



60 Capsules Bottle

CPT SUPER HERBS
Cordyceps
HB 21 Cordyceps Blend

WILD HARVESTED
100% NATURAL
WILD CRAFTED

60 Capsules Dietary Supplement

100% NATURAL

Cellular Preservation Technology (CPT)
Retains nutritional values and sustains the complex synergy of the plant just as it grows in nature. A new way of producing concentrates from herbs & plants through natural disintegration without crushing, grinding, pressure, heat or any destructive means that would otherwise destroy live enzymatic matter, nutrients and bioactivity.

| Supplement Facts | | |
|--|--------------------|---------------|
| Serving Size 2 Vegan Capsules Servings Per Container 30 | Amount Per Serving | % Daily Value |
| Cordyceps | 150 mg | * |
| Amalaki | 50 mg | * |
| Noni | 50 mg | * |
| Jiaogulan | 50 mg | * |

*Daily Value not established
Other Ingredients: Hypromellose (Vegetable Capsule)

From a cGMP - FDA & USA Approved Facility
149/9 M1, T. Muang Kaew,
A. Mae Rim, Chiang Mai, 50180,
www.cptsuperherbs.com

WE DELIVER THE
HIGHEST BIOAVAILABILITY
HIGHEST BIOACTIVITY
HIGHEST NUTRITION

Made in Thailand FDA
51-1-01753-1-0016

This product is not intended to diagnose, cure, treat, or prevent any disease. Children and pregnant women should consult a doctor.

Contents per capsule

Cordyceps Militaris 150mg - Amalaki 50mg - Noni 50mg - Jiaogulan 50mg
The addition of Amalaki, Noni and Jiaogulan Enhance the Cordyceps ability to provide a higher level of Immune System Support and Energy Management

Cordyceps

Immune system support - Energy Management - Anti-cancer benefits - Anti-viral effects Kidney Health - Sexual Potentiate - May Boost Exercise Performance - Anti-Aging Properties - Potential Anti-Tumour Effects - May Help Manage Type 2 Diabetes - May Help Fight Inflammation - Possible Benefits for Heart Health



There is a recent but fast growing recognition in the West that mushrooms represent an important source of biologically active compounds with the potential to improve biological functions and allow people to live healthier and longer lives.

Asian traditional medicine has long recognized the pharmaceutical value of mushrooms as antioxidant, anti-diabetic, and immunomodulatory, antitumor, anticancer, anti-allergic and anti-microbial agents. Western research has only in recent decades begun to focus attention on the pharmaceutical potential of mushrooms with results that strongly validate traditional

wisdom and indicate the value of further research to investigate their amazing properties.

In 1999, worldwide sales of mushroom nutraceuticals had reached US\$6 billion with Asia and Europe accounting for 99% and with N. America contributing less than 0.1% of the overall total. Since then, demand in N. America for medicinal mushrooms and derived products have increased between 20-40% annually.

The “buzz” in the market about this amazing mushroom is deafening, and along with its popularity comes a plethora of low quality products that range from useless to downright dangerous. With natural Cordyceps (*Ophiocordyceps sinensis*) in very limited supply “Cordyceps” are now being produced in China by injecting flour paste and gelatin inside living larvae, then coating the larvae with mud and letting them dry. They may not be safe to consume. In any case, there are so many varieties and qualities on the market that purchasing high quality cordyceps can be challenging.

The Cordyceps Story:

In the remote mountain villages in Nepal and Tibet the villagers took their animals into the high mountain pastures for springtime grazing. The villagers observed their goats and yaks grazing lazily in the fields, snacking on small brown grass-like plants. Shortly thereafter the livestock were observed jumping about, having sex and being full of energy. The villagers were curious to see what the yaks had been eating, and after some time they discovered that they were eating what we now know as Cordyceps. The villagers began to collect and eat the caterpillar fungus with similar effects, as the story goes.

In fact, the caterpillar fungus had been used for centuries among rural villagers on the Tibetan plateau to boost the physical endurance of their yaks and donkeys in transporting goods across the mountains.

Cordyceps has been used in Traditional Chinese Medicine (TCM). Due to its rarity it was very expensive and therefore its use was limited to the Royal Court and Chinese Nobility. Written records dating back to the Tang Dynasty (AD 618-907) describe Cordyceps as a miraculous transformation from animal to plant. Tibetan scholars wrote of this mythical healing animal/plant throughout the fifteenth to eighteenth century and the earliest

scientifically reliable description of Cordyceps is contained in the “*New Compilation of Materia Medica*” by Wu-Yiluo in 1757. Cordyceps was always held in high esteem in the Chinese Medical tradition, and, since 1964, Cordyceps has been officially classified as a drug in the Chinese Pharmacopoeia.

With the exceptions, Cordyceps emerged from relative obscurity in the West in 1993, when it became known that Chinese women athletes, who had broken nine world records in track and field events at the National Games held in Beijing, were ingesting cordyceps. The records were broken by startling margins. After they passed tests for anabolic steroids, the Chinese coach told reporters that his athletes had been taking Cordyceps as part of their training regime. The public perception of this caterpillar fungus grew rapidly and today it is one of the most sought-after mushrooms in the world.

What are Cordyceps?

This parasitic fungus invades the moth caterpillar in its cocoon (larvae) stage during winter, devours the caterpillar from within and then, in spring, emerges from the caterpillar's head as a stalk-like orange mushroom. Technically, Cordyceps is a fungus and not a mushroom, but since it has been referred to as a medicinal mushroom throughout history we will take the license to refer to it as such.

Cordyceps has been officially classified as an endangered species by CITES Management Authority of China. The cost is prohibitive.

There is a close relative, *Cordyceps militaris* that can be cultivated in laboratories on grains instead of inside moths' larvae. It is rich in pharmacologically active substances and, with scientific research and development efforts, it is now claimed that *Cordyceps militaris* (known in Thailand as “*tang chow*”) has similar chemical capacities and is just as beneficial.

Cultivation Methods:

There are two basic cultivation methods for Cordyceps. The method primarily used in China and the majority of Cordyceps sold on the world market is cultivated by Liquid Culture Fermentation. A small quantity of Cordyceps tissue is inoculated into a sterilized liquid medium where it grows rapidly taking about five days until harvest. The Cordyceps mycelium is filtered out from the liquid broth and then dried and ground to a fine powder.

This method is economical for large scale production however there is a major drawback in terms of quality.

Fungi feed by positioning themselves alongside their food source and they then exude transport molecules out through the cell walls to digest their food and carry the nutrients back into the cell. During this process the Cordyceps is exuding antimicrobial compounds to keep other organisms from competing for the food and still other compounds which adjust the pH and digest the food. Approximately 90% of the bioactive compounds produced by the Cordyceps are in the liquid that is discarded after the mycelium is harvested in the Liquid Culture Fermentation method.

The method of Cordyceps cultivation that we use is the solid-substrate or biomass method. Cordyceps is inoculated onto a solid nutrient source where it grows much more slowly. When the mycelium consumes most or all of the substrate it is ready for harvest and the entire contents of the growing container is harvested and dried which includes the mycelium, the residual substrate and all of the extra-cellular compounds produced throughout the growth process. This takes approximately 45 days. All the compounds are

captured. The synergy of all ingredients is delivered in a stable and highly bioavailable form by use of our Dynamic Freeze Dry Process described below.

Clearly the biomass cultivation method takes much longer, is significantly more expensive, and provides a higher quality product. Here is where the laboratory test results may not tell the entire story. While the tests indicate the levels of targeted active ingredients, the efficacy of these pharmacologically active ingredients is also dependent on the wide spectrum of extra cellular compounds that are not reflected in the lab tests but which act in synergy with all other ingredients to reproduce the effect that nature has designed. The buyer should know the cultivation method used, the production protocol, and the lab test results to insure they are purchasing quality product.

Under controlled laboratory conditions we can maintain the perfect environmental conditions:

Temperature

Light frequencies

Humidity

Air flow

Sanitary conditions

Each of these tightly controlled environmental conditions requires correct insulation (construction), and highly accurate measurement equipment in order to stay, at all times, within critical limits.

In addition to environmental factors, other biological aspects of the fungus require detailed technical knowledge:

Host range

Mating system

Cytology and fungal genetics

Inoculation of the medium

Nutritional requirements of the substrate

These must be added to a long list of successful cultivation practices each of which requires detailed explanation. Conditions affecting the formation of somata (fruiting bodies) have been extensively studied and mutations with superior traits have been obtained. This results in cordycepin, adenosine and polysaccharide levels in cultivated fruiting bodies of *C. militaris* which are consistently observed at higher levels than in naturally occurring *O. sinensis* fruiting bodies.

Alternative organic substrates have been developed for production of *C. Militaris* somata that is much less prone to microbial contamination than insects. Our company uses a proprietary formula for the substrate that provides a highly nutritious growing medium.

The genome of *C. militaris* has recently been sequenced and no orthologs of known human cytotoxins have been detected which makes it safe for human consumption. They have been approved by F.D.A. as a functional food, which is basically a food with medicinal properties, and cultivation in Thailand has become a successful and fast- growing industry.

The establishment and strict adherence to production protocols and critical testing procedures under GAP, GMP and HACCP are used to guarantee consistent quality and safety. Appropriate monitoring and control are essential to maintain customer satisfaction and confidence, and meet the highest regulatory standards.

The Harvest:

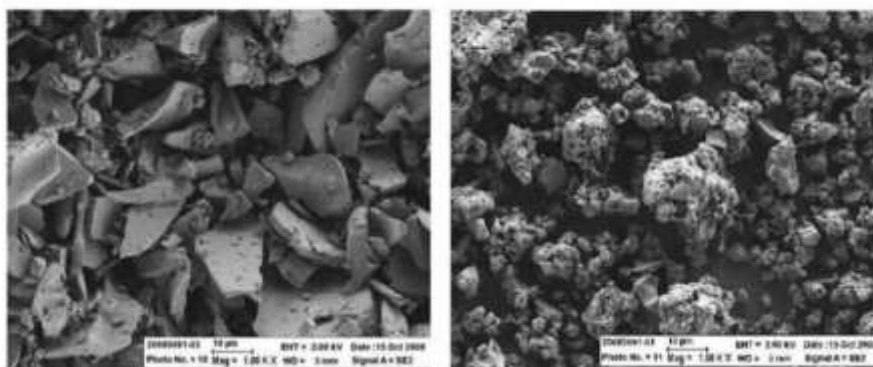
The Cordyceps harvest will inevitably be a combination of fruiting bodies (somata) with the

highest concentration of active ingredients combined with growing medium (substrate) which contains a much lower concentration of active ingredients. At this critical point in the process there is a wide range of “managerial discretion” that will dramatically affect the quality and effectiveness of the product.

Every step in this complex process is critical to the quality up to this point, but it is at this point that the rubber hits the road. It is at this point that the manufacturers must determine if they will prioritize quantity or quality. It is for this reason that consumers should rely on established reputable companies who share their commitment to safety, quality and effectiveness by applying standards that are verified by independent laboratory analysis.

The standard used by our company requires that we continue to grow the fruiting bodies until such time as there is no more than 5% residual substrate and at least 95% Cordyceps material. We do not compete on quality or price with Cordyceps produced by fermentation nor do we compete with lower quality product that has been harvested before its optimum potency. We back these claims with standardized analysis and encourage our customers do the same as part of their Quality Assurance program. The end user will feel the difference.

10 μ m scale



Tray Freeze Dried/Mechanically Ground Cellular Preservation Technology (CPT)

CPT is unique in that the plant tissue fractures between/along the layers of the cell walls **preserving cellular integrity and improving the retention of the bioactive intracellular contents**. In addition to higher bioactivity this process results in particles having a more bio-available particle structure. **Higher bioactivity combined with higher bio-availability make all of our CPT bio-activate botanicals significantly more effective**. This is particularly important in the case of cordyceps that has a complex cellular and molecular structure as it grows naturally.

The chemical analysis and measurement of specific targeted compounds is a valid analytical tool, but does not fully explain the body’s adaptive systems. Cellular Preservation Technology (CPT) takes you beyond the chemistry per se. CPT involves a holistic approach that includes subtle mechanisms of nature operating with intelligence through patterns of association and encoded information.

The healing message is not carried by one or several ingredients alone. It is most effectively delivered when we sustain the synergy of the complex cellular, extracellular, and molecular structure of our super herbs as they grow in nature.

The quality and effectiveness of our Cordyceps Powder is the result of remarkable

protocols and processes we employ from the fields to the finish products.

Standardized extracts:

Without going into the long and detailed debate regarding the efficacy of single extracts we take the “Whole Fungus” approach and provide our product as dynamic freeze dried powder. The chemicals used in the extraction process may denature the enzymes and otherwise damage certain of the ingredients. That aside, when you extract only targeted ingredients you will inevitably end up with a higher concentration of the targeted compound, but this may not work as well due to having eliminated other of the ingredients that act in synergy with the targeted ingredient. The end result may be a standardized high concentration of mediocre material. The complexity of the product as it has been designed by nature and the synergy of its many ingredients may be lost in the extraction process.

That being said, if one were to determine that a standardized extract better meets their needs, the best results would come from making the extraction from Thai Freeze Dry’s Cellular Fraction-Line activated powder.

Health benefits

Energy Management:

Energy is the source of your physical and mental power as well as all repair processes. When we restore, optimize and protect the energy producing systems of the human body we have made an investment in our most precious asset.

Cordyceps militaris is perhaps most well known as a rejuvenator. It increases your energy level, relieves fatigue, and speeds recovery. This makes *Cordyceps* an attractive supplement for athletes seeking to maximize performance and for the elderly but it equally applies to people of all ages and walks of life dealing with our fast paced modern and stressful lifestyle.

(1) Research has shown that *Cordyceps* increases oxygen utilization and (2) increases cellular ATP levels. Energy at the cellular level is released as ATP (adenosine triphosphate) loses a phosphate in the process of converting to ADP (adenosine diphosphate). The breaking of that phosphate bond releases energy that becomes available for use by our cells. This is a real increase in usable energy, as opposed to the illusion of energy increases stemming from the use of stimulants (caffeine, sugar, amphetamines ect) which results in an energy spike inevitably followed by a crash (energy deficiency) due to the fact that no real extra energy has been made available.

The double effect of increased ATP and better oxygen utilization from the use of *Cordyceps* provides more fuel to burn and more oxygen to burn it with.

Along with this added energy comes added vigor and this may be the source of the common claims that *cordyceps* increases sexual intent and performance. (Recall the Yaks as the story goes).

There is a huge interest by people curious about the mushroom’s sex-boosting properties. Whenever you have a product that has strong health benefits, every part of your body will benefit.

Immune system support:

Cordyceps militaris contains polysaccharides which help to activate and stimulate the immune system. Your body does not recognize the markers of these compounds and jerks

your immune system to attention in their presence. In addition to this well documented effect of polysaccharides such as Beta gluten in stimulating the immune response, there are other mechanisms at work at the cellular level.

1. Jia-Shi Zhu, M.D., Ph.D, and James Rippe, M.D. (2004) Presented at the American Physiological Society's (APS) annual scientific conference, Experimental Biology 2003, held April 17-21, 2004 in Washington D.C.
2. Guowei Dai, Tiantong Bao, Changfu Xu, Raymond Dooper and Jia Xi Zhu, Cordy Max™ Cs-3 Improves Steady-State Bioenergy Status in Mouse Liver. *The Journal of Alternative and Complimentay Medicine* Vol.7, Number 3, 2001, pp. 231-230

The bi-directional regulation of immune function is known as immunomodulation. (3) When Cordyceps is taken by a patient in an immune-deficient state (cancer, HIV) white blood cells increase in quantity and activity. When the same Cordyceps is given to someone in a hyper-immune condition (Lupus, Rheumatoid arthritis) the quantity and activity of white blood cells decrease while red blood cells increase. This bi-directional effect is typical of Adaptogens and is not experienced in allopathic medicine. The adaptogenic mechanism lies in the differentiation phase of blood cell production in the bone marrow, where immature cells are directed to mature. Signals from the body affect an appropriate response to attain homeostasis.

Anti-cancer benefits:

Aside from the known immune modulation triggered by polysaccharide compounds and immunomodulation described above there is another antitumor mechanism inherent in the structure of cordyceps. (4) Cordycepin is indistinguishable from normal adenosine with the exception that it lacks an oxygen atom in a particular position where an oxygen atom is required to create a bond that effectively forms the ladder structure that holds DNA together. DNA replication cannot occur in the absence of this oxygen atom and no new cell could be formed except for the fact that in a normal cell there is an inherent DNA repair mechanism. In this repair process cordycepin is removed and a new segment of adenosine will be inserted.

(5) Cancer cells however have lost this DNA repair mechanism. If DNA errors could be corrected the cell would not have evolved into a cancer cell. So while cancer cells are replicating at a rate that far exceeds the surrounding healthy tissue, cordycepin will interfere with the replication of the cancer cells while they do not interfere with the replication of healthy cells.

This is the mechanism by which pharmacologically active compounds in Cordyceps militaris lead to apoptotic cell death eventually inhibiting growth and unchecked proliferation of cancer cells. The combination of anti-cancer drugs working in synergy with cordyceps as an adjunctive therapy show strong potential for treatment most especially in drug-resistant cancers.

The pragmatic approach to health treatment in Asia is based on a long history of Cordyceps use and research. It is common practice in Asia to add traditional herbal remedies that demonstrate potential to the regular treatment regime. Results are then compared with the same conventional treatment without the adjunctive therapy.

(3)“On the Trail of the Yak/Ancient Cordyceps in the Modern World” J. Holliday, M. Cleaver, June 2004, pg. 26

(4) *Cordyceps Mushrrom: A Potent Anticancer Nutraceutical* Md. A Khan, M. Tania, D. Zhang and Han-chun Chen, Department of Biochemistry, School of Biological Science and Technology, Central South University, Changshu, Hunan 410013

(5) *Recent developments in mushrooms as anti-cancer therapeutics: a review* Neeema Patel , Arun Goyal Department of Biotechnology, Lovely Professional University, Jalandhar, India and Department of Biotechology, Indian Institute of Technology, Guwahati, India

Please keep in mind that 2/3 of the worlds’ population today are treated with natural medicine. Even where the most advanced conventional medical treatments are available, in Asia there is a more eclectic approach involving the use of traditional practices as adjunctive therapies. The knowledge of Cordyceps’ efficacy is so well established in Asia that many patients are taking Cordyceps as immune modulators while undergoing conventional treatments.

Chemotherapy and radiation therapy are known to damage the patient’s immune system. Opportunistic infections during chemotherapy are known to take their toll. The hope is that the chemo will kill the tumor cells before killing the healthy cells. The immune system is left deficient. If we can, through the use of Cordyceps, strengthen the immune system then the dosage and frequency of chemotherapy can be increased. The effectiveness of the conventional treatment can be enhanced, the damage can be decreased and recovery can be accelerated.

Anti-viral effects:

Many bacteria and all viruses (HIV included) lack the DNA repair mechanism referred to above and this may help to explain the anti-viral effects of cordyceps.

Kidney Health:

Kidney health seems to be a cornerstone of the body’s overall health. When kidneys fail the effects are felt in many other organs and systems. In this sense, the positive effects of Cordyceps on the kidneys support overall health and homeostasis.

Fatigue, impotence, anemia, hypertension, joint and back pains can all be symptoms of poor kidney health. Chronic renal failure tends to affect the elderly as our natural healing capabilities decrease with age.

(6) Cordyceps is a traditional Chinese and Tibetan herb used as a kidney tonic and is now being widely used in the U.S.A. for CKD patients to reduce anemia, lower blood pressure and improve kidney function with no adverse effects. Thai physicians focusing on the pharmacological properties of “*thang chao*” suggest its use to treat critical stage kidney disease. Cordyceps has been used to help act as angiotensin converting enzymes (ACE) inhibitors. They promote dilation of blood vessels, lower blood pressure and help preserve renal functions. Cordyceps has been extensively studied as an adjunctive therapy in patients undergoing renal transplants and cordyceps used in combination with conventional medications has been found to provide more effective results than either agent alone.

Human tests indicate that after one month of using Cordyceps at 15% reduction in blood pressure can be observed, urinary protein is reduced, and increases in superoxide dismutase (SOD) were found.

(6) *Botanical Medicines Used for Kidney Disease in the United States*, Eric Yarnell Bastry Univ, Kenmore WA. Published in Iranian Journal of Kidney Diseases/ Vol. 6/ Number 6, Nov. 2012

Diabetes:

Diabetes is one of the fastest growing health concerns worldwide with over 350 million diabetics 90% of which are Type 2 (adult onset) diabetes caused by cellular resistance to insulin. The culprit lies in excessive consumption of sugar and highly refined carbohydrates (white rice in Asia and white flour in the West). Diabetes may cause blindness, kidney disease, and increases the risk of stroke, high blood pressure, higher levels of blood cholesterol and cardiovascular disease.

Cordyceps demonstrates the ability to (7) regulate blood sugar, (8) improve blood glucose metabolism, and increase insulin sensitivity. An increase in the liver's glucose synthesis and regulation of enzymes with increased sensitivity to insulin is influenced by the use of Cordyceps.

A related issue is alcoholism which is linked to blood sugar metabolism. Alcohol can become addictive because of how fast and easily it breaks down. Like sugar and high energy starch foods alcohol is in a highly refined state and provides a boost of externally stimulated energy that will later result in burnout. The craving for refined foods is a biological imperative when the body is not able to produce adequate levels of energy. Cordyceps has been found to be exceptionally effective at reducing alcohol craving.

Sexual Potentiator:

One of the most frequently described "side effects" described by those who use Cordyceps is its aphrodisiac and sexual potentiate qualities for both men and women.

Cordyceps was used for thousands of years by Asian physicians to improve physical (including sexual) stamina and performance. This was recorded in "*The Classic Herbal of the Divine Plowman*" (written around 200 AD). Herbalists have been looking for natural alternatives to Viagra and Cordyceps is high on the list.

(9) A Chinese study released more than ten years before the introduction of Viagra reported a 64.8% improvement in erectile dysfunction from daily consumption of three grams of Cordyceps sinensis daily.

There are several factors contributing to Cordyceps effect as sexual potentiator.

- The most obvious is its ability to improve physical vitality and stamina in general. This has been described and referenced above.

(7) Kiho, T., Tabata, H. Ukai, S. and Hara, C. (1986) A minor protein-containing lactomannan from a sodium carbonate extract of *Cordyceps sinensis*.

- (8) Zhao CS., Wang JY., Zhang Y., Yu H., Cooper R., Smidt C., Zhu JS. (2002) Cordyceps Cs-4 improves glucose metabolism and increases insulin sensitivity in normal rats. *J. Altern Complement Med.* 2002 Aug; 8(4): 403
- (9) Holiday, J., Cleaver, M., *On The Trail of The Yak/ Ancient Cordyceps in the Modern World*, June 2004 p. 37
- (10) Cordyceps helps to dilate blood vessels which increase blood flow – a significant factor in erectile function.
 - (11) Studies have shown that Cordyceps significantly increases production of testosterone in males. Cordyceps inhibits production of the enzyme 5-alpha reductase thereby reducing the conversion of testosterone to dihydrotestosterone DHT. By this mechanism Cordyceps increases sexual desire for both men and women
 - (12) Studies show that Cordyceps is useful in increasing sperm production as well as regulating abnormal menstruation and sexual dysfunction including impotence. Increased kidney function (discussed above) helps to protect against water retention and also regulates growth hormone production leading to increased sperm in men and egg extruding in women.

ADEQUATE DOSAGE: A major issue is that of establishing adequate dosage. We have determined that a dosage for a healthy adult is 400 mg. per day. Our capsules will contain a full daily dose and we will not sell bulk powder to any company to use as an ingredient if they do not contractually agree to provide 400 mg. per daily dose. Coffee and other products with minute quantities of Cordyceps are delivering the sizzle but not the steak. You're getting the "hype" but not the beneficial effects. Cordyceps is part of these formulations only to be able make "label claims" for marketing purposes. This is not a highly concentrated chemical, it is a natural product and unless you ingest an adequate quantity you will not get an adequate result.

(10) Christopher Hobbs, *Medicinal Mushrooms: An Exploration of Tradition, Healing & Culture*, Botanical Press, Summertown, Tennessee, p.25

(11) Paul Stamets, *Mycelium Running*, Ten Speed Press 2005, p. 41

(12) Christopher Hobbs, *Medicinal Mushrooms: An Exploration of Tradition, Healing, & Culture*, Botanica Press, Summertown, Tennessee, p. 85.



CELLULAR PRESERVATION TECHNOLOGY

It is this process that distinguishes our herbs from all others.

1. Our herbs do not require any preservatives or heat treatment to prevent degradation. If this were a crème or liquid it would require preservatives since moisture is the medium for the enzymes and microorganisms to degrade the product.
2. The enzymes, vitamins, minerals and other vital ingredients are preserved with their full potency intact. The value of the herbs and botanicals are kept at their highest level.
3. It is exactly this high level of preservation of the vital ingredients that create the results that we would otherwise not achieve in traditional drying methods, even if we had used exactly the same ingredients in exactly the same proportions.
4. If we use heat to remove the moisture (de-hydration), the heat will denaturize the enzymes (making them ineffective), reduce the protein levels considerably and oxidize thermo-sensitive vitamins such as Vit C and beta-carotene.
5. The freeze dry process eliminates water without exposure to heat thereby preserving all of the enzymes, vitamins, minerals, and bioactive compounds.
6. The very small particle size (micronization - no need for grinding) and porous particle structure achieved by the Bio-Dynamic Freeze Dry Process allow our herbs to be more easily absorbed and metabolized. Vitamins such as Vit C are fat soluble and are easily and quickly absorbed into our body.
7. The effectiveness and capabilities of all our herbs are greatly enhanced due to the particulate size and structure produced by our transitional and evolutionary Freeze Dry process.



The Technology – Cellular Preservation Technology (CPT)

Cellular Preservation Technology or CPT is a proprietary technology which utilizes a modified form of freeze drying.

Freeze Drying has been used for centuries however the common industry standard freeze dry method typically uses traditional 'static' freeze drying with a further process of mechanical grinding.

Image 1 – Traditional Vs Cellular Preservation Technology (CPT)

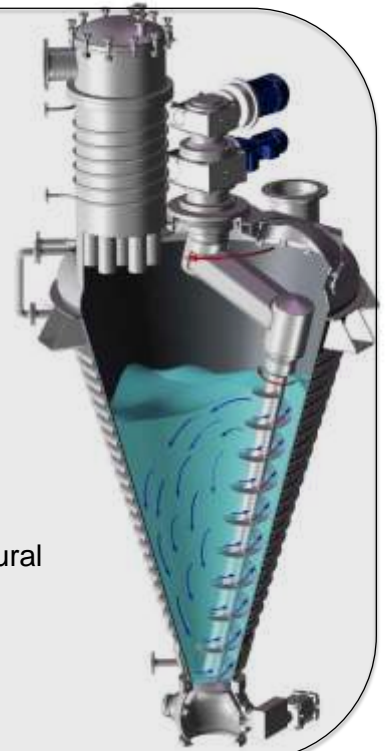
Traditional freeze drying



- multi-step process; bacteria and mould growth risk.
- static materials sitting on trays; 10-20% residual moisture
- product ground into a powder; product cell structure destroyed

Cellular Fracture Line technology

- 1-step process
- super frozen particles fly around in the product chamber
- no mechanical grinding.
- brittle material motion and sublimation of ice structure that hold it together causes product to break along natural elemental fracture lines.
- <0.1% residual moisture



CPT is a key component in the creation of our functional foods. It allows us to preserve a whole food in its fresh form, thus maintaining all of the medicinal activity of a live plant while providing the safety of a stable commodity.

This proprietary and transitional preservation process gives us the unique ability to provide a superior product compared to anything else available on the market today. The 'secret' to our technology is the Herbs are dried while they remain frozen in a vacuum state, rather than sitting motionless on trays (as in the traditional tray freeze drier), the product is flying round in a vortex. The deeply flash-frozen CPT granules decrease in size due to sublimation of the connecting ice structure and break into increasingly smaller particles along natural elemental fracture lines.

This creates a smaller particle size and porous structure without cellular hemorrhaging, caused by mechanical grinding of the traditional process as used in the industry today. CPT particles are much more easily absorbed and metabolized (more bio-available), and are more soluble for use as a catalyst ingredient in other formulations.

Solubility

As a food ingredient our herbs are highly soluble. Solubility ties into taste as well as ease to combine with other ingredients. This high level of solubility (enhanced by the CPT freeze dry process creates a more soluble particle structure),

Fresh Super herbs and Super foods

As soon as our botanicals are harvested they naturally begin to degrade. It is critically important to get them into the CPT process immediately after harvest. The logistics are challenging in any case, but the fact that they are grown at our doorstep in the mountains surrounding Chiang Mai, Thailand makes it all possible.

Higher Bioactivity Superior Efficacy

The objective achieved by CPT is preservation not only of the targeted ingredients but preservation of the entire cellular and molecular structure of the live plant. This is achieved by:

- An Evolutionary and Transitional Freeze Dry Process where the product is never exposed to the destructive oxidative forces of heat.
- Plant tissue fractures between/along the layers of the cell walls preserving cellular integrity and improving the retention of the bioactive intracellular contents.
- Water removed as a liquid at an extremely low constant temperature (minus 55 deg C) evaporates at a constant rate while the quantity of water steadily decreases. This creates surface tension. Any solid structure in contact with the water will normally experience surface tension strong enough to damage fragile cell walls; CPT removes water in its gaseous state (water vapor) and avoids this destructive surface tension.
- Exposure of the entire surface area to sublimation results in “even” drying which preserves cellular integrity.

The net result is preservation of the complex synergistic structure as close as possible to how it exists in nature. This translates to a more highly bioactive more effective powder.

Higher Absorption and Higher Bio-Availability

Particles break down inside the product chamber with minimal need for mechanical grinding. They break down due to the movement of the super frozen particles and sublimation of the ice structure that holds the particles together. This causes them to fall into small porous particles along the natural Cellular Lines creating soft, porous particles which have more surface area per unit of weight and therefore are absorb more easily.

The function and value of our food supplements lie not in lab tests alone, but in their energetic breakdown and uptake inside your body and the preservation of enzymes, proteins and vitamins.

The ability of your body to store or use these nutrients is called bio-availability – yet another huge advantage of our Cellular Preservation Technology activated botanicals.

The quality and effectiveness of our Products are the result of the remarkable protocols and processes we employ from the fields to the finished product. For details on this evolutionary

process, please contact us at www.cptsuperherbs.com