

Rationale For Healthy Condiments

Condiments

Although condiments are primarily used as seasoning to enhance taste, they can also provide important health-giving nutrients if properly selected and designed.

HEALTHY CONDIMENTS

W Y S O N G

WHOLE SALT™:

A delicious, good-for-you salt. Tastes like salt, only more piquant. A healthy salt containing over 74 trace minerals from a pre-pollution source of natural whole sea salt and composted sea vegetation. Wysong Whole Salt™ provides health and flavor benefits superior to everyday refined and additive-laden commercial salt.

Whole Salt™: Celtic Hand-Harvested Sea Salt, Whole Rock Salt, Geologically Composted Sea Vegetation.

High Calcium/Potassium Whole Salt™: Celtic Hand Harvested Sea Salt, Sea Rock Salt, Potassium Citrate, Coral Calcium, Milk Calcium, Eggshell Calcium, Composted Sea Vegetation.

Garlic Whole Salt™: Wysong Whole Salt and Organic Garlic.

PEPPER PLUS™:

A nutrient-enhancing alternative to ordinary black pepper. It contains a delicious blend of freshly ground black, green, white, and pink peppercorns enhanced with *Piper nigrum* alkaloid extract. This unique blend serves as a thermonutrient stimulating metabolism, gastric secretion, promoting digestion, and increasing absorption of vitamins and minerals as much as 250%. Pepper Plus™ is slightly “hotter” than conventional peppers so less is required for spiciness.

CHEEZYME™:

A natural seasoning formulated from cheese, food enzymes, digestive cultures, and over 74 trace minerals.

Ingredients: White Cheddar Cheese, Monterey Jack Cheese, Swiss Cheese, Wysong Whole Salt™, Protease, Amylase, Lipase, Cellulase, *Enterococcus faecium*, *Lactobacillus acidophilus*, *Lactobacillus bifidus*, *Lactobacillus plantarum*.



Salt

A growing number of people are now eating less salt due to suspected health problems. Doctors have been prescribing low salt diets as treatment for high blood pressure, edema, and heart and kidney diseases.

Although the accusing finger is pointed at salt, dangers lurking within the common salt shaker may in fact result primarily from the unbalanced, purified sodium chloride, and the artificial, additive-laden composition of commercial salt. True natural salt, on the other hand, is a complex product comprised of a wide range of minerals (over 180 forms in some deposits), in addition to sodium and chloride.

Salt and other minerals are in fact essential for optimal health. Although some salt lies within a variety of natural foods, research has shown that supplemental salt can also be an important, healthy part of our diet, provided it is used in moderation and contains a proper balance of sodium chloride, calcium, potassium, and other minerals. In fact, deficiencies in dietary salt intake can lead to weakness, illness, and even death.

Natural whole salt has been used since the earliest stages of history by humans and animals. It has now all but disappeared, having been replaced by “purified” products. Salt was at one time tendered as valuable currency and has been found to be one of the earliest and most important commodities in Europe. It was traded like money and its value led to even the measure of a man being “worth his salt.” Early man took cues from animals, which seek out natural salt licks. Humans produced salt by filling a hollow log with sea water and letting the water evaporate, leaving the salt. Also, primitive people of the remote areas of the Himalayas and the interior of Africa still add sodium-rich marsh grasses to their food.

Such common, and even cherished, use throughout history underscores the modern scientific evidence that natural whole salt is linked to health, not disease.

Salt and Mineral Physiology

The human body cannot live without salt. Twenty-seven percent of body salt is stored in the bones. It is critical in making bones hard. Salt deficiency may be linked to osteoporosis if salt is removed from the bones to maintain proper blood sodium levels.

A low salt intake also contributes to acid buildup in cells, which creates acidosis, a condition that also promotes osteoporosis and a host of other degenerative diseases. Acidosis, for example, damages DNA, the cell's genetic code. DNA damage is thought to be a possible initiator of cancer. Many cancer patients do indeed have low salt levels.

Salt does not "cause" high blood pressure. High blood pressure occurs when the body tissue is severely dehydrated. When cells are dehydrated, water is taken from the blood causing a decrease in blood volume. As a result, vital capillary beds (small blood vessel networks) in the heart and brain are forced to constrict to maintain blood flow throughout the body. This leads to an increase in blood pressure. Salt is retained by the body not because it is consumed in excess, but because it helps to conserve body water.

Some researchers believe that reducing sodium in the diet causes the body to work harder to retain salt. The body actually needs more water, not less salt. When water intake is adequate, water itself actually works as a natural diuretic reducing blood pressure and edema.

Sodium intake, as judged by 24-hour sodium excretion, is not clearly related to arterial blood pressure. It also remains to be established if any commonly ingested sodium salt, other than NaCl, will increase blood pressure. In studies using salt-sensitive hypertensive animals, blood

pressure did not increase when supplemented with non-chloride salts, such as sodium bicarbonate, ascorbate, phosphate, glutamine, aspartate, and glycinate. Diets including a well-balanced whole salt can actually lower blood pressure. On the other hand, indiscriminate use of refined NaCl (common white table salt) or the high consumption of processed foods containing refined NaCl, both increase sodium (modern dietary excess) and decrease potassium (a modern dietary deficiency). Tipping this balance too far (less potassium, more refined saline) may adversely affect blood pressure.

Mineral absorption is significantly affected by dietary mineral balance. Several minerals are known to alter the absorption rates of other minerals during digestion. An improper nutrient balance, particularly dangerous when large doses of single purified nutrients are consumed, can result not only in toxicities, but deficiencies as a result of competi-

Mineral	Function
Sodium, Chloride, and Potassium	Necessary for maintaining proper heart and nerve function, normal fluid balance, and some enzyme functions.
Calcium	Necessary for the formation and maintenance of bones, blood coagulation, and heart, nerve, and muscle function.
Magnesium	Participates in 80% of enzyme reactions, including those necessary for protein formation, basic energy metabolism, and neuromuscular function.
Iron	Used to make hemoglobin, which carries oxygen in the blood.
Copper	Used to cross-link elastin in blood vessels.
Zinc	A co-factor for over seventy enzymes. Necessary for normal cell-mediated immune function, and for transcription of proteins (growth).
Cobalt	Essential to the formation of vitamin B ₁₂ .
Phosphorous (as phosphate)	Necessary for energy storage and the formation of DNA and RNA.

Table 1.

tive mineral interrelationships. In contrast to many other nutrients, minerals cannot be synthesized in the body. Thus it is particularly critical that they not only be present in the diet, but present in balanced, healthful quantities.

A growing list of minerals is becoming an essential part of our diet. For example:

The Mineral-Deficient American Diet

A deficiency of minerals would, at the very least, compromise optimal health. The absence of immediate health problems does not mean the diet is adequate. Most forms of nutritional deficiencies show only mild, if any, immediate symptoms. It is later in life when symptoms become more visible, often indicating the onset of degenerative disease. In 1971, the Joint Task Force of the USDA concluded that the convenience-oriented diet of the past fifty years has contributed to the prevalence of degenerative disease in America.

Part of the reason why the average American diet lacks optimal levels of important trace mineral nutrients is due to the overabundance of "empty" calorie foods. White breads, pop, snacks, breakfast cereals, refined pastas, and candies are "empty" calories, devoid of almost any mineral content. Consequently, the balance of the diet must carry the burden of supplying all of the nutrients.

Even fresh fruits, vegetables, and whole grains are becoming a less dependable source of trace minerals. Each time a crop is grown, the plants take up approximately 40 elements from the soil, but only nitrogen, phosphorous, and potassium (NPK) are replaced when the land is fertilized with our modern farming techniques. (Unlike the "old days" when manures and organic wastes were returned to the soil.) As a

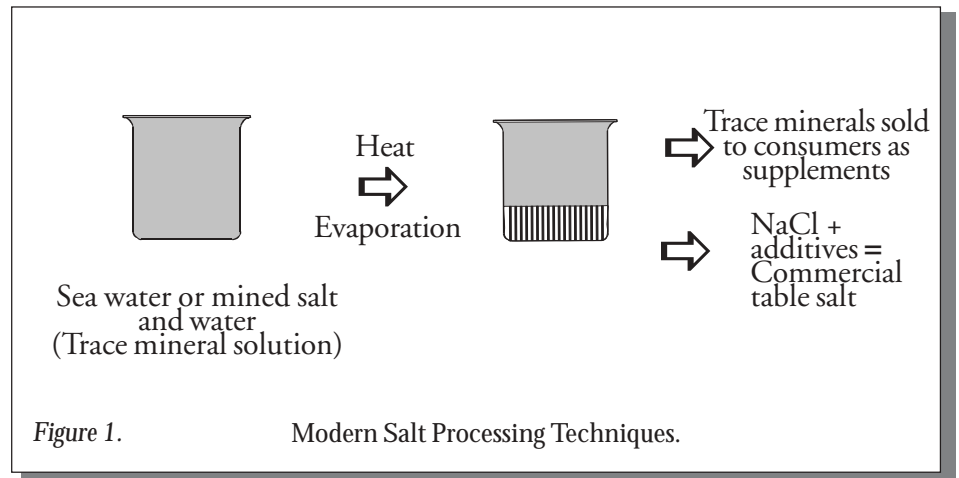
result, the soil's nutrient density decreases with each harvest, giving rise to crops with fewer and fewer minerals.

Further complicating the problem is evidence that the levels currently considered "safe" or "adequate" are not optimal for best health. As a result, analyses of both self-selected diets and body mineral content demonstrate that many types of mineral deficiencies are common.

Modern Processing Techniques

Common commercial table salts lack many of the minerals they contained originally since processing methods strip these trace minerals away. Typically, commercial salt starts as either a solution of mined salt and water, or seawater. The brine is then run into crystallizing ponds where sodium chloride crystals form and fall out of the mineral-rich solution. The residual solution is then drained and sold to companies that extract various other minerals. Ordinary salt is also processed by vacuum evaporation, often producing salt with even fewer minerals. Kiln drying, the end-stage of salt purification during which the salt is heated at temperatures as high as 500 degrees Fahrenheit, is thought to destroy much of the remaining digestible mineral content. The result is about a 99.8% pure sodium chloride salt, which is sold primarily to industries for setting dyes, ore processing, food processing, and various other chemical uses. These uses require a very pure sodium chloride salt. Only a small fraction of the salt made is sold to consumers for consumption. Commercial salts are intended to be nearly pure sodium chloride, rather than a healthy, multi-mineral, natural seasoning.

After most of the minerals essential to health – often called "impurities" by commercial salt manufacturers – have been drained off, the salt is treated with a variety of additives. Among them are sodium silica aluminate, sodium ferrocyanide decahydrate (yellow prussiate of soda), potassium iodide, calcium



phosphate, magnesium carbonate, sodium bicarbonate, and dextrose. These are added to prevent caking and to adjust pH; dextrose may even be added to mask the taste of the other additives.

Essentially all commercial salts, including the "sea salts" commonly sold in health food stores, have gone through these processes. If "sea salts" have not gone through standard salt processing, they will have a grayish or "dirty" color instead of the clear or white appearance of nearly pure sodium chloride crystals. Some health food store salts substitute magnesium carbonate for the sodium silica aluminate anti-caking agent, but the advantage, if any, is slight.

The processing technique that allows "sea salt" to retain its natural mineral content is known as slow evaporation. This is rarely done in the United States because it is slow, expensive, and bits of sand, seaweed, and other "undesirable" debris get trapped in the crystals. True "sea salts" currently made in this country must be labeled "Not Intended for Human Consumption" due to the possible presence of sewage, detergents, pesticides, and other contaminants which may remain in salt coming from today's seas.

Wysong Whole Salt™ Processing

The production of Wysong Whole Salt™ avoids processes that strip away

nutrients. Whole Salt is a combination of rock salt mined from an ancient sea bed, and geologically composted mineral-rich sea vegetation also derived from an ancient dried up sea bed. This combination provides an array of minerals from untainted seas dried up under ground, which existed prior to the widely polluted seas of today. The balance of minerals in whole sea salt closely approximates the balance found within the tissues of the body.

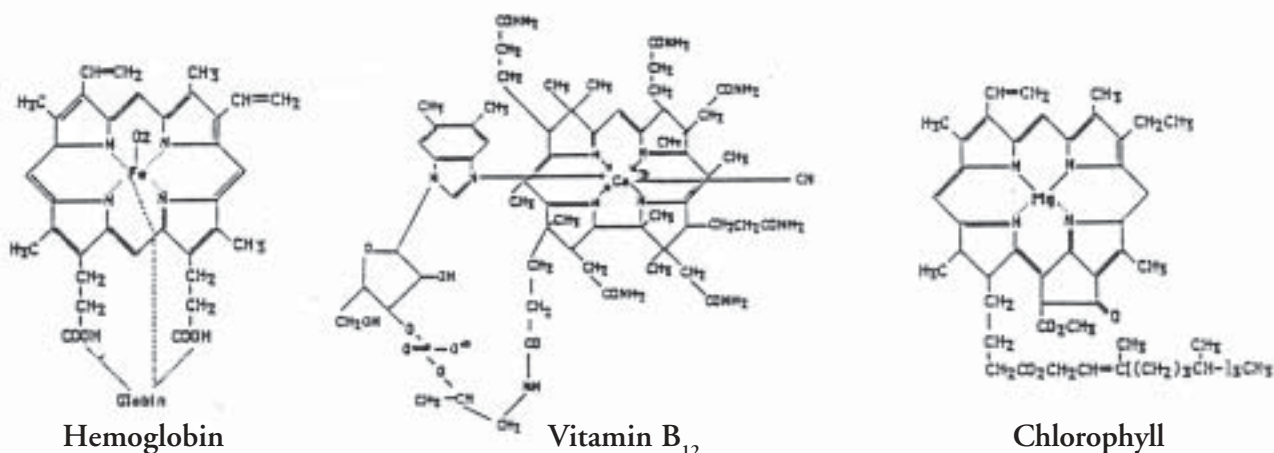
Whole rock salt is hand selected, crushed, and screened under USDA approved conditions. Minerals are not lost to processing. Whole Salt has the natural off-white color of a mineral-rich salt, not the clear or white appearance of refined sodium chloride crystals. Whole Salt also has a more full-flavored, rich taste than commercial salts. It is interesting to note that in animal palatability tests, the rock salt used in Whole Salt is almost always preferred over commercial block salts.

Celtic Salt

Celtic salt is a very special form of sea salt. Its merits are many and legendary including:

- In France and many other countries outside the U.S., Celtic sea salt is treasured as the finest of all condiments.
- Celtic sea salt is free from any processing and is dried only by

CHEMICAL STRUCTURES OF CHELATED MINERALS



- the hot summer sun and wind.
- It is harvested by expert saltmakers who gather the salt with wooden hand tools from the eddying salt flats within the harvesting marshes.
 - Because it is sun dried, it retains some of the ocean moisture. This helps lock in many vital trace elements.
 - The characteristic light grey color comes from the clay sole of the basins. That clay helps purify through filtration and adsorption and ionizes the many mineral salts, making them even richer in soluble electrolytes.
 - Natural sea salt minerals are necessary for osmotic pressures within tissues such as the kidney's glomerulus and blood vessel walls.
 - Redissolved sea salt in water has an astonishing likeness to human blood and body fluids.
 - During World War II, Navy doctors saved many lives by using sea salt water for blood transfusion when blood supplies ran out.

Refined salt is 99.9% sodium chloride. It almost always contains additives, like potassium-iodide, sugar, aluminum silicate, and other additives.

Trace Minerals In Whole Salt	
Silicon	Scandium
Aluminum	Cobalt
Potassium	Ytterbium
Magnesium	Strontium
Sulfur	Barium
Iron	Gold
Calcium	Eutopium
Titanium	Neodymium
Sodium	Cerium
Manganese	Thorium
Gallium	Uranium
Molybdenum	Nickel
Germanium	Beryllium
Iodine	Bismuth
Bromine	Boron
Tungsten	Cadmium
Hafnium	Chloride
Tantalum	Copper
Zirconium	Flouride
Arsenic	Lithium
Antimony	Mercury
Selenium	Palladium
Zinc	Phosphate
Samarium	Platinum
Holmium	Rhodium
Terbium	Rubidium
Iridium	Silver
Lutetium	Tellurium
Chromium	Thulium
Lanthanum	Tin
Ruthenium	Vanadium
Yttrium	Dysprosium
Indium	Praseodymium
Lead	Thallium
Niobium	Rhenium
Carbon	Erbium
Hydrogen	Oxygen
Nitrogen	Cesium

Table 2

When dietary deficiency of trace elements occurs, cells lose electrolyte equilibrium. Even a minute disruption can cause cells to burst, nervous disorders, brain damage, or muscle weakness, as well as a breakdown of cell-regenerating processes.

Chelated Minerals

Whole Salt brings together a combination of over 70 naturally chelated minerals. Chelated minerals are more readily absorbed by the digestive system than inorganic salts (common in mineral supplements) because the minerals are protected from interactions that can inhibit absorption. Chelates are minerals bound by amino acids (from protein) or carbohydrates. Cobalt in vitamin B₁₂, iron in the hemoglobin of blood, and magnesium in the chlorophyll of plants are all examples of mineral chelates.

Although the exact absorption mechanism for minerals is largely unknown, most minerals are believed to require chelation for absorption. If the mineral is not chelated when food is consumed, then it must be chelated within the digestive tract. This requires that chelating molecules be concomitantly present, which may or may not be the case.

Studies show that a diet including chelated minerals can improve health, increase energy levels, decrease mortality rate, and increase growth rates.

Wysong High Calcium/Potassium Whole Salt™

High Calcium/Potassium Whole Salt™ is a healthy and delicious alternative to refined, high heat processed sodium chloride table salts containing various additives. It is also a much more palatable alternative than potassium chloride salt substitutes. High Calcium/Potassium Whole Salt helps replenish trace minerals, calcium and potassium commonly lacking in the modern diet.

Calcium and potassium are critical minerals in health. Modern eating patterns make paying attention to these minerals critical. Here's why:

Calcium and Health

- The Dietary Goals of the United States for calcium is between 1,000 mg and 1,500 mg per day for adults.
- Human ancestors living during Paleolithic times were known to ingest approximately 1,600 mg of calcium per day.
- The risk of colon cancer may be reduced by consuming at least 700 mg of calcium per day.
- Calcium is thought to play a role in intracellular lipogenesis and lipolysis, which is part of the regulation of body fat distribution.
- Bones and teeth are 99% calcium, thus dietary calcium is needed to maintain them.
- A calcium deficiency will lead to osteoporosis because calcium will be removed from the bones to maintain the body's chemical reactions.
- Calcium is necessary for the regulation of muscle contraction and relaxation, including the most important muscles in the body – those found in the heart.

- Calcium is involved in the blood clotting process.
- Nerve impulses cannot be transmitted without an adequate calcium supply.
- Calcium is extremely important in blood pressure regulation.
- Calcium is a co-factor for several enzymatic processes of the body.
- The absorption of many vitamins is dependant upon calcium intake, especially vitamin B12.

Potassium and Health

Potassium is an essential and critical mineral in health. Modern eating patterns make paying attention to potassium critical. Here's why:

- The Dietary Goals of the United States for potassium suggest 2000 milligrams be included in the diet daily.
- Hunter/gatherer diets are remarkably unlike modern diets with regard to potassium intake. Primitive diets on average contain ten times or more potassium than sodium, whereas modern diets contain one and a half times as much sodium as potassium.
- Because sodium and potassium must be in balance, the excessive use of sodium-heavy salt depletes the body's conservation of its often scarce potassium supplies.
- Potassium is found in a wide range of natural foods (dairy products, meats, poultry, fish, legumes, fruits, and vegetables).
- Potassium is lost through cooking, although the amount lost varies according to the cooking methods used. A boiled potato may lose up to 50 percent of its original potassium content.
- Adding a modest amount of High Potassium Whole Salt to boiling water helps prevent potassium from leaching out of foods during cooking.

- Potassium constitutes 5% of the total mineral content of the body.
- Potassium is necessary for the stimulation of nerve impulses and muscle contractions and is important for the maintenance of osmotic pressure.
- Since potassium is essential for the transmission of nerve impulses to the brain, it has been effective in the treatment of headache-causing allergies.
- Potassium and sodium help regulate water balance, tissue hydration and critical alkalinity.
- Potassium interplays in the body's acid-alkali balance, kidney and adrenal functioning, the conversion of glucose to glycogen (a stored carbohydrate in muscle), carbohydrate metabolism, and the biosynthesis of protein and nucleic acids.
- Potassium deficiency may cause nervous disorders, insomnia, constipation, slow and irregular heartbeat, and muscle damage.
- Potassium is useful in the prevention of strokes.
- Studies have shown that groups supplemented with potassium suffered a 2-percent rate of fatal strokes, as compared with the 83-percent rate of the unsupplemented group.
- In another study, potassium supplementation was able to protect against kidney damage resulting from hypertension.
- An improper balance of sodium to potassium can aggravate hypertension or high blood pressure.
- Potassium has been used to prevent and treat cases of high blood pressure which were directly caused by excessive salt intake.
- Research has found that oral potassium citrate, as found in High Potassium Whole Salt and Alkinate™, prevents the increased calcium losses and bone turnover caused by high dietary salt intake.

Wysong Garlic Whole Salt™

Garlic Whole Salt™ is a delicious seasoning that combines mineral-rich Wysong Whole Salt and wholesome garlic. Not only is garlic a flavorful and natural herb containing a wide range of vitamins, minerals, and enzymes, but it also has been credited with a broad variety of healthful benefits. Garlic has been used for thousands of years as a remedy for ailments ranging from earaches to cancer.

Garlic and Health

When exposed to a carcinogen, subjects given garlic have a lower incidence of cancer. Other research has found that an extract of garlic stimulates the immune system to produce more Natural Killer Cells (NKC) that attack cancer as well as virus-infected cells.

Garlic is a potent antibiotic, antifungal, anthelmintic (kills intestinal parasites), and antiviral agent. In China, an outbreak of usually fatal cryptococcal meningitis was successfully treated with garlic. Garlic has been shown to be more effective than penicillin for fighting throat infections and has also been effective in treating typhus, dysentery, cholera, and influenza. Garlic's antimicrobial and immune-stimulating effects also combine to increase resistance to infections and fever.

Perhaps the most exciting benefits of garlic are its many cardiovascular effects, one of which is its anti-clotting activity via the inhibition of cyclo-oxygenase/thromboxane A₂ platelet agglutination. Garlic also decreases plasma viscosity, decreases blood pressure, and allows blood vessels to expand (via allyl trisulfide). These combined effects reduce the load on the heart and blood vessels. Additionally, blood levels of cholesterol, VLDL and LDL are decreased while levels of beneficial HDL in the blood are increased. The combination of this wide array of beneficial factors has been demonstrated to decrease the risk of stroke, heart at-

tack, hardening of the arteries, and atherosclerotic lesions.

In addition to the above effects, garlic also has anti-spasmodic and beneficial gastrointestinal effects as well.

Whole Salt, High Potassium Whole Salt, and Garlic Whole Salt are healthy alternatives to ordinary table salt or "sea salt." They are not only delicious seasonings, but also well-rounded, natural salts unadulterated by additives, heating, or purifying processes. Whole Salt and Garlic Whole Salt provide minerals in ratios similar to those found in the sea and in body tissues, without the health risks of polluted salt-water resources.

Pepper Plus™

Pepper has been used by humans since 6000 B.C. It is used to enhance palatability, preserve meat, and for its medicinal value. It was once so highly valued that it was called "black gold" and still makes up 35% of the world's spice trade.

Black, white, green, and pink peppercorns are derived from berries of the same plant species known as *Piper nigrum*. The various colors represent different stages in the berry's ripeness, and affect their nutritional value.

Piper nigrum's aroma and flavor are based upon its

Vitamin and Mineral Content of <i>Piper nigrum</i>		
Nutrients (mg/100g)	Black Seeds	Green Seeds
Calcium	460.00	270.00
Phosphorous	198.00	70.00
Iron	16.80	2.40
Thiamin	0.09	0.05
Riboflavin	0.14	0.04
Niacin	1.40	0.20
Vitamin C	-	1.00
Vitamin A	1800 IU	900 IU

Table 3.

alkaloid content, which is determined predominantly by its grower via traditional farming practices and geographical region. Alkaloids are phytochemicals which make *Piper nigrum* an effective medicinal treatment that is greatly prized in medicines.

Piper nigrum alkaloid extracts act as thermotrients (heat-generating) that enhance digestion, and thus bioavailability of nutrients, by as much as 250%. Based on human studies, betacarotene, vitamins C, E, and B₆, as well as coenzyme Q₁₀ have significantly improved bioavailability rates when consumed with this alkaloid extract.

Traditional and Holistic Medicinal Uses of Pepper

>Treatment for intestinal gas.
>Rheumatism and muscular pain.
>Stomach pain resulting from hernia or cold.
>Cold Sores.
>Hernia.
>Sprains.
>Baldness.
>Circulatory disorders, varicose veins.
>Headache, migraine, and dizziness.
>Osteoporosis.
>Cold sweats, fatigue, and tiredness.
>Impotence.
>Lower back ache.
>Frigidity.
>Irregular menstruation.
>Influenza.
>Low blood pressure.
>Asthma.
>Treatment of coughs.

Table 4.

Human studies have also shown that it enhances overall digestion by affecting peristaltic movement of the digestive tract, increasing blood flow, and secretion of digestive enzymes. Pepper alkaloids activate thermoreceptors throughout the nervous system that in turn interfere with pain receptors causing desensitization. Thermogenesis is also linked to the body's metabolic rate. By stimulating the body to produce more "heat energy" metabolism is increased thus allowing for increased nutrient absorption.

These alkaloids also have decongestant, analgesic (pain-relieving), broad antimicrobial, antiparasitic, and insecticidal properties.

Pepper Plus™ is an enhanced alternative to commonly available conventional black pepper. It contains red, white, green and black peppercorns, thus providing the various nutrients provided by pepper at its different stages of ripeness, along with concentrated *Piper nigrum* alkaloid extract for increased thermogenic and health-promoting activity.

Wysong Cheezyme™

Cheezyme™ is a natural seasoning containing a concentrated blend of probiotic cultures and digestion-enhancing food enzymes from vegetarian sources. Cheezyme also contains Wysong Whole Salt with over 74 chelated minerals exactly as they are found in nature.

Delicious Cheezyme is designed to restore fresh, healthy qualities to any heat processed food.

All warm-blooded animals are profoundly dependent on the microbial world. The majority of microorganisms favor cohabitation and cooperation. Intestinal probiotics play an important role in determining the digestive mechanisms and general health of humans.

Probiotics play a role in combating potential pathogenic microorganisms and exert a variety of subtle effects that can enhance overall health and disease resistance. (For further information on the many benefits of probiotics see Probiotic Supplementation monograph.)

Cheezyme is wonderful sprinkled on popcorn, salads, potatoes, or any dish where a cheese flavor is desired.

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

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