

COMPLEMENTARY USE OF GARLIC IN BIRD MEDICINE

GARLIC : *Allium sativum* has been used for thousands of years as a food and as a herbal remedy

NUTRITIONAL COMPONENT	FUNCTION
Vitamin B1 (thiamine)	Keeps nerves healthy
Alli thiamine	Helps body to absorb B1
Vitamin B2 (riboflavin)	
Vitamin B3 (nicotinic acid, or niacin)	
Vitamin A	
Vitamin C (ascorbic acid)	
<p>Protein: 17 amino acids including the 8 manufactured by the body Most valuable is sulphur-containing cysteine and its derivatives: S-allyl cysteine S-allyl mercaptocysteine S-methyl cysteine gamma-glutamyl S-allyl cysteine</p>	<p>S-allyl-cysteine (SAC): odourless, stable, water-soluble and safe; Reduces cholesterol in the blood; Prevents clotting of blood, Protects the liver from toxic substances, Prevents chemically-induced cancer in lab animals</p>
Macrominerals:	
Calcium	
Magnesium	
Potassium	
Sodium	
Phosphorous	
Trace minerals:	
Iron	
Copper	
Zinc	
Selenium	
Chloride	
Chromium	
Molybdenum	
Germanium	
Sulphur compounds	
<p>Enzymes: 9 of them These cause the reactions to create compounds that smell when garlic is crushed</p> <p>These include Peroxidase and Aliinase</p>	<p>Aliinase: acts on several specific sulphur compounds, especially cysteine sulfoxide derivatives, eg converts Aliin (S-allyl-L-cysteine sulfoxide) to ALLICIN</p>

NUTRITIONAL COMPONENT	FUNCTION
<p>When garlic is crushed, enzyme reactions create oil-soluble sulphur-containing compounds</p> <p>Aliin → Allicin</p> <p>which then breaks down rapidly into the major components of garlic oil: → diallyl sulphide, diallyl disulphide, diallyl trisulphide,</p> <p>and to a lesser extent: → methyl allyl sulphide, dimethyl disulphide, methyl allyl disulphide, methyl allyl trisulphide</p> <p>Allicin is completely gone by the end of the day.</p>	<p>ALLICIN is extremely volatile, odorous and unstable.</p> <p>It acts as garlic's own antibiotic - but kills good bacteria too.</p> <p>It kills cells:</p> <p>Oxidises red blood cells: haemolytic anaemia</p> <p>Converts haemoglobin to unusable methaemaglobin,</p> <p>Damages liver cells</p> <p>Causes inflammation of the stomach and diarrhoea</p> <p>Decreases protein and calcium levels in the blood</p> <p>Can cause bronchial asthma</p> <p>Contact dermatitis</p> <p>Inhibits sperm formation and decreases fertility</p> <p>It cannot be utilised by the body and is not the biologically active component of garlic.</p>

AGED GARLIC EXTRACT

Garlic has traditionally also been aged in wine, vinegar or other medias to reduce toxicity and enhance benefits. In the 1954 Doctor Eugene Schnell, a former Professor of chemistry at Berlin University teamed up with a banker called Manji Wakunaga and started their own pharmaceutical research company, with the philosophy of improving the post-war health of the Japanese population with natural and harmless products and to have them marketed honestly. Kyolic (brand name) garlic extract is the most scientifically researched garlic supplement and has had hundreds of peer-reviewed scientific journals and research studies produced, the information for which is available at: http://www.kyolic.com/Blue2006_MayVersion.pdf

In the cold-aging process used to manufacture the Kyolic extract, raw garlic is carefully sliced and placed in an extracting solution in large stainless steel tanks for up to 20 months. The allicin decomposes and certain compounds are bio-converted. These combined effects lead to several oil-soluble and water-soluble organosulphur compounds that are safe and stable, such as S-allyl-cysteine (SAC).

In Kyolic garlic extract, there are standardised levels of SAC which has led to its wide acceptance by the scientific community. Kyolic aged garlic extract and SAC are both patented worldwide.

IMMUNE SYSTEM COMPONENTS	FUNCTION	GARLIC'S EFFECTS
Surveillance system that seeks out and destroys defective, or cancerous cells and invaders such as bacteria, viruses, fungi, protozoa and parasites. Consists of:	B lymphocytes: recognise foreigners and produce antibodies which bind and inactivate them. They memorise the invaders and are ready next time to respond even quicker. (how vaccines work)	Aged garlic extract (AGE) enhances lymphocyte production in response to lymphokines and mitogens.
B lymphocytes (mature in Bone marrow)	T lymphocytes: direct attack; also secrete lymphokines that enhance or suppress immune system.	
T lymphocytes (mature in Thymus)	Phagocytes: Direct attack eg bacteria, fungi, foreign substances	AGE stimulates macrophages to attack foreign substances including pathogens
Phagocytes: eg Macrophages, Neutrophils	Killer cells: Direct attack	AGE stimulates the formation of more killer cells
Killer cells: programmed T cells	Natural killer cells: Direct attack on viral-infected or cancerous cells	AGE stimulates NK cells to destroy virus-infected cells and tumour cells and inhibits tumour growth
Natural killer cells: another type of lymphocyte		

BACTERIAL INFECTIONS: AGE has been effective against gram negative, gram positive and acid-fast bacteria, also against Staphylococcus, Mycobacteria, Salmonella and Proteus. It is recommended that garlic's potency lies much more in enhancing the immune system rather than as an antibiotic, and works best as an immune system enhancer in conjunction with antibiotics.

VIRUSES: AGE has been ineffective against Coxsackie viruses such as polio but is effective against influenza B virus and herpes simplex type I. As we don't commonly use conventional medical cures for viruses, AGE is worth considering.

PROTOZOA: AGE has been effective against toxoplasmosis, cryptosporidia, isospora and pneumocystis, especially useful in people with AIDS and related illnesses.

PARASITES: Garlic has been used successfully against tapeworm, hookworm, capillaria in humans and animals and against parasites that contaminate vegetables.

FUNGI: AGE has been used effectively against Candida, Aspergillus, coccidioides and cryptococci. At a Medical University in Shanghai it has been injected intravenously for cryptococcal meningitis and antifungal activity in the blood was doubled, even detected in the CSF (cerebrospinal fluid). Enhances immune activity in conjunction with antifungals.

LIVER FUNCTION: AGE boosts liver function by stimulating the production of enzymes that scavenge for chemicals, eg GST (glutathione S transferase), as well as protecting the liver from damage due to its sulphur containing compounds and its nutritional value. The most important elements are S-allyl cysteine, S-allyl mercaptocysteine, and Selenium. The first two (SAC and SAMC) are components of the liver's main antioxidant enzymes. Garlic also helps prevent the build up of fatty tissue in the liver.

HEAVY METAL POISONING: Sulfhydryl compounds in garlic bind to heavy metals and facilitate their excretion, as well as preventing lysis of red blood cells when in contact in vitro: mercury, lead, cadmium, arsenic, aluminium and copper at a Californian Medical University.

PROTECTION FROM FREE RADICAL DAMAGE: free radicals are molecules which have extra, unpaired electrons which are highly reactive. Although they are a part of normal biochemistry if they build up they can cause uncontrolled damage to tissues and lead to disease. Xrays, chemotherapy, radioactive poisoning, pollution, pesticides, CHCs, petrochemicals, heavy metals etc can be found in the environment so are often present in drinking water, household solvents, cosmetics, drugs, cigarette smoke, and so on. Sulfur containing compounds in AGE protected cell wall lipids from damage.

HEART DISEASE, BLOOD PRESSURE AND CHOLESTEROL: AGE lowers blood pressure within hours and cholesterol within months. Please see website for more information and much more detail.

www.kyolic.com

Edited by Jo Mansson
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