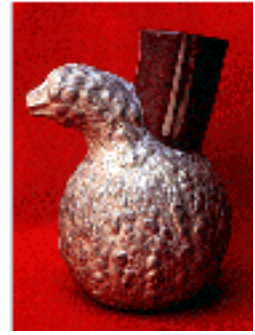




Ethnobotanical Leaflets



Garlic: A Taste for Health

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Culinary garlic is one of the most medically studied herbs today. It has been cultivated since the Neolithic period around 10,000 BC. This bulb has flavored the food of hunters and nomads after the discovery of its intensely robust flavor. The Sumerians (2600 BC-2100 BC) were actively practicing the healing powers of garlic, and some believe the Sumerians to have introduced garlic to China, from where it later spread to Japan and Korea. However, some taxonomists believe garlic to be endemic to China. Records have indicated that the medicinal respect for garlic was not fully appreciated in regions of India, China, as well as in southern Europe. The Sumerians had been using garlic for some time before others caught on to its medicinal success.

Many cultures have remedied various ailments with this potent herb. The Egyptians, documented on a papyrus dating back to 1500 BC, prescribed garlic for 22 diseases (1). And according to the 5th century Greek historian Herodotus, the Egyptians had carved an inscription into the great pyramid of King Khufu (Cheops) detailing the amount of garlic, onions, and radishes eaten by the slaves during the twenty-year building period. Egyptian slaves caused the first ever-recorded strike when a ration of garlic did not turn up on time (1). The slaves ate garlic to increase their stamina and to maintain their over-all health. Cloves of garlic have been found in the tomb of Tutankamen who ruled Egypt until 1338 BC. And the Egyptians were not the only ones to worship garlic. According to Theophrastus, ancient Greeks offered garlic on piles of stones at crossroads as a supper for Hecate, god of the underworld.

The Bible has even mentioned the Israelites, delivered out of bondage by Moses, complaining of their food and wishing for the same things they had been eating while they were slaves: "Oh, that we had some of the delicious fish we enjoyed so much in Egypt, and the wonderful cucumbers and melons, leeks, onions, and garlic!" (Numbers 11:5, The Living Bible; 2). This pungent herb is also mentioned in the literature of other great kingdoms: Babylon, Medo-Persia, Greece, and Rome (2). Garlic can be found medically prescribed in ancient texts as far back as 1550 BC (1). Garlic was always an ingredient in potions thought to cure external and internal disease (1). The ancient Greeks and Romans used the herb from anything like repelling scorpions to curing bladder infections. In the book *Historia Naturalis*, Pliny the Elder, the great Roman naturalist, claimed that garlic would treat intestinal disorders, dog and snake bites, asthma, tuberculosis, convulsions, tumors and scorpion stings (3). Pliny also spoke of how

the Egyptians used garlic and onions to represent deities during the taking of oaths (3). Dioscorides, the chief medical officer in the Roman army during the 1st century AD, treated infected soldier who had intestinal worms with garlic (2). Virgil's *Eclogues* told us that the ancient Greeks and Romans quite commonly consumed garlic. Horace wrote of his great offense to the smell of garlic and how the smell of it on a person was a sign of vulgarity. He called it "more poisonous than hemlock, and relates how he was made ill by eating the herb at the table of the Maecenas. That same vogue was upheld during the much later Shakespearean times. Anyone who ate garlic was not allowed into the Greek temples of Cybele. Homer told of a better fortune for Ulysses after the virtues of "Yellow Garlic" had been employed. Ulysses owed his escape to this pungent herb from which Circe the witch was to turn him into a pig like the rest of his companions. The great leader Charlemagne (768 AD-814 AD) had garlic's culinary and medicinal attributes added to the *Berviarum rerum fiscalium*, which was the official document of the Carolingian crown property. A Persian herbal (1000 AD) denotes, "Garlic helps to maintain health because it can prevent stoppage of the blood flow" (1). It would only be until modern times that we have begun to understand the chemistry of garlic, among other benefits of garlic.

There is folklore throughout Europe that a man chewing a clove of garlic during a race will prevent his competitors from getting ahead of him (3). But this is continuing superstition from the ancient Greek athletes, who believed that chewing garlic would help outperform their opponents.

The English have an old popular name for garlic called "Poor Man's Treacle", meaning it will remedy all diseases and hurts (except those which itself breeds). Chaucer and other writers included this herb in their stories and tales (3 and 4). The name is of Anglo-Saxon origin, derived from *gar* (a spear) and *lac* (a plant), in reference to the shape of its leaves. A description from one garlic herbal reads as follows: "The leaves are long, narrow and flat like grass. The bulb (only part eaten) is of a compound nature, consisting of numerous bulblets, known technically as 'cloves', grouped together between the membraneous scales and enclosed within a whitish skin, which hold them in a sac. The flowers are placed at the end of a stalk rising direct from the bulb and are whitish, grouped in a globular head, or umbel, with an enclosing kind of leaf or spathe, and among them are small bulbils."

According to the herbal *Back to Eden*, garlic has been used throughout the centuries as a treatment for all sorts of diseases. Some of the most common of these are: lung problems, including pneumonia, asthma, and bronchitis; various skin disorders such as leprosy, acne, athlete's foot, dandruff, and ringworm; intestinal illness such as gastric ulcer, gastritis, constipation, diarrhea, worms, hemorrhoids, pinworms, cholera, amoebic dysentery; arthritis, rheumatism, high blood pressure, tuberculosis, some forms of cancer, diabetes, anemia, heavy metal poisoning, epilepsy, whooping cough, colds, typhus, conjunctivitis, cold sores, hypoglycemia, spinal meningitis, diphtheria, and snake bites. The 17th century physician and herbalist, Culpepper, also claimed some of these medical virtues in his herbal when he practiced medicine in England (4).

Most people find garlic's odor very disagreeable. The majority of people use garlic only in small amounts, either mixed with other foods or as a seasoning. Garlic's magical effects are due to its powerful constituents. These are now being isolated and effectively administered to those wishing to improve

their health. Garlic contains vitamins A, C, B1 as well as the minerals copper, iron, zinc, tin calcium, potassium, aluminum, sulfur, selenium, and germanium, but the limited amount that is eaten prevents these nutrients from altering our health (2 and 5). It has also been reported that the assimilation of B1 (thiamin) is enhanced when garlic is present (2).

Garlic belongs to the lily family and is closely related to onions, leeks, scallions, and chives. All of these herbs are known for their pungent, irritating, and unpleasant odor. Garlic may be eaten raw. However, most fear of the permeation of the unpleasant odor on their breath and in perspiration, and is usually eaten in small quantities or mixed with other foods to diffuse the odor.

Uncooked garlic is not completely harmless. When eaten in large quantities, it may cause anemia as well as various gastric problems. Some may suffer burns in the mouth, throat, esophagus, or stomach. Herbalists consider garlic to be a first-rate digestive tonic. It is also used to treat toothaches, earaches, coughs, and colds--regular intake can prevent colds and reduce excess phlegm. For those not highly sensitive to garlic, parsley is recommended by herbalists to attempt to neutralize the offensive garlic odor. However, persons highly sensitive or allergic to the herb will develop a contact dermatitis, with redness and itching of the skin.

There is said to be 67 mg of sulfur in every 100 grams of garlic (2). Garlic is well known to be one of the best plant sources of sulfur. These sulfur-containing compounds are the active compounds responsible for the medical results.

In 1858, Louis Pasteur documented that garlic kills bacteria. During World War II, when penicillin and sulfa drugs were scarce, garlic was used as an antiseptic to disinfect open wounds and prevent gangrene (5 and 6). Garlic oil contains alliin, which once the cloves are cut or crushed, is converted to allicin. Once exposed to air, allicin is converted to diallyl disulfide, which is the compound most responsible for the antibacterial (gram-negative and positive) effect of garlic, killing 23 types of bacteria, including salmonella and staphylococcus. It can also kill 60 types of fungi and yeast, including ones which cause athlete's foot and vaginitis (6). However, upon heating, garlic forms a different compound that has been shown to be an effective measure to lower cholesterol levels and blood pressure (1, 2, 5 and 6).

Garlic is one of the most cost-effective "cure-alls" known today. It treats everything from high cholesterol to infectious bacteria. This has earned it the nickname of "Russian penicillin". I'm sure everyone would probably choose the wonderful health benefits associated with the eating of garlic, if it were not for the unpleasant odor of this bulbous plant.

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