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the classic adaptogen

Ginseng has the reputation for being the classic adaptogen. In other words, it helps to normalize body functions and helps the body withstand various stresses of daily life. An adaptogen promotes rapid mobilization of the body's energy and swift recovery following stress.

Adaptogens: are non-toxic; have no marked pharmacological effects; are nonspecific in results; enhance ability to cope with physical, emotional and biochemical stress do not require a prescription; are less costly than most drugs; are not habit forming; and they regulate, meaning the substances are held in abeyance when challenge ceases to exist, but are ready and waiting for the next crisis.

Adaptogens consider biochemical individuality and affect different people in distinct ways as they interact with diet, lifestyle, exercise, exposure to environment toxins and drug intake. Adaptogens are used primarily to increase resistance, health and vitality.

REFERENCE:
Siberian Ginseng
by Betty Kamen Ph.D
New Canaan, Conn.:
Keats Publishing Inc. 1988

Widely regarded as the King of Herbs, ginseng is perhaps the best known of the medicinal herbs. Millions of people in the Orient have consumed ginseng for a variety of purposes for more than 5,000 years. It is still among the most valuable folk medicine plants, and costs more than \$200 per pound for better grades.

Actually, ginseng is a paradox. In the West, it is regarded with suspicion and disdain by the medical community, but consumers continue to buy it, often with little knowledge of its history and traditional use. Although thousands of scientific studies using ginseng have been conducted, American scientists generally remain unconvinced of its effectiveness.

Botanical Identity

Ginseng consists of the roots of several species of the genus *Panax* in the *Aralia* family. Oriental ginseng is *Panax ginseng*. Originally from northeastern China, Korea and Eastern Siberia, today *Panax ginseng* is rarely found in the wild. Wild Chinese ginseng is still occasionally available.

American ginseng, *Panax quinquefolium*, grows throughout the woods of eastern North America, from Canada to the Carolinas. It is considered an endangered species in the wild due to overcollection. Widely cultivated, much of

American ginseng is exported to Hong Kong and used throughout the Orient. American ginseng is used for slightly different purposes, but is held in very high esteem by Orientals.



Japanese ginseng is *Panax japonicus* and Sanchi or Tienchi ginseng is *Panax notoginseng*. They are used similarly in the West, while in the Orient they are considered very different. "Siberian ginseng" or eleuthero ginseng is not in the genus *Panax*, but is another member of the *Aralia* family, *Eleutherococcus senticosus*. This article focuses on the panaxes, reserving eleuthero for a future article.

Chemistry

The activity of ginseng is considered to be primarily the result of chemicals called ginsenosides, a type of glycoside. Glycosides are chemicals with a wide variety of medicinal



activities. They are responsible for the laxative effects of senna, cascara sagrada and rhubarb, the cardiac effects of digitalis, and the potential toxicity of apricot kernels and laetrile. The ginsenosides belong to a class of glycosides that are thought to affect the hormonal system, and are called steroidal glycosides (although they do not act like steroids).

Ginseng also contains polysaccharides, which may be responsible in part for some of ginseng's effects on blood chemistry and immune function. Phenolics, complex alcohols and organic acids may affect free-radical scavenging activity, considered an anti-aging factor.

Medicinal Effects

In the Orient, ginseng has been used for so many purposes that it is thought of as a panacea. In fact, "Panax" is derived from the word panacea. Since ginseng is used generally to promote health, we think of it as a tonic. Actually, in China, ginseng is considered neither a panacea nor a tonic. Rather it is thought to re-store



homeostasis, or to normalize various body functions, such as blood pressure, blood sugar, and energy, and to increase strength and stamina.

The Soviet ginseng researcher I.I. Brekhman, Ph.D., coined the term "adaptogen" to describe the normalizing action of ginseng, along with its anti-stress, endurance-enhancing qualities.

Brekhman began testing ginseng on Soviet soldiers and found they could run faster in a three-kilometer race than a control group given a placebo. Radiotelegraph operators showed increases in speed and accuracy when given ginseng.

Experiments with mice, conducted in the Soviet Union, Korea and China, showed ginseng was associated with an increase in stamina and endurance in a swimming test. These tests also suggested ginseng protects against environmental stress such as cold temperatures. Further animal testing considerably confused researchers, since in different tests, ginseng showed conflicting activity. It showed both central nervous system (CNS) stimulation and CNS depressant activity. It both increased and decreased blood pressure, and showed histamine-like action and antihistamine effects. The contradictions may result from different extraction procedures, variations in the ratios of ginsenosides in different ginsengs used, and so forth.

Japanese researchers began testing pure ginsenosides and found that, indeed, one showed CNS sedative, tranquilizing and hypotensive effects, while another was CNS-stimulating, hypertensive and demonstrated anti-fatigue activity. Furthermore, dosage differences sometimes had an unexpected effect. One ginsenoside was slightly stimulating at low doses, but sedative at higher levels.

The most fascinating are tests showing improved mental and physical performance. Many Westerners use ginseng in the hope of improved performance of one type or another. Tests have shown that ginseng increases learning and memory in rats. This same study

showed that caffeine and methamphetamine, while increasing physical speed, slowed learning and mental performance.

Some clinical tests with humans, like those by Brekhman, show a tantalizing possibility that ginseng may improve human performance of a variety of tasks. Unfortunately, these tests have been less than convincing to Western scientists, and further research is needed.



Ginsenosides appear to increase nerve fiber growth, and prevent nerve damage by radiation. They show a liver-protective effect, increasing the growth of liver cells, and their synthesis of protein. Ginseng lowers total cholesterol, especially low-density lipoproteins (the "bad" cholesterol). It increases the "good" or high-density lipoprotein cholesterol.

According to Steven Fulder, Ph.D., the best effect of ginseng is on the aged, and on those suffering prolonged stress: the stress of shift work, intense athletic training, the stress of bad habits, pollution, overeating and excessive drinking.

Effective dosages in recent experiments involving Korean Air Force pilots enduring extreme stress were five to seven grams per day. However, more typical dosages range from 1/2 to 5 grams, with the Japanese pharmacopoeia recommending 2 to 6 grams (2,000 to 6,000 mg) daily.

Ginseng is a food-safe plant with a small mountain of scientific, historical and anecdotal evidence — admittedly, evidence of highly variable quality. This evidence points to a plant that seems to increase general stamina and endurance, protect against stress, infection, heart disease, cancer, toxicity and even radiation.



Why then does Western science show no interest in ginseng? Ara Der Marderosian, Ph.D., a member of the Herb Research Foundation advisory board, points out that the Food and Drug Administration requires millions of dollars in animal studies before a substance can even be tested on humans. The drug companies won't help because it is easier to let foreign researchers find promising

new drugs, he said.

"Drug companies are run by chemists," he said. They say, 'don't bother with nature; we can make anything you want in the laboratory: They're looking in the easiest area.'

The Herb Research Foundation in Boulder, Colorado, is currently planning a study using ginseng for improving mental and physical performance in an office environment. Well designed and meticulously conducted experiments of this type could do much to prove (or disprove) the highly interesting effects of ginseng. For more information about this research, please call 800-748-2617.

European and Japanese scientists continue to perform high-quality research using ginseng, and the Foundation's planned study could ultimately help convince American scientists to take a closer look at this performance-enhancing and health-promoting plant.

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