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|  | **Introduction**  Legends and superstitions existed for centuries in the Chinese culture, involving the mystical power that ginseng has for curing ailments, prolonging life, and even restoring life after death. Traditional Chinese physicians also used ginkgo leaves to treat asthma, chilblains, and swelling of body parts due to sever cold conditions. By roasting ginkgo seeds, ancient Chinese and Japanese were able to use them to aid digestion and to clear the mind for memory restoration. Meredith and I became interested on the benefits and harms of taking memory inhancers sold in drug stores today. By knowing that ginseng and ginkgo are both memory enhancers, consumers will already have a mental picture painted in their mind of the products working to enhance their memory. We wanted to test both herbs on mice, since the psychological effect wonít take place on mice before they ingest the herbs. On the other hand we also wanted to test and compare ginkgo and ginseng to see which has a better affect on memory.  **Ginkgo**  Family: Ginkogoaceae; there are no other members.  Genus and species: Ginkgo biloba  Also known as: Maidenhair tree  Parts used: Leaves  Ginkgo is the oldest surviving tree on earth. As a healing herb, it can help the oldest surviving people. Ginkgo may prevent and help treat many conditions associated with aging: stroke, heart disease, impotence, deafness, blindness, and memory loss. Ginkgo was termed ìgood for the heart and lungsî in Chinaís tribute to legendary emperor Shen Nung. Indiaís traditional Ayurvedic healers associated ginkgo with long life and reportedly used it as an ingredient in soma, a longevity elixir. Ginkgoes were introduced into Europe in 1730, and today they are popular street and park trees throughout the temperate world. But even though 18th century horticulturists planted them throughout Europe, herbalists of that time ignored them. As a result, ginkgoís fan-shaped leaves have no history in Western herbal healing. Today European herbalists and mainstream physicians feel much differently. Ginkgo products are among Europeís most widely prescribed medications, with sales of $500 million a year (Castleman, 278).  Medical excitement over ginkgo comes principally from the herbís ability to interfere with the action of a substance the body produces called platelet activation factor (PAF). Discovered in 1972, PAF is involved in an enormous number of biological processes: asthma attacks, organ graft rejection, arterial blood flow, and the internal blood clots involved in heart attacks and some strokes (Schwanitz, 83). By inhibiting PAF, ginkgo has been shown to have enormous healing potential, particularly in conditions associated with memory.  Last October, the Journal of the American Medical Association published a study of ginkgo biloba as a possible treatment for Alzheimerís disease. It was a twelve-month trial with more than three hundred patients, all diagnosed with mild to moderate dementia. Only 137 patients completed the study. Improvements in mental function and behavior among the people taking ginkgo were small and of limited duration (UC Berkeley wellness, 1). The herb has been used in France and Germany for years of circulation disorders and improved mental functioning. Ginkgo is currently untested and unregulated but is aimed at the general public as a ìbrain booster.î  By offering a promising future for Alzheimerís patients, ginkgo is used for dementia; it may improve oneís ability to think and interact with others. Cognitive deficiency, which is caused by inadequate blood flow and nerve damage in the brain, can have marked improvements from symptoms such as dizziness, ringing in the ears, headache, memory loss, concentration, and confusion. Ginkgo helps ease the pain of walking for people who have poor circulation in their legs. Studies have shown that there are no known health risks associated with taking ginkgo. The extract from the ginkgo tree contains ingredients that have anti-inflammatory properties and enhance antioxidant functions. The extract is used for a variety of ailments ranging from asthma to hypertension in Asia and for circulatory and neurological disorders in Germany and France (Columbia Encyclopedia, 587)  Ginkgo is a stately, deciduous tree that reaches 100 feet with a 20-foot girth. Its flat, fan-shaped leaves have two lobes. Ginkgoes are dioecious, meaning males and female flowers appear on different trees. The females produce apricot-size, orange-yellow fruits, which contain an edible seed (Beryl, 65). Ginkgoes are attractive street or yard trees that can be grown throughout much of the United States. Male trees are better to plant because the female trees produce messy and foul-smelling fruits. Ginkgoes are resistant to insects and disease; they grow about 2 feet each year. In autumn, the leaves turn a beautiful gold before falling.  Safety Factor: Platelet activation factor plays a key role in blood clotting. Ginkgoís PAF-inhibiting action may cause problems for people with clotting factors. Some consumers who take extremely large amounts of the herb have reported irritability, restlessness, diarrhea, nausea, and vomiting. Recommended amounts are considered nontoxic. For otherwise healthy non-pregnant, non-nursing adults who do not have clotting disorders, ginkgo is considered safe in amounts typically recommended. Ginkgo should not be give to children under age two, and except for prevention of asthma, there is no reason to give it to older children (interhealth, 3).  **Ginseng**  Family: Araliaceae; other members include ivy  Genus and species: Panax ginseng (Chinese/Korean/Japanese); Panax quinquefolius (American);Eleutherococcus senticousus (Siberian)  Also known as: Man root, life root, root of immortality, Tartar root, heal-all, ëseng, ësang  Parts used: Roots  Chemicals contained in herb: Arabinose, Camphor, Gineosides, Mucilage, Panaxosides, Resin, Saponin, Starch  Ginseng is as fascinating as its is controversial. The root of an unassuming ivy-like ground clover, it has been the subject of more than 1,200 books and scientific papers, yet its effects are still hotly debated. Advocates say itís completely safe and call it the ultimate tonic, which is a mild aphrodisiac that enhances memory, learning, productivity, physical stamina, and immune function, while reducing blood cholesterol and sugar (glucose) and minimizing the ravages of stress, aging, radiation, alcohol, and narcotics. Critics say it does little, if anything, except cause a potentially hazardous ìabuse syndrome.î  Ginseng is not one herb but three: Chinese, Korean, Japanese, or American, or Siberian. The Siberian plant is not true ginseng, but it contains similar active chemicals, and studies show it has similar effects. As a result, all three are grouped together as ìginseng,î and used interchangeably in the West.  Ginseng is a fleshy, multi-branched root. If people stretched their imagination, some roots resemble the human form, with limb-like branches suggesting arms and legs. The ancient Chinese called the plant ìman root,î jen shen, which became ìginseng.î (Castleman, 283)  As the popularity of ginseng spread throughout ancient Asia, demand soared and rapacious collection decimated the supply. Chinese ginseng became increasingly rare and more valuable than gold. Unscrupulous merchants sold other roots as ginseng, and adulteration is still a problem today. Unlike other Asian herbs that became favorites in the West, ginseng remained a mystery in Europe until the 18th century, when missionaries informed early Europeans botanists of its reputation as a longevity herb (Caggiano, 142). Europeans scoffed at Asian claims, but people who are familiar with Asia , particularly the Jesuits who had many missions in China , appreciated the herbís great value there.  In 1704, a French explorer returned to Paris with a sample of what turned out to be American ginseng from southern Canada. Jesuits in France alerted their brethren in Canada to its enormous value in China, and some years later, Jesuits in Montreal shipped a boatload to Canton, where other Jesuits sold it to the Chinese for what was then a kingís ransom, $5 a pound (Caggiano, 144). Once the word got out, ginseng was discovered growing as far south as Georgia, and it enjoyed a brief burst of popularity among American colonists who were interested in sexual stimulation. Most were disappointed.  The American Indians learned about ginseng and used it to combat fatigue, stimulate appetite, and aid digestion. Some tribes even mixed it into love potions. Americaís 19th century Eclectics called ginseng a stimulant for ìmental exhaustion from overworkî and prescribed it for loss of appetite, indigestion, asthma, laryngitis, bronchitis, and tuberculosis. Wild ginseng sold to export agents for about $200 per pound. Although some critics believe ginseng causes serious side effects, scientific literature shows ginseng is reasonably safe and beneficial for some ailments (Castleman, 254).  Ginseng is believed by many to increase a personís resistance to stress, fight disease by increasing vitality and strengthen normal body functions. Studies are beginning to show that ginseng may have some value as a tonic. Scientists know plenty about the history of Ginseng, as well as its botany, chemistry and its effects on small animals. However there is not much evidence regarding its effects in people. Recently, studies showed that ginseng, taken in combination with vitamins and minerals, resulted in an improved quality of life, improvements in memory and other factors associated with psychological well being, and fatigue reduction (Ginseng, 2).  Ginseng owes its healing value to several chemicals called ginsenosides; however they are not clearly understood. For example, some ginsenosides stimulate the central nervous system; others depress it. Some raise blood pressure; others reduce it.  Capabilities of Ginseng:  Counteracts fatigue without caffeine and improves physical stamina. Russian, Chinese, and Korean Olympic athletes use ginseng in their training and before events.  Counteracts the damage caused by physical and emotional stress.  Prevents the depletion of stress-fighting hormones in the adrenal gland.  Stimulates brain, heart, blood vessels  Decreases blood sugar  Increases secretion of histamine  Decreases eosinophils in blood  Increases corticosteroid content of blood  Enhances memory  Unproven Speculated Benefits:  Treats biological ìstressî  Is used as an aphrodisiac  Increases mental and physical efficiency  Treats impotence  Treats anemia  Treats hardening of the arteries  Reduces depression  Treats diabetes, ulcers, and edema  Because of ginsengís rarity and enormous value, adulteration has been a problem for centuries. It still is today. One study evaluated 54 so-called ginseng products available in U.S. health food stores. The researchers judged 60 percent ìworthlessî because they contained too little of the herb to have any biological effect. Twenty-five percent contained no ginseng at all. The health food industry denounced this study, and the health food trade journal Whole Foods commissioned an independent test. It showed essentially the same results. Unfortunately the only way for consumers to be absolutely certain of ginseng purity and age is to grow it themselves, which is much easier said than done. Ginseng tastes sweetish and slightly aromatic. To take advantage of ginsengs many healing benefits, use root powder, teas, capsules, or tablets (Johns Hopkins, 2).  Safety Factor: Ginseng side effects are no cause for alarm, but no drug, herbal or otherwise, should be considered completely safe. Problems with ginseng are rare, but the medical journals contain a few dozen reports. Ginseng may cause insomnia, breast soreness, allergy symptoms, asthma attacks, increased blood pressure, and disturbance in heart rhythm (thriveonline, 4). In addition, ginsengís anti-clotting action should place it off-limits for those with clotting problems. In Asian, ginseng is only considered for elders, children should not eat the herb, and pregnant women should err on the side of caution to not use it. |

*This Web Site is Best viewed with 256 or more colors.*

*For More Information about Creekwatch, please contact Eric Thiel at* [*ethiel@pleasanton.k12.ca.us*](mailto:ethiel@pleasanton.k12.ca.us)