

Garlic and Onion

Powerful Natural Herbs



Garlic and Onion Oils

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Notice

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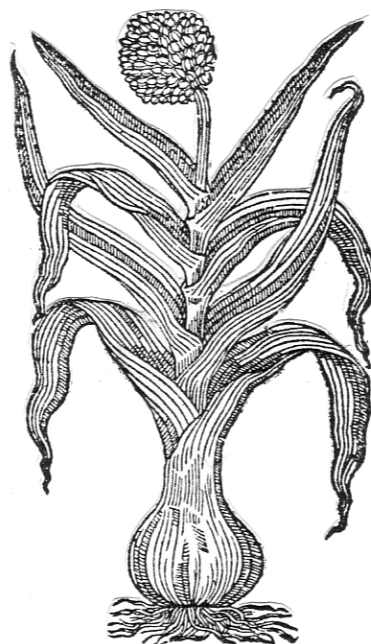
Garlic and Onion

These plants are part of the lily family. The botanical name for garlic is *allium sativum*. Allium is probably derived from the Celtic word for "pungent." The botanical name for onion is *allium cepa*.

These plants are unique. They have a strong odor, sharp taste, and powerful physiological effects. These properties are all associated with volatile sulfur compounds one rarely finds in nature. These compounds are highly reactive and readily change from one form to another.

A garlic bulb actually has quite a mild smell until crushed. When crushed an enzyme called allinase converts a substance in the garlic into pungent allicin. In nature, a plant would have enemies like fungus and bacteria. Allicin is lethal to both quite frequently—a potent and pungent defense.

Onion contains a substance called lacrimatory factor which causes a person to cry when the onion is crushed. Release of this substance is similar to the release of the pungent odor of garlic. The tear forming product of onion protects it from being consumed by many animals. Tear formation can be minimized when cooking with onions by chilling the onion which decreases the volatility of lacrimatory factor. This substance is also water soluble. Thus cutting under running water will wash the substance away.



History of Garlic

Garlic and onions have been relished as food by man for centuries. Egyptian pharaohs were entombed with clay and wood representations of garlic and onion. The ancient Israelites complained that the manna God provided them did not satisfy the craving for garlic and onion which they had acquired while in slavery in Egypt. Even early poets praised the lowly onion. One essayist wrote in his recipe for a salad a practical bit of advice,

*"Let onion atoms lurk within the bowl
And scarce suspected, animate the whole."*

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Onions and garlic have not always been popular, however. Egyptian priests would not touch them. The Greeks considered them vulgar and prohibited those who ate them from worship at the temple of Cybele.

Onions and garlic have always been treasured historically for their medicinal value. The oldest medical document in the world is probably the 3500 year old Codex Ebers of Egypt. It contains 22 formulas for use of garlic in treating various ailments. The peoples of Greece, Rome, India, and China also made medicinal use of garlic. Medieval legend suggested that garlic would not only cure disease, but also ward off vampires!¹

One of the most interesting pieces of medicinal folklore relating to garlic can be traced to the city of Marseilles, France in 1721. The city was smitten with a terrible plague in that year. Dead bodies littered the streets and no one wanted to bury the bodies for fear of coming down with the plague.

Four condemned criminals were recruited to bury the corpses of the dead. The gravediggers surprised the populace and did not succumb to the plague. Observers learned their secret. They developed a drink of macerated garlic in wine which they felt would make them immune to the plague. The beverage became popular and is still commonly available in France today as vinaigre des quatre voleurs.

Reference:

1. Wolkomir, Richard, "Can Garlic Ward Off More Than Vampires?" *McCall's*, July 1982, p. 48.
2. Block, Eric, "The Chemistry of Garlic and Onions," *Scientific American*, March 1985, p. 114.

Physiologic Effects

Onion and Allergy

The Indians of the new world used onion to relieve the pain of bee and wasp stings. Modern day researchers have learned that the oils of the

onion can decrease allergic responses. Dr. Walter Dorsch of the University of Munich injected allergy provoking rabbit antibodies into both arms of 12 volunteers. He then rubbed onion juice onto one of the arms. In nine of the twelve subjects there was significantly less inflammation in the arms treated with the onion juice.

Dorsch also cut asthmatic symptoms by 50% in guinea pigs by feeding them onion juice. Researchers have shown that onions inhibit the formation of inflammatory prostaglandins in the blood explaining these effects. The active ingredients may be the mustard oils or isothiocyanates found in onion.

Reference:

- Boling, Rick, "Onions Put the Bite on Allergic Reactions," *American Health*, Sept. 1984, p. 34.

Cancer Formation

Garlic and onion oils have been shown to reduce the incidence of tumors in mice ex-

Benefits of Garlic	Possible Components
Blood Thinner Lower Blood Pressure Antiparasite Antibacterial Antifungus Antivirus Lower Blood Fat Heavy Metal Detox Antitumor Antioxidant Antiaging Immune Booster	Ajoene Selenium, Germanium Allicin Allicin Allicin, Ajoene Allicin, Ajoene Diallyl disulfide Selenium, Germanium Selenium, Germanium Selenium, Germanium Selenium, Diallyl disulfide Germanium, Selenium, Zinc Allicin, Calcium, Magnesium
Simplified from Abdullah, Tariq, et al., "Garlic Revisited: Therapeutic for the Major Diseases of Our Times?" <i>Journal of the National Medical Association</i> , Vol. 80, No. 4., 1988, p. 440.	

posed to cancer causing chemicals. As the quantity of onion oil was increased the tumor formation declined. Onion oil was notably more effective than garlic oil in this experiment.

Since onion oil contains 55 components, isolation of the active ingredient in tumor inhibition has not yet been accomplished. Work is underway in this area.

It is also interesting to note that residents of China with a high intake of garlic every day were found to have a lower incidence of stomach cancer than those with a low garlic intake.¹

Pharmacologist Arthur Cohen of the University of Southern California suggests that the selenium content of garlic helps ward off breast, lung, colo-rectal and gastro-intestinal cancer. He says, "The evidence is fairly solid that states with the highest

levels of selenium in their soil have the lowest cancer death rates."²

References:

1. Belman, Sidney, "Onion and Garlic Oils Inhibit Tumor Promotion," *Carcinogenesis*, Vol. 4, No. 8, pp. 1063-1065, 1983.
2. Wolkomir, p. 48.

Garlic and Candida Albicans

Candida albicans is a disease causing yeast which creates many problems for human beings. Women suffer from vaginitis and children develop thrush as a result of infections with this organism. The fungus is hardy and ideally adapted to survive in the human body.

Candida produces a root-like germtube which can damage the epithelial tissue it attaches to (vaginal tissues or the intestinal tract for example). *Lactobacillus acidophilus* suppresses the formation of the germtube as long as sufficient numbers of the or-

ganisms are in proximity to the *Candida* yeast. *Acidophilus* is not lethal to *Candida*, but garlic can be.

Resistance of chickens to infection from *Candida albicans* was improved by addition of garlic to the diet. At concentrations of 2% and 4% the chicks could not be inoculated with the fungus. After successful inoculation with the yeast, the addition of 5% garlic to the diet successfully eradicated yeast infection.

Reference:

- Prasad, G., and Sharma, V.D., "Efficacy of Garlic (*Allium sativum*) Treatment against Experimental Candidiasis in Chicks," *British Veterinary Journal*, (1980), vol.136, p.448.

Bacteria

Garlic has potent antibacterial activity. The active principle is allicin. Garlic kills a broad spectrum of bacteria including "gram negative" bacteria which are practically unaffected by penicillin.

Reference:

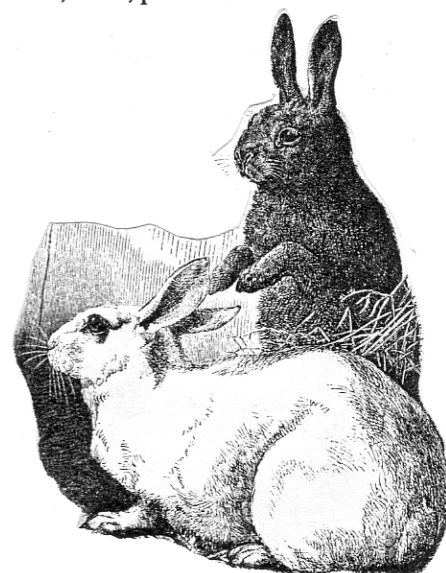
- Carallito, Chester, and Bailey, John, "Allicin, the Antibacterial Principle of *Allium sativum*," *Journal of the American Chemical Society*, Vol. 66, 1944, p. 1950.

Blood Sugar and Garlic and Onion Oils

Ten rabbits were given one gram of glucose per kilogram of body weight and changes in blood sugar were noted. Added to the sugar was either distilled water, 25 grams of onion or garlic juice. Garlic was most effective in keeping blood sugar stable after ingesting sugar.

Time (Hr)	Water	Onion	Garlic
0	102	106	110
1/2	161	156	164
1	180	151	146
1 1/2	171	138	131
2	115	115	102

Jain, R.C., et al., "Hypoglycaemic Action of Onion and Garlic," *Lancet*, December 29, 1973, p. 1491.



Blood Sugar

Both garlic and onion oils have been shown to help keep blood sugar levels down when sugar is consumed. Even fried onions have been noted to lower blood sugar levels in clinical diabetes.

Reference:

Jain, R.C., et al., "Hypoglycaemic Action of Onion and Garlic," *Lancet*, December 29, 1973, p. 1491.

Garlic and Heart Disease

Garlic helps keep blood fat levels down after a fatty meal. It also helps prevent harmful tendencies for the blood to clot.¹ Many doctors have recommended that where the blood clots too readily patients should take aspirin. The substance in garlic which helps prevent blood clotting is called ajoene. Block writes, "...it is at least as potent as aspirin in preventing the aggregation of blood platelets and thus in keeping the blood from clotting."²

Garlic improves the profile of fats in the blood of both normal persons and heart disease patients. Blood chole-

Effects of Six Month Feeding of Garlic on Blood Fats		
	Initial	6 Months
Blood Cholesterol	233	200
Blood Triglyceride	110	70
LDL: Bad cholesterol	70	58
HDL: Good cholesterol	29	41

Animals were fed .25 mg. garlic oil for each 2.2 pounds of body weight in two divided doses. (Bordia, p. 2101)

sterol and triglycerides are lowered significantly. The beneficial high-density lipoprotein which protects against heart disease is elevated significantly with garlic in the diet. The actual changes induced by the addition of garlic to the diet are summarized in the chart below.

One of the unusual phenomena associated with cholesterol reduction by garlic is a common short term rise in cholesterol in the first month. By the third month levels are sharply down. Bordia com-

ments on the significance of this transient rise in blood cholesterol when garlic is added to the diets of animals suffering from atherosclerosis,

"Since this rise in cholesterol occurred during the regression phase in the garlic-fed animals, it can be conjectured that garlic mobilizes, directly or indirectly, the lipid from the deposits."³

References:

1. Bordia, Arun, et al., "Essential Oil of Garlic in Prevention of Atherosclerosis", *Lancet*, Dec. 29, 1973, p. 2100.
2. Block, p. 118.
3. Bordia, p. 2103.