

# Nigella Sativa, A Myth or Reality: A New Trend in Therapeutic Approaches of Kalonji

Sahir Hameed Khattak<sup>1\*</sup>, Sania Begum<sup>1</sup>, Anum Farrukh<sup>2</sup>, Imdad Kaleem<sup>3</sup>, Khansa Jamil<sup>1</sup>, Tahira Kamal<sup>1</sup>, Nouman Rashid Siddiqui<sup>4</sup>, Rabia Ikram<sup>1</sup>, Saima Noor<sup>1</sup> and Ghulam Muhammad Ali<sup>1\*</sup>



<sup>1</sup>National Institute for Genomics and Advanced Biotechnology (NIGAB), National Agriculture Research Centre (NARC), Islamabad, Pakistan

<sup>2</sup>Department of General Medicine, Fauji Foundation Hospital, Rawalpindi, Pakistan

<sup>3</sup>Department of Biosciences, COMSATS University, Islamabad, Pakistan

<sup>4</sup>Food Sciences Research Institute, National Agriculture Research Centre (NARC), Islamabad, Pakistan

\*Corresponding author: Sahir Hameed Khattak and Ghulam Muhammad Ali, National Institute for Genomics and Advanced Biotechnology (NIGAB), National Agriculture Research Centre (NARC), Islamabad, Pakistan

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## ABSTRACT

New plant-derived medications' improved efficacy and consumers' growing interest in natural products has caused attention in medicinal plants study. The use of natural goods as an alternative to conventional treatment in the management of many ailments has increased over the past several decades due to worries about the adverse effects of traditional medications and also because antimicrobial resistance to the new/advanced generation medications. After a thorough review, Nigella sativa (kalonji) has been found to have a wide range of biological and therapeutic effects, including antihypertensive, antidiabetic, anticancer, immunomodulatory, antimicrobial, anti-inflammatory, bronchodilator, gastroprotective, hepatoprotective, renal protective, antidiarrhoeal, antirheumatic and for dermatological conditions. Apart from N. sativa there are a lot of other medicinal plants that need to be explored because in the upcoming era we may face lethal diseases and pandemics which need every medical field (allopathic, homeopathic, organic etc.) to contribute to the great cause preferably natural as they are quite effective and without any side effects. Furthermore, the capability of these plants must also be explored in relation to diseases and human health. This review explains the importance and also the use of N. sativa as a broad spectrum medicine along with other medications.

**Keywords:** Nigella Sativa; Medicinal Plant; Biological and Therapeutic Effects; Healing and Treatment; Pandemics; Human Health; Antioxidant; Anti-Inflammatory; Anti-Cancer; Anti-Microbial; Immunomodulatory

## Introduction

For many ages, both traditional and various indigenous medical systems have used medicinal plants to treat illnesses. These plants are also utilized to make herbal medicines because they are thought to be safer than current allopathic medications [1]. Since only a few plant species have been thoroughly examined for their therapeutic characteristics, potential, mechanism of action, safety

assessment and toxicological investigations, many researchers are concentrating on medicinal plants. Additionally, it is known that people from various cultures and locations employed the same plants to treat ailments that were similar in nature. More of these plants, as well as their isolated components, have demonstrated favorable therapeutic properties, including antioxidant, anti-

inflammatory, anti-cancer, anti-microbial, and immunomodulatory effects [2]. Since numerous studies have revealed its broad range of pharmacological potential, *N. sativa* (Family Ranunculaceae) is emerging as a wonder herb with a rich historical and religious background. Black seed is a common name for *N. sativa*. Native to Southern Europe, North Africa, and Southwest Asia, *N. sativa* is also grown commercially around the world in a variety of locations, including the Middle East Mediterranean region, Southern Europe, India, Pakistan, Syria, Turkey and Saudi Arabia [3]. For centuries, people all over the world have utilized *N. sativa* seeds and oil to treat a wide range of illnesses. Additionally, it plays a significant role in the Indian traditional medical systems, such as Unani and Ayurveda [3].

Because black seed was stated as the cure for every illness except for death in one of the Prophetic hadiths, it is regarded by Muslims, Hindus (and other cultural societies/religions etc.) as one of the greatest forms of curative medicine accessible [4]. Kalonji is also used to stimulate the immune system, increase lactation in nursing women, fight parasitic infections, aid digestion and as an anti-diarrhoeal [5]. Thymoquinone (TQ), a key chemical constituent of the essential oil, is responsible for the majority of this plant's therapeutic benefits. Because black seeds have a very low level of toxicity, they are also utilized in food as a flavor component in breads and pickles [6]. These herbs have been used for ages in the Middle East, North Africa and India as a diuretic, lactagogue, and vermifuge, as well as for the treatment of asthma, cough, bronchitis, headache, rheumatism, fever, influenza infections and eczema. Additionally, black cumin seeds are valuable as a spice and carminative; they are frequently used as a topping on bread and other foods. [7]. The angular, black seeds are called «Habbah Sauda,» «Habbet el Baraka,» «Kamun-aswad» and «Shunez» in Arabia. They have 36%–38% fixed oil, proteins, alkaloids, saponins, and 0.4%–2.5% essential oil [7].

### **Kalonji in Food**

The kalonji, or *Nigella* seeds, is an interesting spice – when used for tempering, it adds a beautiful aroma to the dishes, and a hint of flavour that you can't quite nail. In India, dry roasted kalonji is used for flavouring curries, daal, stir-fried vegetables, and even savouries such as samosa, papdis and kachori among the others. Flavour and aroma aside, the tiny black seed comes with a whole lot of health benefits. It's loaded with trace elements, vitamins, crystalline nigellone, amino acids, saponin, crude fiber, proteins, fatty acids like linolenic and oleic acids, volatile oils, alkaloids, iron, sodium, potassium and calcium. It also protects your heart, helps with breathing issues, lubricates your joints, and has been shown to be anti-carcinogenic. Kalonji can be kept as oil in a bottle at home and utilized for a variety of purposes to improve your health and address minor issues [8].

## **Health Benefits of Nigella Seeds**

### **Keeps Diabetes Under Control**

One of the most well-known advantages of kalonji is to keep blood sugar under control. Additionally it is also very helpful for managing diabetes in the diabetics [9].

### **Memory Enhancer**

When combined with honey and almonds, kalonji seeds are said to lessen mental strain. Consume it every day on an empty stomach to improve your cognitive power. The elderly age group can greatly benefit from strengthening their poor memory. Consuming Kalonji seeds with mint leaves is advised by Ayurveda since it helps improve memory and stave off neurological diseases like Alzheimer's [10].

### **Skin and Hair Problems**

It's very common to have desire for attractiveness and Kalonji can assist you with that. It promotes healthy skin and hair. For glowing skin, combine its oil with lime juice and gently apply on skin. Half a teaspoon of kalonji oil for every cup of sweet lime juice. Watch your acne and blemishes fade by applying the oil to your face twice daily. You can also use pure kalonji oil to cure cracked heels [9]. Pure Kalonji oil is an excellent treatment for cracked heels that is just as effective as a natural foot soak [11,12]. Similarly, the uncontrolled hair loss, thinning hairline and dandruff are frequent issues that affect both men and women and are brought on by a variety of elements, including an unhealthy diet, inadequate nourishment, and an unhealthy way of life. But Kalonji oil for hair has a plethora of advantages. It is also one of the best natural treatments for managing hair loss, as it not only stops hair loss but also encourages hair growth [8].

### **Anti-Cancer Effects**

Antioxidants found in Kalonji are effective at scavenging cancer-causing free radicals. The particular tumors that it effectively treats include breast, pancreatic, lung and cervical cancers [12].

### **Role in Asthma**

Asthma has become a highly widespread condition as a result of pollution. For asthmatics, kalonji is a potent medication. It is quite effective as a mixture of ground kalonji seeds, a small amount of honey and warm water, aiding in easing respiratory difficulties, including asthma, in both children and adults [13].

### **Removes Headaches**

Headaches are one of the most prevalent urban problems today. Rub kalonji oil on your forehead, unwind, and wait for the headache to go away rather than popping a pill [8,13].

### **Promotes Weight Loss**

For people who are on a diet to reduce body weight, the

combination of warm water, honey and lemon is frequently advised. Now experiment with this mixture by adding a small amount of powdered kalonji seeds. The magic ingredient kalonji seeds, according to many health enthusiasts, aids in losing those extra pounds [14].

### **Reduction in Joint Pains**

It's an antiquated method: heat up some kalonji seeds thoroughly in some mustard oil. When the oil starts to smoke, remove it from the heat and let it cool for a while. When you can comfortably dip the tip of your finger into the oil, the oil is ready. Now massage the inflammatory joint with this oil [14].

### **Cardioprotective Effects**

A healthy diet is recommended for a healthy heart. By regulating the levels of harmful cholesterol in your body, it keeps your heart healthy. To get effective outcomes, you consistently need to take a mixture of milk and kalonji oil [15,16].

### **Anti-Inflammatory**

Various chronic inflammations can be treated using kalonji seeds. By decreasing inflammation, it is renowned for relieving joint discomfort. Daily consumption of kalonji oil is advised by Ayurveda to reduce inflammation [14].

### **Kidney Problems**

In cities, kidney stones are a widespread issue. According to legend, kidney pain, stones, and infections can be treated with the use of half a teaspoon of kalonji oil mixed with two tablespoons of honey and warm water. To achieve a proper diet, however, you must also speak with a doctor [16].

### **Dental Benefits**

The dental problems like swollen or bleeding gums and weak teeth have been treated with kalonji in the past. In addition to seeing a dentist, one should massage their gums twice a day with kalonji oil and curd to strengthen them [14].

### **Boosts Immunity**

The benefits of kalonji oil, honey and warm water are numerous. In addition to the benefits already described, regular consumption can also aid to boost immunity. Inhaling the fumes from boiling water having kalonji oil added can also benefit persons with sinusitis issues by reducing nasal congestion [17]. Weak immune systems render us susceptible to recurrent colds and fever, but kalonji oil can assist by boosting immunity and boosting the body's ability to fight off viruses and bacteria that cause disease [18].

### **Getting Rid of Piles**

Some of the typical digestive diseases that affect people of all ages constipation leading to piles. Laxatives can help with this

issue, but in the long run, they are more detrimental to the body than beneficial. Kalonji can be used to treat constipation and piles organically [9,11].

### **Gain Energy**

The body can lose energy due to environmental exposure, daily work stress, bad lifestyle choices and inactivity. However, kalonji seed oil can quickly alleviate fatigue, sluggishness and lethargy by giving the body rapid vigor and vitality [19].

### **Backache And Arthritis**

Almost everyone has experienced back pain at some point in their lives, which can be either be acute or chronic. One of the most common reasons of back discomfort is rheumatism, which has an impact on the connective tissues and joints [8,14], and kalonji oil massage helps in managing backache.

### **Female Health Issues**

Most women experience white discharge, painful menstruation, irregular periods, and PMS symptoms on a regular basis. Similar to yoga for PMS, kalonji oil is a wonderful treatment for many bleeding-related issues in women [8].

### **Treat Anemia**

A prevalent issue affecting the majority of women in their reproductive years is anemia (reduced haemoglobin and thus oxygen carrying capacity in the blood). Although eating a well-balanced diet full of key nutrients is crucial for the treatment of anemia, Kalonji seeds and oil are also an effective therapeutic option [18,20].

### **Irritation and Vomiting**

Morning sickness, nausea and vomiting can be brought on by a nervous disorder, weakness, or pregnancy. A potent natural treatment for treating nausea and vomiting is kalonji [21].

### **Removal of Warts**

Warts are bothersome skin growths that can form on the hands, face, neck, feet and other areas of the body. They can change a person's physical appearance. A lesser-known yet effective treatment for warts is kalonji [18].

### **Treatment for Impotence**

Men frequently have erectile dysfunction, impotence and premature ejaculation. Male impotence has long been treated naturally using kalonji [22].

### **Eye Conditions and Vision Impairment**

Anyone, at any age, can develop eye conditions and experience visual loss. Kalonji can serve as a useful home remedy in this situation even if there are other therapeutic and surgical methods

to manage these issues [23].

### Medications of Kalonji by People

This seed has majority of uses and people are using these medicinal plants from centuries, even in the present era as well. The proper dosage and method of administration is quite important, some common management plans are listed below:

#### Diabetes

For the treatment of diabetes, black tea and kalonji oil are both used. To get fantastic results within a month, combine 1/2 teaspoon of Kalonji oil in 1 cup of black tea and drink the concoction as soon as you get out of bed in the morning.

#### Memory

To improve your memory, boil 10 grams of fresh mint leaves in water with 1/2 teaspoon of kalonji oil. Then, eat the liquid twice daily for a month. To get the same advantages, combine some crushed kalonji seeds with a teaspoon of honey and a half teaspoon of kalonji oil.

#### Headache

To relieve throbbing pain, a headache sufferer can apply pure Kalonji oil to their forehead and the area around their ears, or they can consume 1/2 teaspoon of Kalonji oil in a cup of black tea twice a day.

#### Asthma and Allergy

Every day, before breakfast and after supper, have a cup of warm water or milk with 1 teaspoon of honey and 1/2 teaspoon of Kalonji oil as part of the Asthma, Cough, and Allergy Treatment four times a day. Avoid eating or drinking anything cold during this treatment for a month or two specially during winter season.

#### Joint Pains

To reduce joint discomfort, soreness, stiffness and swelling, mix 1/2 teaspoon of Kalonji oil, 2 teaspoons of honey, and 1 cup of vinegar. Apply this mixture to the joints twice daily. Back and neck discomfort can both be treated with this concoction.

#### Kidney

To treat renal colic, lumber discomfort, kidney stones and kidney infection, mix 1 cup of warm water with 1/2 a teaspoon of Kalonji oil and 2 teaspoons of honey. Consume this mixture twice daily. Along with this treatment, you should adhere to a well-planned kidney stone diet chart.

#### Teeth and Gums

Apply a paste made of 1 cup of curd and 1/2 teaspoon of kalonji oil on your teeth and gums twice a day. Rinsing your mouth with a mixture of 1/2 teaspoon Kalonji oil and 1 tablespoon vinegar will

help to avoid toothaches and gum swelling. To treat toothaches and prevent cavities, a piece of clean cotton soaked with Kalonji oil can be left next to the affected area for a while.

#### Cough

To prevent and treat a cough and cold, mix 1/2 teaspoon of kalonji oil with 2 teaspoons of honey and ¼ teaspoon of powdered black pepper, in 1 cup of boiled water or preferably milk, and drink it four times a day. It is also helpful for people who have sinus problems.

#### Loss of Weight

Use 1/2 teaspoon of Kalonji oil and 2 teaspoons of honey in 1 cup boiled water (with mint) three times a day to help you lose weight. By accelerating metabolism, it facilitates the process of increasing fat catabolism.

#### Skin

Two times a day, before getting into bed at night, soak your feet in this combination consisting of 1/2 teaspoon of Kalonji oil and salt in 1 cup of sweet lime juice. It aids in the treatment of cracked hands, aching heels, and cracked feet.

#### Energy

To obtain an instant energy boost, mix 1/2 teaspoon of Kalonji oil, two teaspoon of honey in a glass of orange juice and drink it every day.

#### Women Problems

Boil half a bunch of mint leaves in two cups of water until there is only one cup left. For optimal results, filter the water; add two spoons of powdered sugar (misree) and half a spoon of kalonji oil. Consume this mixture every day for 40 days before breakfast. Juice some mint leaves after boiling them in water. Mix one teaspoon of Kalonji oil with 1 cup of mint juice and consume the resulting concoction twice daily for 21 days in the morning and in the evening and then every time from before the start of menstrual cycle till it completes. Throughout this course of treatment, eat a bowl of curd with each meal and use warm fluids.

#### Sexual Impotency

For sexual dysfunction, 200 grams of pulverized kalonji seeds, one teaspoon of powdered almonds and 1 tablespoon of olive oil mixed thoroughly, should be consumed after each meal. It will support the recovery of vitality and improve endurance.

### Discussion

The control and eradication of diseases are top priorities. The only means of effective control is long-term solutions rather than short term [24,25], which calls for a coordinated effort and methodology for targeted ways-out rather than the individual



and short-term approach used in conventional programs [26,27]. Recent methodological developments, including genetic modification, transformation, enzyme research and application, development Nanotechnology (testing on vero cell lines), and so on, are regarded as useful assets in increasing output yield [28-31]. The global herbal medicinal sector is now dealing with a number of problems, most notably the practice of adulterating these medications [32,33]. This is the main reason why people nowadays no longer believe in these natural remedies [34,35]. In the modern period, intentional adulteration is carried out in a variety of ways, including the substitution of normal commercial varieties, inferior but ostensibly comparable pharmaceuticals, intentionally created drugs, exhausted drugs, and poisonous ingredients. Adulteration can occur intentionally or accidentally. The quality of the original medications is ultimately diminished by these adulteration procedures. The herbal plant dealers employ these adulteration tactics so cunningly that they go undetected unless and until a microscopic and chemical level inspection is required [31]. Drug deterioration and degradation are two of the main drawbacks of adulteration.

Additionally, drug adulteration raises the price and has unfavorable impacts rather than real biological ones.

Traditional herbal medicines and their formulations have very low toxicity levels and contain no adulterants of any type [36,37]. The traditional Ayurvedic herbal formulations made from Kalonji plants are also thought to possess a wide range of therapeutic characteristics that can treat a wide range of illnesses without seriously harming the body [10]. Modern contaminated medications typically come with health hazards. For instance, the present anti-obesity medications have side effects, whereas *N. sativa* has been shown in numerous trials to have anti-obesity action with the least toxicity and adverse effects [3-5]. In naturopathy, pure black seed oil is a crucial ingredient. When purchasing nigella seeds, keep in mind to thoroughly inspect the pack as there are lot of similar type of plant and they are used for adulteration in the original seeds pack; the seeds of Kalonji are jet black and shouldn't appear stale. The herbal sector also uses this plant as a dietary supplement. Children are given a teaspoon of black seed oil mixed with yogurt starting at age 4 as a nutritious dietary supplement [8,9].

## Conclusion

Kalonji has no negative side effects. However, if used in big doses, it may cause low blood pressure or blood sugar. Mothers who are nursing also don't realize how it affects them. So it's wise to play it safe and stay away from Kalonji while nursing. During or after surgery, kalonji may prevent your blood from clotting properly. It can occasionally induce an allergic reaction when applied to the skin, and it is challenging to prescribe Kalonji as a typical treatment for a variety of medical disorders as due to a paucity of clinical data.

For this reason it's better to treat the consultant before using any medicinal plants.

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Sahir Hameed Khattak. Biomed J Sci &amp; Tech Res



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