use a certain amount of protein, depending upon physical activity and body type. One can only actually absorb what the body needs. The rest is stored as fat. If too much protein is consumed, it can promote health risks. To really understand protein, one needs to know how the body breaks it down. It is harder to digest than other food groups.

After swallowing, your stomach acid begins the breakdown process by literally “unfolding” the molecules. This prepares the protein for digestion by enzymes, such as pepsin, to make smaller pieces of protein, called peptides, which are amino acids joined in short chains. Amino acids are then used throughout the body, not just in muscles but also in enzymes, hormones, cell structures, transportation of molecules, and storage of nutrients in the body. The body sends protein where it is needed for survival, not just for bigger biceps or six-pack abs. And since it takes a lot longer to digest protein than carbohydrates, it can be helpful when people want to feel full longer. When a person eats more protein than is required, it has to be processed, and the nitrogen formed is passed through the kidneys. Excreting all the extra nitrogen is a lot of extra strain for the kidneys and may cause weight gain.

High levels of nitrogen are dehydrating and toxic, and therefore hard on the organs, and may cause kidney stones. So, extra protein may be not only pointless, but also damaging.

The popular ketogenic diet assists in weight loss by forcing the body to burn stored fat and not sugar. This is best done by eating more fatty foods than by eating more protein. The low carb, high protein style of dieting can shock the body, and studies have shown that ketosis cannot be maintained. Over 90% of subjects in the study, who ate high quantities of protein, eventually gained the weight back. These high protein diets can be stressful on the kidneys, so short term dieting using this method is advised. Or better still, focus on good fat and moderate protein, high plant-based meals..

In a study by the University of Texas, it was found that the amount of 30 grams of protein (about a 3-oz serving of chicken) could boost muscle building activity by 50%. However, even if there were more protein in a meal, it went through the same process and the achievement was the same. More did not lead to greater muscle building. Real protein comes in many forms, not just from steak, a bar or a shake! Dairy has protein, although it should be used with caution, due to the lactose content and the propensity for allergies. Make sure it is organic, full fat, and from grass fed sources so it is not laden with artificial hormones, pesticides, and stripped of digestive enzymes, which can cause inflammation. It is best to eat fermented dairy, such as yogurt or kefir. Eggs are another complete protein, containing all nine of the essential amino acids we need from food.

Other good sources of protein are beans, lentils, nuts, soy (fermented is best), fish and seafood, nut butters, seeds such as chia, sunflower, pumpkin, and quinoa, peas, hemp, even algae such as spirulina.

Much of the protein shakes have either whey protein or pea, since it is easier to assimilate and absorb. Casein - the most abundant protein in milk - and soy are two versions of protein that have issues. Casein can be an allergen for some, is damaged in processing, and cannot easily be absorbed, making these hard on the digestion. It is also found in milk solids used to fortify foods with protein. Soy has a strong estrogen stimulant, which can play havoc with women's hormones and cause men to become effeminate and grow breasts. Harvard School of Public Health did studies into soy protein and among other issues, found it cause cognitive function decline. Plus, most soy comes from GMO products that are sprayed heavily with pesticides. The amount absorbed depends upon a number of digestive circumstances, such as the correct enzymes to break down and utilize the different long chain molecules that make up proteins, and, more importantly, the need for repair and growth. Here's some food for thought: some of the largest and most muscular creatures on the planet are herbivores.

Ref: <http://www.eatthis.com/what-happens-when-you-eat-too-much-protein/>

<https://articles.mercola.com/sites/articles/archive/2014/09/03/too-much-protein.aspx>

<https://www.hsph.harvard.edu/nutritionsource/2014/02/12/straight-talk-about-soy/>

Prof. Rosalie Stafford, Twigs and Sprigs



In the last issue of *BioNatural Healing College E-Magazine*, I talked about one delectable type of live food, bursting with flavor and life force: grapefruit seed sprouts. This month, I will talk about “twigs and sprigs,” live food readily available from (1) a wild bush and (2) a domesticated shade tree, both commonly found in the American Southwest: Creosote (*Larrea tridentata*) and Eucalyptus (*Eucalyptus globules*).

Enzymes and the Life Force: First, however, a few comments regarding the benefits of eating live foods, victuals bursting with life force and which provide a diet rich in enzymes. Nutritionist Steven Lang writes: “Enzymes are complex organic substances that originate from living cells. By initiating chemical changes in surrounding organic substances, they help to transform and digest them. ... Live foods are treasure troves of living enzymes, phyto-nutrients and other compounds that are essential to proper digestion, absorption, elimination, immunity, and health. Unfortunately, virtually none of these delicate entities can survive temperatures greater than 116° Fahrenheit (most enzymes start to degrade at about 106°), so they are generally destroyed by the heat of cooking and most commercial processing.” The Food Enzyme Institute observes: “Enzymes are the construction workers of the body. Protein, carbohydrates, fats, vitamins, and minerals are simply the building materials.... Food enzymes are a natural and important component in our food supply, yet they are systematically removed.” Others have spoken of enzymes as performing the role of *prana* or *chi* — what is called in the Western tradition *the life force*.

Certainly, the Standard American Diet (SAD), consisting of processed foods methodically stripped of life force, contributes to endemic poor health. By destroying enzymes, food processors render food *dead*. Eating live food rather than the “dead food diet” promoted by SAD actively reverses the trend toward obesity, malaise, and chronic disease.

Creosote

In Arizona where I live, *Larrea tridentate* is ubiquitous: everywhere you look, you see miles and miles of *Creosote* bushes. Throughout the Mojave, Sonoran, and Chihuahuan Deserts of western North America (covering southeastern California, southern Nevada, southwestern Utah, Arizona, New Mexico, Texas, and northern Mexico), Creosote is a dominant species of this desert biome.

Creosote is tough, clinging to life in an extraordinarily harsh environment, a land where summer temperatures commonly hover at 120F, where not a drop of rain might fall for years on end, and where hurricane-force sandstorms strip paint from automobiles. Creosote clings to life so tightly that it should be no surprise to learn that one of the oldest plants on earth is an eleven thousand year old Creosote plant, christened *King Clone*, found in California’s Creosote Rings Preserve.

Creosote is the vegetation which perfumes the desert air after precipitation: the cherished desert-after-a-rainstorm scent so beloved by desert-dwellers. (The refreshing smell of creosote comes from the resinous coating of its small, fuzzy leaves.) Not only is Creosote a dominant species in the desert Southwest, native peoples have long lauded the plant as a “cure-all,” the go-to herb for a wide variety of diseases and conditions, from fever, colds, sinus infections, fungal infections, stomach pains, and diarrhea to arthritis and cancer. Creosote is known to be analgesic, antioxidant, and antimicrobial. Creosote contains NDGA (nordihydroguaiaretic acid), a bio-active plant compound which clinical studies have shown to inhibit cancerous growths.

Creosote is also known to be toxic in large quantities: if you ingest creosote daily for two months, you will very likely experience liver damage. But certainly, the same thing could be said for many pharmaceuticals! *Moderation in all things* is the watchword.

I consume Creosote very judiciously: every month or so, I snip off a glowing green sprig and slowly chew and swallow. Many people consider Creosote entirely unpalatable (with the flavor of burning truck tires); I prefer to consider the resinous taste *bracing*. In my opinion, the opportunity to partake of freshly-plucked live food brimming with life force trumps the admittedly unpleasant flavor.

Eucalyptus

Another leaf which has a rather unpalatable flavor (unless you are a koala) is *Eucalyptus globules*, a shade tree native to Australia and now naturalized throughout California and Arizona. Tall and graceful, the Eucalyptus has long, leathery leaves which rustle in the breeze; when the sun shines through the newest little leaves, they glow like thin-cut jade and seem to me to sing out a celebration of sun and soil and the joy of life.

Eucalyptus leaves are known to contain cyanide compounds and, if eaten in large quantities, are toxic — again, *unless* you are a koala. It happens that a number of foods, from lima beans to apple seeds (which I consider a delicacy and treat), contain cyanide compounds; however, when eaten in *moderation*, these foods present no hazard, and, I trust, neither does Eucalyptus.

Eucalyptus appears to have anti-inflammatory, antibacterial, and antioxidant effects. Bachir and Benali observe: “*Eucalyptus globulus* ... [presents] a folk remedy for abscess, arthritis, asthma, boils, bronchitis, burns, cancer, diabetes, diarrhea, diphtheria, dysentery, encephalitis, enteritis, erysipelas, fever, flu, inflammation, laryngalgia, laryngitis, leprosy, malaria, mastitis, miasma, pharyngitis, phthisis, rhinitis, sores, sore throat, spasms, trachalgia, worms, and wounds.”

Like Creosote, I consume Eucalyptus leaves very judiciously: every month or so, I snip off a glowing green sprig from the very end of a branch, and slowly chew and swallow, actively savoring the unpleasant flavor, knowing that the gracious essence of the graceful Eucalyptus is becoming part of my being.

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Dr. Nadir Sidiqi Ph.D., an invited speaker at the International Conference held at Sultan Qaboos University Muscat, Oman on “Phytochemicals: Natural Alternative in Prevention of Inflammation” (October 30-November 1 2018)

The human body has an amazing ability with respect to inflammation that reacts in certain conditions to protect itself from harmful stimuli, including irritants, damaged cells or pathogens. In certain situation humans face unexpected health problems, due to fever, cold and congestion, body pains, infections, digestive symptoms, heart disease, shortness of breath, allergies, arteritis, mode disorders, headaches and much more are linked directly or indirectly to the inflammation.

It is important to understand and distinguish between inflammation and infection. Inflammation whereas occurs when the human body fights to remove those invaders. While infection occurs when bacteria, fungi, virus or plasmodium invade the body. However, there are certain foods, herbs, supplements, that humans eats along with lifestyle play an important role in the prevention of inflammation, while, other certain foods that consumers will initiate the development of inflammatory diseases. The author Sunil Pai MD “An Inflammation Nation (2016)” described in his book that inflammation is a fundamental pathologic process. It consists of a dynamic complex of cellular changes that are visible only under a microscope. These changes include cellular infiltration and mediator release, which occurs in the affected blood vessels and adjacent tissues in response to an injury or abnormal stimulation caused by a physical, chemical or biological agent. These clots are responsible for the majority of heart attacks and most strokes.

Inflammation and environmental factors: Adverse environmental factors such as toxins from the food, pollutant chemicals (pesticides, synthetic materials) from the air and water are significantly important in the development of inflammatory diseases. For example, a headache is one of the common types of inflammation, which is temporary. **Inflammation and their root causes:** As pointed out by Melanie Finley, in his book, “Fighting Inflammatory Disease: Inflammation Explained + Anti-Inflammatory Recipes (2017)”.

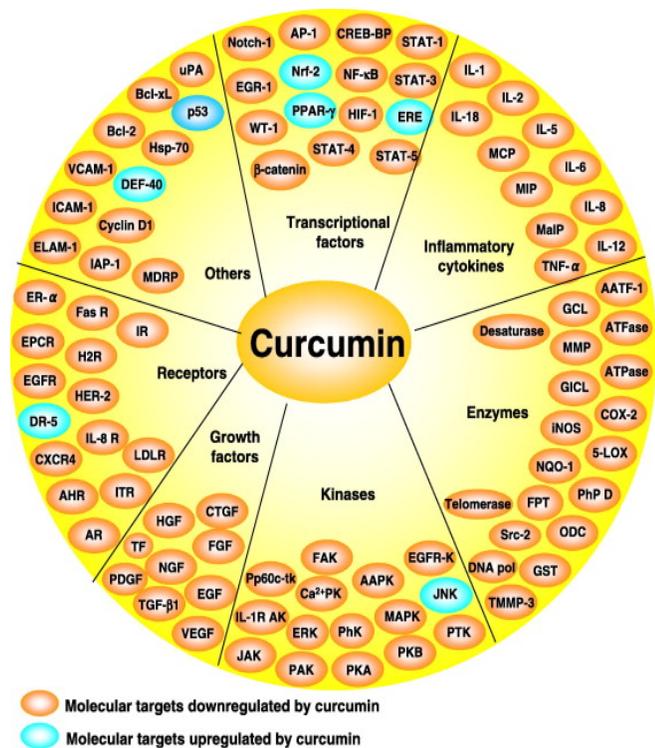
- Low level of glutathione (the peptide that contains amino acids and plays an important role in the oxido-reduction reaction)
- Low levels of vitamin D and antioxidant substances
- A high level of malondialdehyde (a marker of oxidative stress that is formed when fats are oxidized)
- Increased levels of oxidized glutathione
- High levels of fructosamine (are compounds that result from glycation reactions between a sugar and a primary amine)
- High levels of homocysteine (is a non-proteinogenic α -amino acid.)
- High level of peroxidation (is the oxidative degradation of lipids)
- Isoprostane (makers of oxidative stress that are formed when fats are oxidized)

Natural Alternative Anti-inflammatory:

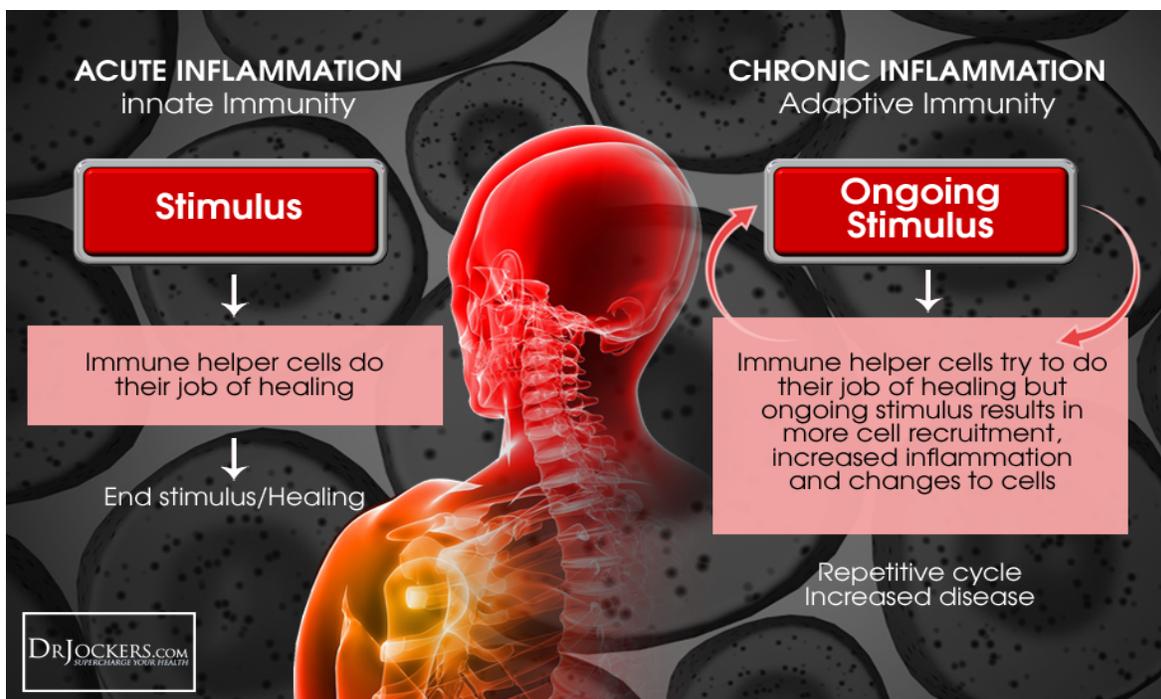
Phytochemicals of various plants as a natural alternative in the prevention of chronic diseases particularly in the prevention of inflammation. For example, pomegranate (*Punica granatum* L), frankincense (*Boswellia sacra*)

And turmeric (*Curcuma aromatica*, *C. domestica*, *C. longa*). However, let us focus briefly in turmeric constituents include three curcuminoids (curcumin, desmethoxycurcumin, and bisdemethoxycurcumin). Over 7000 studies have shown that curcumin has a strong anti-oxidation and anti-inflammatory activities based on the molecular basis of curcumin's attributed antioxidant, anti-inflammatory, anti-bacterial, anti-apoptosis, anti-cancer, and other related activities. Curcumin has been used as a remedy for the prevention and treatment of many organ and tissue disorders, most of which are associated with inflammation and oxidative stress. Curcumin alleviates oxidative stress, inflammation in chronic diseases and regulates inflammatory and pro-inflammatory pathways related to most chronic diseases. Many factors involved in the management and prevention of inflammation as mentioned earlier need to be considered.

Plant	Location	Drug	Use
Willow	Worldwide	Aspirin	Fever and pain
Cinchona	Tropics	Quinine	Malaria
Rosy Periwinkle	Madagascar	Vincristine	Leukemia
Rosy Periwinkle	Madagascar	Vinorelbine	Hodgkin's disease
Pacific Yew	Pacific Northwest	Taxol	Ovarian cancer
Opium Poppy	Eurasia, Africa	Morphine	Pain
Curare	Amazon	Tubocurarine	Muscle relaxant
Snakeroot	India	Reserpine	Hypertension
Foxglove	Eurasia, Africa	Digoxin	Cardiac arrhythmia



Source: <http://www.donnienance.com/wp-content/uploads/2015/10/curcumin.png>



Source: https://333oe3bik6e1t8q4y139009mcg-wpengine.netdna-ssl.com/wp-content/uploads/2017/10/ACUTECHRONICINFLAMMATION_Pic.png

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Innovation, Educational Announcement (Conference, Workshop):

Dr. Nadir Sidiqi on behalf of BioNatural Healing College Participated as an exhibitor at the California Academy of Nutrition and Dietetic Annual Conference April 11-13, 2019 (Riverside, California)





Mission: BioNatural Healing College is a non-profit public benefit institution that has tax-exempt status under the Internal Revenue Service, Section 501(c)(3) of the United States of America. Our goal is to offer a high-quality education a diploma program as well as holistic health and nutrition conferences, seminars, workshop, and continuing education. The focus of these educational programs is to offer healing and holistic nutrition science through online distance learning. These dynamic online education programs will provide diverse adult learners throughout the world the experience of enhancing their quality of life, their health, and their happiness. **Vision:** The faculty, staff and management team of BioNatural Healing College are passionately committed to providing the best teaching possible in this field. We seek to encourage, motivate and explain the importance of this field to prospective students so that they may make an informed decision regarding enrollment. We seek an ultimate goal of satisfaction for the student based on responsibility, commitment, respect, awareness and sustainable education for society. **Accreditation and Recognition:** BioNatural Healing College is based in California. It is an institution that has the goal to deliver on-demand online distance learning around the globe. This education is of high quality and vocational in nature. BioNatural Healing College is a legal business entity that has been approved to operate by the State of California's Bureau for Private Postsecondary Education that set forth in the educational code. BioNatural Healing College is not accredited by the United States Department of Education. BioNatural Healing College is a member of the American Holistic Health Association (AHHA).



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