

# INTI MACA

Division:           ANGIOSPERMAE  
Class:               DICOTYLEDONEAE  
Sub Class:         ARCHICLAMYDEAE  
Order:              PAPAVERALES  
Family:             BRASSICACEAE  
Gender:             Lepidium  
Specie:             Lepidium peruvianum  
Common names:    MAKA, MACA, MAINO, AYAK, AYAK WILLCA

Maca has been cultivated for more than 2,000 years in the central Andes of Perú. There are great extensions, actually covered with natural grass, that were intensively used in maca cultivation. Traces of agricultural work can be found where no other plants can be cultivated, over 13,000 feet above sea level, in exceptional rough climate, low oxygen, warm at noon, very cold at night, sudden snowing and rains, low organic matter contents in a highly mineralized soil.

Its cultivation is annual, and takes from 8 to 10 months. After cropped, the maca roots are sun dried under direct sun rays in a tiny atmosphere. This process gives a sweet flavor to this maca.

This root was used by the Inca's troops to increase their strength in the battles. The Inca's Empire was the largest in America before Spaniards conquest.

The Spaniards found this root so valuable since thanks to it, their horses recovered their strength and fertility, which was lost due to the high altitudes and extremely stressing environmental conditions of the Andes heights. The Spaniards considered the maca so extraordinary food which gave the natives too much energy to fight, so decided to forgive its cultivation at the end of the XVIII century.

After such conditions, Maca almost got extinguished, in 1980's only 500 acres divided in small areas in a wide country were being cultivated.

In 1979 the Ministry of Health made a study to determine the construction of an hospital in the zone where maca is cultivated. Study found that 80% of the tested people never had used the medical services available there, despite such hard living conditions. This percentage is a lot higher than the national average and, it revealed the good health of that population. Authorities attributed this condition to the consumption of maca.

Many people in Peru and in other countries is increasingly consuming maca as a dietary supplement. Maca is twice or more times better than ginseng in the fields where ginseng is effective and maca has more properties than ginseng.

Market for maca should be wider than the one for ginseng. Actual market of ginseng is larger than US\$2,000'000,000 annually, and the market for natural products is growing at a rate of over 20% annually.

Maca may will be the most important natural health enhancer of this century. We have an investment plan to develop Maca's market and products, that we would like to share with a serious investor.

## PROPERTIES OF INTI MACA

### 1. ENERGY ENHANCER

One of the most important properties, because almost everybody needs an energy boost to fulfill today's challenges.

The energetic power of **INTI MACA** comes from the way its phyto chemicals work in the endocrine glands. Glucosinolates, terpenoides, anthocyanines, saponines, alkaloids, fat acids, essential amino acids, are responsible of the tremendous energy power of **INTI MACA**, so it is a major non caloric energy source.

There are many scientific experiments that demonstrate this:

1.1 A number of mice were put in a pool, half were fed with Maca. Time of surviving was controlled:

Reference group: approx. Average time of survival: 700 secs.

Maca group: approx. Average time of survival: 1300 secs.

1.2 A number of mice were put in a cold pool, half were fed with Maca. Then their oxygen consumption was controlled until normal temperature was recovered:

Oxygen consumption rate

Reference group: 98

Maca group: 86

Interpretation: A lower rate indicates more physical force.

Conclusion: Maca increases work capacity with a very low caloric values:

Minimum standard daily dose 1.5 grams: 4.88 kcal approx.

Maximum standard daily dose 10.5 grams: 34.2 kcal approx.

Sportsmen and people with uncommon energy demand can take more, Maca is non toxic. Several analysis show a toxicity rate of DL>50, so Maca is innocuous.

**INTI MACA** is highly recommended for every person who needs to improve its performance, and significantly reduce physical as well as mental fatigue.

### 2. ANTI STRESS

Most people feel stressed these days. Things happen faster than we can process the changes. Everyone compete in every way in every context, at work, at school, at university, at the club, making sports even when just for fun, at family, with friends.

Competing is everywhere, responsibilities are higher than ever, stressing us every time, weakening our immune system, lowering our performance, increasing our anxiety, getting the people moody and angry. Permanent stress is considered as a cause of many diseases, most of them fatal.

**INTI MACA** has proven to be an excellent natural stress reducer:

2.1 Two randomized groups of rats, one of which was fed with Maca, were shocked with small charge of electricity following an international known stress metering system:

Stress rates

Group of reference: 28 – 37 – 37 – 32

Group of Maca: 19 – 21 – 22 – 19

24 hours later the group of reference still had a rate of 13, the Maca group was 0. it is the most remarkable point since stress is specially harmful when sustained over time.

Around 60% of the doctor visits in the USA are due to stress diseases or disorders related. **INTI MACA** is ideal for executives, students, people who is under acute or chronic tension. It is also effective in depression and anxiety disorders,

### 3. **DIETARY SUPPLEMENT**

3.1 Weight-loss regimens:

**INTI MACA** is a powerful non caloric energy source, that is why it is ideal as a dietary supplement.

Low calorie diets produce general decline in most people's mood and health, bringing out poor performance and deplorable state of mind.

Taking 1 teaspoon with each light meal will give the necessary stamina for all day long.

3.2 Weight-gain regimens:

**INTI MACA** is also a valuable source to gain weight since it contains 17 of the 18 essential amino acids.

Since **INTI MACA** helps a person to perform more exercises without getting fatigued as usual, it is easier to build muscle tissue. In the USA there are doctors who have established a strong relation between muscle building and Maca +creatine consumption, without the risk of anabolic steroids.

### 4. **AID FOR MENSTRUAL DISSORDERS, MENOPAUSAL SYMPTOMS AND OSTEOPOROSIS**

Irregularity, bad mood, abdominal pain, over reacting, decay, blood floods, are common menstrual disorders that are significantly reduced and in many cases eliminated with **INTI MACA** consumption.

Menopausal symptoms as insomnia, fatigue, moodiness, weight gain, hot flashes, loss of memory, anxiety, depression, low libido, and others are significantly diminished and in many cases eliminated with **INTI MACA** consumption.

Post menopausal disorders like unwanted hair growth on the face, arms and legs, vaginal dryness, thinner skin, and osteoporosis are dramatically diminished in most cases with **INTI MACA** consumption.

It also works on such symptoms from women with hysterectomies.

There were three women who were treated with maca:

Stradiol hormone measure

P1: Before maca intake 23 pg/ml; after maca intake 148 pg/ml

P2: Before maca intake 17 pg/ml; after maca intake 58 pg/ml

P3: Before maca intake 1.5 pg/ml; after maca intake 28 pg/ml

Conclusion: Maca consumption safely increase estrogen levels, helping to reduce, and in most cases to eliminate menstrual and menopausal symptoms and disorders, and is useful to prevent and help osteoporosis treatment. Maca is a natural and safe alternative to HRT.

## 5. **SEXUAL INVIGORATOR, APHRODISIAC, AND FERTILITY ENHANCER**

Maca should not be compared with viagra(tm). Maca works in sexual matters but in different aspects.

As an energizer **INTI MACA** helps to create more vigor for sexual activity.

Maca also helps in having more satisfactory sexual activity by increasing vaginal lubrication as well as seminal volume (by 20%). More and larger ejaculations allow greater satisfaction.

In the April 2000 issue of Urology magazine (USA), there is an article in which some scientists tell of the experience of rats with erectile disorder were fed with maca. There was also a reference group. The maca group had 400% more copulation than the reference group.

Experiments with men as well as with animals show not only greater seminal volume by 20%, but also sperm quality, more than 30% more spermatozoon, and more than 40% of improved motility: This means more fertility. In fact there are many studies that demonstrate broods increasing by 25 to 40% in dogs, cows, sheep and other animals.

In female animals, it has been found that maca consumption held a significant increase of Graaf follicles, and other favorable endometrium characteristics which indicates a higher fertility level.

## 6. **GENERAL HEALTH ENHANCER**

It has been noticed that the elderly who consume Maca recover youth characteristics in significant levels, having renewed energy and the desire to live. They need less attention from other people since they are more capable in helping themselves. They get a more satisfactory life.

It has been demonstrated in scientific analysis, that Maca consumption increases the production of the hormone dihydroandrosterone, DHEA, by 50%. DHEA is better known as the youthfulness hormone.

Convalescents recover faster after illness and surgical operations.

People note that after Maca consumption they have a faster recovery from fatigue after special efforts at work, studies, sports, etc.

It is also noticed that with **INTI MACA** consumption, most people develop a better memory, improve their concentration capability and increase their mental brightness, and state of alert.

It is due to the stimulating action of maca phyto chemicals on the hormone system, in this case on estrogen production. Estrogens are responsible for dendrites building at neuron cells. It is known that dendrites permit the communication between neurons, which briefly means the intellectual functions.

Maca promotes homeostasis. It means balance in organ functioning, so Maca can be considered a body and mind optimizer, the most powerful adaptogenic plant.

## **FDA REGULATORY STATUS**

Maca is an herb and thus is a permissible dietary ingredient for a dietary supplement, as listed in the Definition of Certain Foods as Dietary Supplements, in Section 3 of DSHEA (1994). Maca is not a new ingredient (having been imported into the U.S. since 1994) so no DSHEA Section 8 filing on reasonable safety is required. We have seen reports that weight lifters and body builders have turned to maca as natural alternative to anabolic steroids, which are banned by the FDA.

### **Safety Statement:**

Based on historical use and common use as food, maca appears to be safe. Due to the fact that this herb has not been reviewed by the APHA Botanical Safety Handbook, maca would be considered to be class 4 herb: "Herbs for which insufficient data are available for classification.

### **Structure/Function Statements Permitted under Section 6 of DSHEA**

- Increases energy, stamina, and mental clarity
- Supports the thyroid
- Supports normal sexual function
- Promotes hormone balance