

# Garlic and Black Pepper: Effective Remedial Solution on Heart Attack and Blood Pressure

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**Abstract**—Traditionally, black pepper (*Piper nigrum (L.)*, Family: *Piperaceae*) has been used to treat a number of ailments, such as worms, piles, intermittent fever, dysentery, stomach aches, colds, coughs, and throat disorders. Because Russian doctors have traditionally utilised garlic, along with other substances, to treat respiratory tract illnesses, garlic is also known as Russian penicillin. *Garlic* was also utilised in Russia to prepare for a variety of military tasks, including piloting. During World War I, it was frequently used to the treatment of German soldiers. [12] The Russian Red Army continued to utilise garlic even after penicillin was already in use during World War II. *Garlic* was thus nicknamed Russian *penicillin*, or natural antibiotic. [5] LDL cholesterol is prevented by garlic. It lowers blood levels of cholesterol and triglycerides. [12] & [6]

The primary chemical components of black pepper, *Piperine*. It is an alkaloid with a variety of pharmacological properties, including antioxidant, antitumor, antipyretic, anticonvulsant, antithyroid, antifungal, antibacterial, insecticidal, hepatoprotective, anti-asthmatic, larvicidal, antihypertensive, anti-inflammatory, antidiabetic, antidiarrheal, bioavailability enhancer, immunomodulatory, antiepileptic, lipid metabolism accelerator, anticancer, CNS stimulant, diuretic, aphrodisiac, blood purifier, and antiplatelet properties [17]. *Black pepper* and *garlic pods* have long been used to treat cardiovascular issues. Three to four garlic pods combined with powdered black pepper are softly fried in cow's ghee until they become slightly pink, then eaten on an empty stomach before breakfast to treat arterial blockage or heart-related problems. One raw *black pepper* and one raw garlic pod per day are advised for high blood pressure.

**Index Terms**—garlic pod, black pepper, garlic, blood pressure remedies.

## I. INTRODUCTION

It is the obstruction or clogging of the coronary arteries which causes more deaths than any other factors. The arteries, which supply the heart with blood and oxygen, become increasingly narrower as plaque builds up over time. When blood supply becomes restricted, a certain portion of the heart is deprived of oxygen and leads to heart attack. The two greatest means of heart disease are high blood pressure and high blood serum cholesterol levels; which are directly impacted by the therapeutic action of garlic. The relevant role of garlic in coronary heart disease was done on rabbits and found that even pre-existing atherosclerotic deposits and lesions could actually be reversed if garlic was consistently consumed [3].

The most significant preventive treatment [16]. is piperine, a significant bioactive component found in both black and white pepper [18]. These minerals are necessary for human daily activities. Additionally, black pepper has a substantial amount of vitamins. The presence of these phytochemicals was linked to various pharmacological actions. People from nations where garlic is frequently used in food are less likely to develop blood vessel illnesses, particularly atherosclerosis [12]. The most well-known use of garlic is likely as a supplemental treatment for blood pressure management [4]

## II. METHODOLOGY

Tests for carbohydrate are Molish's test, Iodine test, Fehling test, SSBenedict test, protein is detected by Millions test, Xanthoprotein test, Precipitation test, Lead acetate test, Alkaloids is confirmed by Hager test, Wagner's test, Test for flavonoids were done Sulphuric acid, Lead acetate, Alkali. Tannins were gives Ferric

chloride test, Gelatin test Lead acetate, Dilute Iodine test, Potassium test, mucilage gives the Swelling test, Ruthenium red test. Fatty oil is given by Filter paper test. Essential oil was identified by Sudan red III.

Black pepper is one of the most well-known species in the *Piperaceae* family because of its primary pharmacological component, among other reasons. Black pepper has been popular since ancient times due to its religious significance, which is beneficial to the current generation. I have isolated a variety of compounds, including phenolics, flavonoids, alkaloids, amides and steroids, lignans, neolignans, terpenes, chalcones, and many more [15]. Garlic's chemical constituents have also been studied for the treatment of cardiovascular disease, cancer, diabetes, atherosclerosis, and hyperlipidaemia [11].

### III. RESULT AND DISCUSSION

Alkaloids, flavonoids, tannins, mucilage and essential oil are found positive. It is supported by following results.

Dried berries have a volatile oil concentration ranging from 0.4 to 7%. Sabinene, 3-carene, D-limonene,  $\alpha$ -pinene, caryophyllene,  $\beta$ -phellandrene,  $\alpha$ -thujene, and  $\beta$ -bisabolene are the main components of BPEO. Furthermore, because of its possible therapeutic benefits, such as improved nutrition absorption and cerebral brain function, piperine is the primary bioactive alkaloid element of black pepper. Antioxidant, anti-inflammatory, anticancer, anti-obesity, antidepressant, antidiabetic, antimicrobial, gastroprotective, and insecticidal properties are just a few of the biological functions of BPEO. [2] Minerals, vitamins, proximate, and bioactive metabolites Minerals, vitamins, and nutrients abound in black pepper. Brachyamide B, Dihydro-piperidine, (2E,4E)-N-Eicosadienoyl piperidine, N-trans-Feruloyltryamine, N-Formylpiperidine, Guineensine, and pentadienoyl piperidine are a few of the substances. Nisobutyl-decadienamide, isobutyl eicosadienamide, tricholein, trichostachine, isobutyl eicosatrienamide, isobutyl-octadienamide, piperamide, piperamine, piperettine, pipericide, piperine, piperolein B, sarmentine, sarmentosine, and retrofractamide [2]. Piperine, isopiperine, chavicine, and isochavicine are the four isomers of piperine. Among all the substances that were separated from *Piper nigrum*. Different pharmacological actions were

discovered for piperine, pipene, piperamide, and piperamine [20].

Sulphur compounds (alliin, allicin, diallyl sulphide, ajoene, etc.), water, cellulose, amino acids, lipids, etheric oil, complex of fructosans (carbohydrates), steroid saponosides, organic acids, minerals (Mg, Zn, Se, germanium), vitamins (C, A, from B complex), enzymes, etc. [14] Garlic lowers the risk of atherosclerosis by lowering serum cholesterol levels, which stops lipids from building up in blood vessels. [1, 8] Blood pressure, cholesterol, cancer, hepatoprotection, antihelmintics, anti-inflammatory, antioxidant, antifungal, and wound healing, asthma, arthritis, sciatica, lumbago, backache, bronchitis, chronic fever, tuberculosis, rhinitis, malaria, and persistent skin diseases like leprosy and leucoderma, skin discolouration and itching, indigestion, colic pain, spleen enlargement, piles, fistula, bone fractures, gout, urinary disorders, diabetes, kidney stones, anaemia, jaundice, epilepsy, cataract, and night blindness are just a few of the many ailments that garlic has pharmaceutical effects. [19].

At least thirty-three sulphur compounds, a number of enzymes, the minerals germanium, calcium, copper, iron, potassium, magnesium, selenium, and zinc, vitamins A, B1, and C, fibre, and water are all present in garlic. Lysine, histidine, arginine, aspartic acid, threonine, swine, glutamine, proline, glycine, alanine, cysteine, valine, methionine, isoleucine, leucine, tryptophan, and phenylalanine are among the 17 amino acids that are present in garlic [13].

### IV. CONCLUSION

Blood clotting is greatly aided by platelets and fibrin, and elevated blood fibrin levels can result in a heart attack. Even more effectively than aspirin, the components of garlic can lower the production of fibrin as well as the amount of fibrin already present in the blood [10]. Garlic contains a sulphur component called ajoene, which appears to be the cause of its anti-clotting properties. However, ajoene is only active at room temperature or higher; it is absent from raw or freeze-dried garlic. Garlic is thought to help raise fibrin breakdown in humans from 24 to 30% [9].

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