Chiang Da

Thai Name: Chiang Da Herb (Found in the northern part of Thailand.)
Botanical Name: Gymnema Sylvestre
English/Common Name: Gymnema Sylvestre "Sugar Destroyer"
Ayurvedic Name: Gurmar (Gumar) "Sugar Destroyer"
Parts used: Leaves
Habitat and Botany: A climbing plant common in Central and Southern India.

Uses

1. Gymnema Silvestre Has Been Used In India for More Than 2000 Years

2. To Control The Presence Of Carbohydrates In **Urine And Diabetes.**

3. Used As a Stimulant,

4. Laxative, Diuretic, and Stomach, Anti- Anthelmintic.

5. It is also used in The Diseases of Heart, Piles, Asthma, Bronchitis, Biliousness and cures Burning Sensation.

6. It Stimulates the Heart, Urinary Disorders.

7. It Avoids the Harmful Effects of Insulin.

8. The Indian Name Gumar or Gurmar Literally Means "Sugar Killer".

9. Used in Treatment of Obesity and to Control Glucose Level of Diabetes.

10. Regular Use Will Help Keep Blood Sugar Level within Acceptable Limits.

Blocks sweet taste sensations

Its leaves contain triterpenoid saponins, flavonols, and gurmarin. The major biologically active plant molecules are gymnemic acids, a class of triterpenoid saponins, which have the effect of suppressing the taste of sweetness on the tongue from sucrose (sugar), stevia, xylitol, and artificial sweeteners such as aspartame.

The sweet-blocking effect of *G. sylvestre* lasts from 15 to 50 minutes and may even persist for several hours. Gymnemic acids apparently have no long-term effects on taste and they do not influence bitter, salty, or sour taste perception.

Effects on sugar absorption & insulin secretion

Gynnemic acid compounds in *Gymnema sylvestre* can also attach to receptors on the intestinal walls, helping to reduce absorption of sugar molecules in the gut. This process can lower blood sugar and promote insulin secretion and release.

Gurmar or Gymnema Sylvestre in the Products:
Freeze Dried Powder in vegetarian/vegan capsules.

Ayurvedic Study of Gymnema Sylvestre

This herb from India has been used for 100 years to balance blood sugar levels. It works with the pancreas and helps build necessary insulin producing cells. It has been used for both type I and type II diabetes.
Used to treat obesity and diabetes in India for over 2000 years.
Studies have shown the blood sugar balancing effect of this herb. It has been shown in a clinical trial to assist in the regeneration of insulin producing Beta Cells.
Can reduce prescription insulin requirements for those diabetics who actively monitor blood sugar levels.
Helps blood sugar stay within acceptable limits.
Also helps to reduce empty calories in the body and helps the body to properly use ingested sugars. It curbs down the craving for sugars. It acts in the taste buds in the oral cavity as well as in the intestine.
It contains Gymnemic Acid and the atomic arrangement of Gymnemic acid molecules are similar to that of glucose molecules.
Gymnemic Acid molecules fill the receptor locations on the taste buds thereby preventing activation of taste buds by sugar molecules present in the food, thus, curbing the sugar craving.
Similarly, Gymnemic acid molecules fill the receptor location in the absorptive external layers of the intestine thereby preventing the sugar molecules absorption by the intestine which results in low blood sugar level.

ANTI-DIABETIC

Effect of a Leaf Extract from Gymnema Sylvestre.
Article by
Dr. Kumar Pati (Published in Health World magazine, USA) “BURLINGAME, CA –
According to Dr. Baskaran and Dr. Ahamath, of the Department of Biochemistry, Post-Graduate Institute of Basic Medical Sciences, Madras, India, the therapeutic properties of Gymnema Sylvestre, an extract from the leaves of Gymnema Sylvestre, in controlling hyperglycaemia was investigated in 22 type-2 diabetic patients on conventional oral anti-hyperglycaemic agents. Gymnema Sylvestre, (400 mg/day) was administered for 18-20 months as a supplement to the conventional oral drugs.

During Gymnema Sylvestre supplementation, the patients showed a significant reduction in blood glucose, Glycosylated haemoglobin and Glycosylated plasma proteins, and conventional drug usage could be increased.

Five of the 22 diabetic patients were able to discontinue their conventional drug and maintain their blood glucose homeostasis with Gymnema Sylvestre alone. These data suggest that the beta cells may be regenerated/repaired in Type-2 diabetic patients on Gymnema Sylvestre supplementation. This is supported by the appearance of raised insulin levels in the serum of patients after Gymnema Sylvestre supplementation.

Type-2 NIDDM, (non-insulin dependent) diabetes mellitus, is among the most common disorders in developed and developing countries, which report that abnormalities of beta cell function and secretion exist in patients with non-insulin.

Control of blood glucose on a 24-hour basis is the desired goal in the management of diabetes mellitus, so as to prevent or delay the onset of the secondary complications of diabetes mellitus. Dieting, physical exercise and inclusion of dietary fibre have been used with limited success.

Oral Anti-Hyperglycaemic drugs play an important role in the treatment of Type-2 diabetes mellitus. There are two groups of oral anti-hyperglycaemic agents available for clinical use, i.e. the Sulfonylureas and Biguanides. The Sulfonylureas are reported to regulate blood glucose homeostasis by stimulating pancreatic secretion of insulin. Both have a characteristic profile of side effects.

Many investigations of the oral Anti-Hyperglycaemic agents of plant origin used in traditional medicine have been conducted. One such preparation proven effective in diabetes mellitus is an extract of the leaves of Gymnema Sylvestre.

Sushruta (6th Century B.C.) and practitioners of Ayurveda in ancient India have recommended the use of the leaves of the 'Sala Saradi' group and it has been described in Indian Medicinal Plants.
GS, an extract from Gymnema Sylvestre, has been shown to regenerate the islets of Langerhans, especially the beta cells, in both streptozotocin and alloxan-treated rats.
GS, the water soluble acidic fraction of an ethanol extract of the leaves of Gymnema Sylvestre, was tested by oral administration (400 mg./day, packed in a hard gelatine capsule) to 22 type 2 diabetic patients.
Patients were in the age group of 40-62 years and 3 were on Tolbutamide. The duration of diabetes varied from 1 to 12 years and the average was 4.6 years. Blood glucose was adjusted to prevent hypoglycaemic episodes.
Blood and Urine analysis were made periodically in both groups. Venous blood samples were drawn under fasting conditions from the patients into tubes containing the disodium salt of ethylene Diamine Tetra acetic acid (EDTA) as anticoagulant.
Plasma was separated by decantation after centrifugation of blood and sugar for he assay of Glycosylated plasma proteins.
Serum insulin assay was conducted using 15 healthy adults, 15 cases of NIDDM after 18-20 months of GS supplementation. Eight volunteers provided a second sample 90 minute after their usual breakfast providing 600-650 calories and this was labelled in the Post-Prandial sample.
To assess the effectiveness of GS as an instant blood glucose lowering agent, 12 adult healthy volunteers were administered 200 mg GS under fasting state, after blood sampling in the morning. Blood samples were collected 45 minutes after GS administration and blood glucose was assayed in both samples.

Most of the patients reported a sense of well-being and better alertness and less exhaustion during work, during GS supplementation. The female patients reported that the nagging pain in their limbs disappeared within 4 weeks of GS supplementation.
The blood Glucose, Glycosylated haemoglobin and Glycosylated plasma proteins were significantly lower after GS supplementation.
Five out of the 22 NIDDM patients on GS supplementation were able to discontinue their conventional drugs after GS supplementation and were able to maintain their blood glucose homeostasis with GS alone.
Blood urea, uric acid and haemoglobin levels remained in the normal range during GS supplementation, suggesting the absence of Hepato or Hephrotoxicity for GS.
It can be observed that serum insulin levels are lower than normal in NIDDM patients on conventional drugs in both fasting and in the Post-Prandial state, which provides data on glucose induced insulin release. However, when the group on GS supplementation is compared with those on conventional therapy alone, there is a significant elevation of serum insulin in both the fasting and Post-Prandial state.

Because of many clinical trials, Gymnema Sylvestre is used today all over India for treating diabetes mellitus. In layman's language it is called GUR MAR. Gur means sugar and Mar means kill. so it is a powerful herbal sugar killer for diabetes mellitus patients.

Description of Gymnema Sylvestre: Gymnema Sylvestre is a woody, wine-like plant which climbs on bushes and trees in the Western Ghats in South India, and to the west of those mountains in the territory around the coastal city of Goa.
The medicinally active parts of the plant are the leaves and the roots. It came to be known as a "destroyer of sugar" because, in ancient times, Ayurvedic physicians observed that chewing a few leaves of Gymnema Sylvestre suppressed the taste of sugar. That is, sweet foods no longer tasted sweet, but rather became almost completely tasteless. In later generations, clinical tests showed that regular use over a period of three to four months helped to reduce Glycosuria, or the appearance of carbohydrates in urine.
Recent clinical trials conducted in India have shown that the extract of Gymnema Sylvestre is useful in both insulin-dependent diabetes mellitus (IDDM) and in certain specific types of non-insulin dependent diabetes mellitus (NIDDM).

As a result of these clinical tests and years of successful treatments, Gymnema Sylvestre is used today all over India for treating diabetes mellitus. In reducing the symptom of Glycosuria, the dried leaves are used in daily doses of three to four grams for a period of three months or more.

Studies conducted in India as early as 1930 showed that the leaves of Gymnema Sylvestre cause hypoglycaemia in experimental animals. This state of hypoglycaemia is explained on the assumption that the drug indirectly stimulates the insulin secretion of the pancreas, since it has no direct effect on the carbohydrate metabolism.

HOW GYMNEMA SYLVESTRE WORKS

Recent pharmacological and clinical studies have shown that Gymnema Sylvestre acts on two sites: First, the taste buds in the oral cavity; second, the absorptive surface to the intestines.
The structure of those taste buds, which detect sugar in the mouth, is similar to the structure of the tissue that absorbs sugar in the intestine. The important active ingredient in Gymnema Sylvestre is an organic acid called "Gymnemic acid".

The Gymnemic acid is made up of molecules whose atom arrangement is similar to that of glucose molecules. Those molecules fill the receptor location on the taste buds for a period of one to two hours, thereby preventing the taste buds from being activated by any sugar molecules present in the food.
Similarly, the glucose-like molecules in the Gymnemic acid fill the receptor locations in the absorptive external layers of the intestine, thereby preventing the intestine from absorbing the sugar molecules. It has also been noted that

Gymnema Sylvestre takes away the bitter taste of bitter substances, such as quinine, in much the pungent, salty, astringent or acidic tastes. Therefore, if you are eating an orange within two hours after chewing Gymnema Sylvestre leaves, for instance, you would taste the sourness of it but not the sweetness.

PRACTICAL USES

The benefits of Gymnema Sylvestre are two-fold:

1) By suppressing the taste of sweet food, the desire to eat them is also suppressed. Picture a luscious-looking large piece of chocolate candy, which you know, despite the tempting look, is not sweet. Why bother

to eat it? It is important to remember that this effect of Gymnema Sylvestre will last for only one to two hours. If you are using the herb to break the sugar habit, then it would be wise to take some Gymnema Sylvestre before social events or other times when you might be tempted to dive into the tray of sweets.
2) Gymnema Sylvestre significantly reduces the metabolic effects of sugar by preventing the intestines from absorbing the sugar molecules during the process of digestion. Because there is a change in the absorption of sugar, there is a consequent change in the blood sugar level.

TREATMENT OF DIABETES

Trials under experimental and clinical conditions have shown significant results in the treatment of diabetes. Remarkably, unlike insulin or oral hypoglycaemic suphonylura compounds, the hypoglycaemic effects of Gymnema Sylvestre are seen in only a small percentage of the diabetic patients.
For most people, blood sugar lowers to normal levels; it does not lower to a point below normal blood sugar levels. This can happen in a small number of patients, however, because mechanisms of the diabetic syndrome vary with different patients.
In recent years IDDM has been observed to have entirely different Pathophysiology and clinical course from NIDDM. The studies have suggested that Gymnema Sylvestre may be useful in certain specific types of NIDDM, in addition to its general usefulness in IDDM.
The safety of Gymnema Sylvestre has been demonstrated by the fact that it has been safely and successfully used for more than 2,000 years in traditional Ayurvedic medicine.

OTHER USES OF GYMNEMA SYLVESTRE

Snakebite is treated by dusting the wound with powdered root, or applying a paste of the root powder to the wound. Fever is treated with an oral administration of half an ounce to an ounce (one part in 10) of leaves. Swollen glands, are treated with an external application of triturated leaves mixed with castor oil, naturally controlling glucose levels, improving insulin sensitivity. By Michael T. Murray, N.D.

Diabetes is a chronic disorder involving carbohydrate, fat, and protein metabolism characterized by fasting elevations of blood sugar (glucose) levels and a greatly increased risk of heart disease, stroke, kidney disease, and loss of nerve function.

Diabetes is divided into two major categories type I and type II. Type I, or insulin-dependent Diabetes Mellitus (IDDM), occurs most often in children and adolescents. Type II, Non-insulin Dependent Diabetes Mellitus (NIDDM), usually starts after 40 years of age, which explains its other name: Adult-onset Diabetes. The overall frequency rate of diabetes in the United States is estimated to be 4.5 per cent, 90 per cent of whom have NIDDM and the remainder of who have IDDM. Although people with diabetes account for only 4.5 per cent of the U. S. population, the care required is roughly 15 per cent of the total U.S. health-care expenditures ($120 billion).

Causes of Diabetes, What's Going on Inside : Insulin-dependent diabetes is associated with complete destruction of the beta-cells of the pancreas which manufacture the hormone insulin. Although the exact cause of type I Diabetes is unknown, current theory suggests it is due to injury to the insulin-producing beta-cells, which results in the body's immune system attacking the pancreas.
These patients, in fact, require life-long insulin medication for the control of blood sugar levels.

Type I diabetics must learn how to manage their blood sugar levels on a day-by-day basis, modifying insulin types and dosage schedules are necessary, according to the results of regular blood sugar testing. As mentioned, about 10 per cent of all diabetics are type I.

In non-insulin dependent diabetes, insulin levels are typically elevated, indicating a loss of sensitivity to insulin by the cells of the body. Obesity is a major contributing factor to this loss of insulin sensitivity; approximately 90 per cent of those with type II diabetes are obese. When obese people with this type of

diabetes are able to reach their ideal body weight, they are also able to restore (normalize) their blood-sugar levels, in most case.

Nutritional Supplement Important for Controlling Diabetes: Those with diabetes have an increased need for many nutrients. In addition, several nutrients have been shown to be important in preventing some of the long-term complications of diabetes.
For example, since vitamin C requires insulin for transport into cells, most diabetics suffer from impaired vitamin C metabolism. Diabetics with neuropathy have been shown to be deficient in vitamin B-6 and benefit from supplementation. Individuals with long-standing diabetes, or who are developing signs of peripheral nerve abnormalities, should definitely be supplemented with vitamin C, B-6, and other key nutrients.

Recently diagnosed type I diabetics given niacin, in the form of Niacinamide (also called Nicotinamide), have been shown to have lowered insulin requirements. In fact, some newly diagnosed type I diabetics have actually experienced complete reversal of their diabetes with Niacinamide supplementation.
The daily dose of Niacinamide is based on body weight, 25 mg per kilogram. The studies in children used 100 mg to 200 mg per day. It is certainly worth a try.

Gymnema Sylvestre Improves Glucose Control: Gymnema Sylvestre, a plant native to the tropical forests of India, has long been used in Ayurvedic medicine as a treatment for diabetes. Recent scientific investigation has upheld its effectiveness in both type I and type II diabetes.

Extracts of Gymnema Sylvestre given to patients with type I diabetes on insulin therapy, reduces insulin requirements and fasting blood sugar levels, and improves blood sugar control. In a study of type II diabetics, Gymnema extract given along with oral hypoglycaemic drugs was shown to improve blood sugar control and to either lead to discontinuation of the medicine or a significantly reduced dosage.
It is interesting to note that Gymnema extract given to healthy volunteers does not produce any blood sugar-lowering, or hypoglycaemic, effects. No side effects have been reported from using this Ayurvedic botanical.

Michael T. Murray, N.D., is widely regarded as one of the world's leading authorities on natural medicine. He is a graduate, faculty member, and sexes on the Board of Trustees of Bastyr University in Seattle, Washington. In addition to maintaining a private medical practice, Dr. Murray is an accomplished writer, educator, and lecturer.

CPT
SUPER HERBS

Cellular Preservation Technology Freeze Drying

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

1. Dry powder does 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.

CPT
SUPER HERBS

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

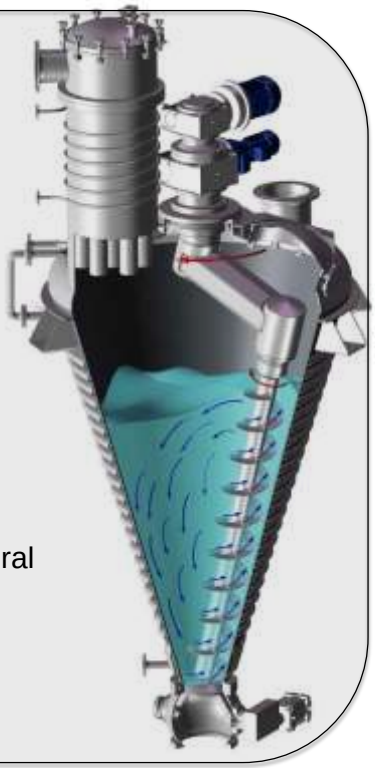
- 1-step process

- 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),

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