A REVIEW ON KALONJI (NIGELLA SATIVA): A SEED OF BLESSING

Chitra B. Hangargekar¹, Rubiya S. Quazi², Mohammad Sadat A. Khan³, Amol A. Joshi⁴, Pallavi B. Hangargekar⁵

¹²Department of Quality Assurance, ³Research Scholar, ⁴Department of Pharmacognosy, ⁵Student, ASPM’s K. T. Patil College of Pharmacy, Osmanabad, 413501, Maharashtra, India.

ABSTRACT

In the age of chemical industrial products, the natural means finally has become the first to come in our minds, once we hear words like bacteria or virus. Strengthen our immune system would be our shield to resist those potential dangers instead of the traditional chemical means that comes with a long list of side effects to fight against several various ailments. Black Seed is considered to be the greatest healing herb of ancient time and it has been much neglected. It is being used to strengthen the immune system, fight and irradiate different Cancer, purify the blood and increase longevity. Nigella sativa is from the prophetic remedies. Nigella sativa was traditionally used for the promotion of good health and overall well-being, but it was also being researched for many ailments, including fever, immune system, common cold, asthma, rheumatism, immune disorders, microbial infections, intestinal worms, cardiovascular complaints and headaches. Thymoquinone is the most powerful and abundant constituent of black seed, has been shown to be the active principle responsible for many of the seed's beneficial effects. Kalonji oil has immune-modulatory properties and has a positive effect on diverse conditions resulting from deficiencies of the immune system. This review paper describes about the seeds, its chemistry and popular uses in traditional medicine. It also discusses the medicinal potential and therapeutic values of this miraculous herb which is one of the best gifts that our nature offered to us to boost our Immunity.

KEY WORDS - Ailments, Nigella sativa, Immunity, Thymoquinone, Miraculous herb

I. INTRODUCTION

Plants are natural factories for production of different chemical compounds many of which are used to promote health and fighting against diseases. Medicinal plants functions as a therapeutic alternatives, safer choices, or in some cases, as the only effective treatment. People in separate cultures and places are known to have used the same plants for similar medical problems. A larger number of these plants and their isolated constituents have shown beneficial therapeutic effects, including anti-oxidant, anti-inflammatory, anti-cancer, anti-microbial, and immunomodulatory effects.¹⁻⁸ Nigella sativa is the most promising plant that rich in religious and historic background. The most famous saying of Holy Prophet (S.A.W), “Hold on to use of the black seeds, for it has a remedy for every illness except death” and the word “Hold on” represent as long term use. He himself (S.A.W.W) used to take black seeds along with honey for therapeutic purpose.⁹ Prophet Mohammad was quoted as saying, “There is healing in Black Seed for all diseases except death.” It is also believed that honey was part of the tradition with blessed seed. Putting some honey and ground whole black seeds in the palm of right hand and lick it up with the tongue was the tradition at that time. The seeds of N. sativa are the source of the active ingredients of this plant. It is the black seed referred to by the prophet Mohammed as having healing powers.¹⁰

Fig. 1. a. Nigella sativa seeds  

b. Nigella sativa flower
NS contains a long history of traditional belief of usage in several civilizations and has been identified as a “miracle cure” for its ability to treat various diseases and assist the body in its own natural healing process. In ancient texts and historical documents, NS has been mentioned as a notable healer for a range of ailments. For the Muslim community, the traditional practice of usage of black seed is primarily due to the authentic prophetic statement of Prophet Mohammad (PUBH) that NS is a cure for all, except death; that was quoted by a famous Muslim scholar, Al-Bukhari. Thus, the praised status of Nigella among the Muslim community is as Habbat Albarakah, with the term “Albarakah” marking its “blessed” status. Besides that, various Muslim scholars also gave abundant credit to the miraculous healing properties of the Nigella and, hence, its importance within the “Prophetic Medicine” tradition. Black seed (also referred to as black cumin; Nigella sativa) is an annual flowering plant belonging to the Ranunculaceae. It is an excellent phytomedicine which is a native of Southern Europe, North Africa, and Southwest Asia. Black cumin is cultivated in the Middle Eastern Mediterranean region, Southern Europe, Northern India, Pakistan, Syria, Turkey, Iran, and Saudi Arabia. Nigella sativa seeds and their oil have a long history of folklore usage in Indian and Arabian civilization as food and medicine. The seeds of N. sativa have a pungent bitter taste and aroma and are used as a spice in Indian and extensively in Middle Eastern cuisines. The dry-roasted nigella seeds are used for flavouring the curries, vegetables, and pulses. Black seeds are used in food as a flavouring additive in breads and pickles. It is also used as an ingredient of the spice mixture (panch phoron) and also independently of many recipes in Bengali cuisine.

**Scientific Classification:**

- **Kingdom:** Plantae
- **Clade:** Angiosperms
- **Clade:** Eudicots
- **Order:** Ranunculales
- **Family:** Ranunculaceae
- **Genus:** Nigella
- **Species:** N. sativa

Nigella sativa is the scientific name for a plant that goes by several other names, including:

- Black seed
- Black cumin
- Black caraway
- Cumin noir
- Fennel flower
- Seed of Blessing
- Small Fennel
- Kalonji
- Damascena
- Devil in-the-bush
- Wild Onion Seed
- Love in a Mist
- Mugrela
- Nielle
- Nutmeg Flower
- Ajenuz
- Aranuel
- Baraka
- Charnuska
- Cheveux de Vénus
- Cominho Negro
- Cyah Dane
- Fitch
- Graine de Nigelle
- Graine Noire
- Habatul Sauda
- Habbatul Baraka
- Kalajji
- Kalajira
- Ketsah
- La Grainer Noire
- Nigella sativa
- Nigelle de Crête
- Nigelle Cultivée
- Poivrette
- Roman-Coriander
- Schwarzkummel
- Siyah Dane
- Shoniz

**Common Names**

- **English:** Black caraway, Small Funnel, Black Cumin, Nigella
- **Arabic:** Habbatul Sauda, Kabodan, Kamun Aswad, Shoneez
- **Persian:** Shoneez, Siyah Dana
- **Urdu:** Kalonji
- **Hindi:** Kalonji, Kalajira, Mangraila
- **Bengali:** Kala Zeera, Mangrela
- **Gujarati:** Kalonjir Jirum, Kadujeeroo
- **Kannada:** Karijirige
- **Kashmiri:** Tukhme Gandana
- **Marathi:** Kalaunji-jire, kaleterjiere
- **Malyalam:** Karinchirakam
- **Panjabi:** Kavanji
- **Tamil:** Karunjarakam, Karunjiram
- **Telugu:** Peeajila Kara, Nallajilakara
- **Sanskrit:** Susavi, Krishna jiraka, Upakuncika, Karvi, Sthula Jiraka
- **Sindhi:** Kalodi
- **Unani:** Sino, Sheenon, Kamaazaruus
- **Turki:** Qarachurak Audi

Black Seed, dates back 5000 years as a medicinal mainstay, today 200 medical studies reveal its therapeutic uses. Black cumin was valued for its many qualities and bitter, warming stimulant nature. It has also been highlighted that the active substances of N. sativa have antibacterial, antifungal, antidiabetic, immunomodulator, anti-inflammatory, analgesic, antiviral, antioxidant, anticonvulsant, antihypertensive, anticancer and antihyperlipidemic effects. Due to these effects, N. sativa seed and oil have been used globally in the treatment of many diseases such as asthma, diarrhoea, dysentery, dyspepsia, fever, icterus, apoplexy, hemorrhoids and cardiovascular, digestive, immune-system, liver, respiratory and kidney diseases.
II. CHEMISTRY OF N. SATIVA:

The N. sativa seed, depending on the region, contains volatile (0.40%–0.45%) and non-volatile (32%–40%) oils, protein (16.00%–20.85%), carbohydrates (31.0%–33.9%), fibre (5.50%–7.94%), alkaloids, tannins, saponins, minerals such as iron, calcium, potassium, magnesium, zinc and copper (1.79%–3.44%), vitamin A and C, thiamine, niacin, pyridoxine and folate. The five major components that are found in Black Seed are:

1. Nigellin and Melanthin- promote intestinal cleansing.
2. Sterols- Supports secretion throughout the body.
3. Nigellone and Thymoquinone- These two volatile oils have anti-spasmodic and broncho-dialating properties. Additionally, they work as an antihistamine.
4. Essential Fatty Acids - Rich in supply of polyunsaturated fatty acids. They regulate metabolism and carry toxins to the skin for elimination, it maintains balance of insulin levels, regulate cholesterol, improves the blood circulation and help liver functions.
5. Prostaglandin- Produces E1 that regulates hormone secretion and lowers blood pressure.

The Black Seed contain over 100 active chemical compounds that may increase health. The three ingredients most studied for their effects are:

1. Crystalline nigellone – well researched for increasing immune function, especially respiratory health;
2. Thymoquinone – researched for cancer treatment, a compound not yet detected in any other plant;

Black Seed’s other nutrients:
Black Seed contains good fats such as oleic acid (olive oil’s health-giving component); poly and monounsaturated unsaturated fatty acids including omega 3 (linolenic acid), omega 6 (linoleic acid), and omega 7 (palmitoleic acid, and arachidonic acid).
It also contains protein in that 8 of the 9 essential amino acids that are combined to make “whole” protein. Black Seed also has essential growth elements like vitamin B1, vitamin B2, vitamin B3, folic acid, calcium, iron, copper, zinc and phosphorous.

III. Black seed oil:

Fig. 2. Some important chemical constituents of Nigella sativa

Fig. 3. Nigella sativa seed oil
A nutritional balanced diet always comes as a first recommendation when we just think to live better, healthier, happier and longer. Healthy oils and fats are commonly necessary in any healthy diet for many reasons, one of them is helping our body to absorb the fat-soluble vitamins like A, D, E and K, as they are essential in hormone and cells creation. Natural dietary oils provide us with important nutrients that cannot be self-produced by our bodies as; fatty acids like Omega 3 and Omega 6, as they can supply our bodies by the good cholesterol HDL and decrease the bad one LDL. There are dozens of oils that come out from our pure nature, they have common benefits, and furthermore each type has its own unique benefits that make it special among the others, some are good for hair and skin, some are great to our diets which are used in cooking and as dressing and others have a special magical influence to a specific body systems. Black Seed Oil, the great little seed anecdotally, it’s been said to “cure everything except for death!” And the research is starting to back that up; studies show that this versatile oil can regulate the immune system, benefit blood sugar, and has anti-cancer activity. Black seed oil has been used successfully in the Middle East for more than 2,000 years to treat several varieties of diseases. The ancient Egyptians used black seed oil for thousands of years to alleviate diseases and strengthen the immune system, and this was discovered in their graves and mentioned in the drawings on its walls. In the first place of natural sources is black seed oil. One of the important aspects was also recognized, the positive effect of black seed oil in allergies of all kinds. Further, in the recent past, studies have shown that black Cumin oil can restrain and inhibit the growth of tumors and chemotherapy treatment.

Black Seed Oil for Boost Immune System:

Our Immune System is our shield that we always try to keep it strong enough to resist the harmful invaders that might attack our body, it’s our internal defensive power that all the body systems need to protect them from any potential danger. And today’s world has lots of aliens in a viral and bacterial form, which consistently look for a host. The unsaturated fatty acids present in the oil are vital for a well-functioning immune system. As it is significant to prevent the occurrence of autoimmune diseases, which may occur due to many reasons such as; immune deficiency due to stress or a diffuse immune system.

Oil extracted from the dried Nigella Sativa is rich by fatty acids, which are the constituents of essential amino acids. They serve as messenger to deliver many types of vitamins and minerals to the whole body, in order to ideally maintain the daily physical functions. It also contains minerals as biotin, magnesium, selenium (for detoxification) and vitamins like A, B, C, and E.

A defective immune system is not only reflected in our internal organs, but also on our largest organ in our bodies which is “the skin”. This can lead to cracked skin such as neurodermatitis, acne, psoriasis, etc. Regular consumption of black seed oil, can protect from infection by different sorts of allergies, chronic illnesses and helps in case of a cracked skin in a natural way. However, it is also ideal for external use. For this purpose, the affected areas are treated topically, which relieves the itching and provide the dry areas with moisture. Black seed oil is also suitable for full-body care, which recommended for a velvety-soft skin.

Black Seed Oil nutritional value:

A small amount of black seed oil has many anti-oxidative and disinfectant properties, which is able to fight efficiently against allergies and respiratory or fungal infections, as well as a serving of the black cumin oil contains a 60% of the daily need to the unsaturated fatty acids, that cannot be formed by themselves in human body, that’s why it has to be from external intake, which make the natural pure black seed oil a very important product in naturopathy. Black seed oil helps protect the children in a natural way. Enhancing their defenses is a must nowadays. For children from the age of 4 years, a teaspoon of black seed oil mixed with yogurt daily for a healthy dietary supplement. Adults are advised to take a teaspoon of black seed oil every morning 15 minutes before breakfast.

Top incredible benefits of kalonji to boost immunity:

![Pharmacological Activities](image_url)

Fig. 4. Pharmacological activities of Nigella sativa
There are numerous benefits of kalonji since the seeds can boost the health, heal the blemishes on skin and are also known for their anti-carcinogenic traits. The black magical seeds of the kalonji plant are useful for both culinary and healing purposes.

1. **Immune system strengthening**: It has been confirmed through many studies that kalonji seeds play an important role to enhance human immunity, particularly in immunocompromise patients. These findings may be of great practical significance since a natural immune enhancer like the nigella seeds could play an important role in the treatment of cancer, viral infections and other diseased conditions associated with immune deficiency. In some research, it has been also shown that black seed enhanced the ratio between helper T-cells and suppressor T-cells by 55% with a 30% average enhancement of the natural killer cell activity.

2. **Anti-bacterial**: Through many research, it has been shown that the black seeds have anti-bacterial and anti-fungal properties. Kalonji antibacterial activity was compared with different antibiotics such as ampicillin, tetracycline, cotrimoxazole, gentamicin, and nalidixic acid. Kalonji oil proved to be more effective against many strains of bacteria, including those known to be highly resistant to drugs such as V. cholera, E. coli and all strains of Shigella species.

3. **Anti-inflammatory**: Balck seeds oil has an anti-inflammatory effect. In a recent study, it has been found that the oil inhibited eicosanoid generation and demonstrated anti-oxidant activity in cells. The presence of unsaturated fatty acids in black seed is possibly responsible for boosting the oil’s effectiveness. The daily consumption of kalonji (in certified amounts as recommended by the doctor) can keep the body healthy and suppress many inflammations.

4. **Anti-histamine activity**: Histamine is responsible for bronchial asthma. A study showed that the presence of dimer dithymoquinone in black seed’s volatile oil, named “Nigellone,” is effective if it is given by mouth to patients suffering from bronchial asthma and other allergic diseases. It is also found that crystalline nigellone decrease the uptake of calcium in mast cells, which also inhibits histamine release.

5. **Anti-tumor properties**: Some study has confirmed that nigella seeds have potential anti-tumor properties. Therefore, these oil and seeds can be used in the treatment of cancer; it can fight against pancreatic, cervical, prostate and skin cancer.

6. **Anti-viral**: Kalonji oil is quite effective against viral infections such as cough & cold along with asthma and allergy. In some studies it is suggested that one should take a cup of warm water, one spoon of honey and half tea spoon of Kalonji oil. Mix this together and drink in the morning before the breakfast and after dinner. For better results, it should be continued for 30 days. The mix of one glass warm water, two spoons of kalonji oil and two spoons on Honey, if taken thrice a day once in the morning before breakfast, after lunch and after dinner; said to combat all types of viral infections.

7. **Breathing difficulty**: Now a day there are problems of respiratory diseases everywhere and a large number of people, especially the elder one are having breathing difficulties including short breath, blockage of heart valve and heart problems. In such cases, it is recommended to one cup milk add half tea spoon of Kalonji oil. Use this mixture twice a day, once in the morning before breakfast and after dinner. It may be continued for 21 days for boosting immunity.

8. **Full of anti-oxidants**: Our immune system gets weak due to numerous presences of free radicals and consequently fighting with many diseases and disorders. Antioxidants play a crucial role in protecting the body against free radicals, which give rise to life-threatening diseases like cancer and other cardiac ailments. Nigella seeds contain more than 100 components, which are rich sources of polyunsaturated fatty acids and help the body produce Prostaglandin E1. It is an excellent healer and good to strengthen the weak immune system. Certain compounds in kalonji add to the distinct kalonji benefits, like thymoquinone, carvacrol, t-anethole, and 4-terpineol are enriched with antioxidants and fight against oxidative damage.

9. **Sound sleep**: The people who are facing the problem for insomnia, they hardly experienced sound sleep. The absences of sound sleep also exaggerate the conditions. Kalonji plays an important role in sound sleep. Experts suggest taking half teaspoon of Kalonji oil with one spoon of honey after dinner, it will help to have a sound sleep.

10. **Cough & Cold**: If someone has a weak immune system, now and then one may be affected with cough, cold, sinus and other breathing-related problems including seasonal allergies. In such experts suggests that Kalonji oil together with honey is very effective remedy.

11. **Regulates cholesterol level**: Various studies have been conducted based upon it was inferred that kalonji benefits are associated which include a significant decrease in LDL cholesterol as well as blood triglycerides. By lowering the cholesterol level, kalonji protects the body against major diseases.

12. **Improves liver health**: Liver is a crucial organ of the body as it carries out various important physiological functions of our body. A handful of kalonji can be effective against liver damage and reduces oxidative stress that otherwise may lead to severe liver diseases.

13. **Regulates blood sugar level**: High blood sugar is one of the most threatening conditions a person can have. Some studies indicate that kalonji benefits in minimizing the adverse effects of high blood sugar. A healthy quantity of kalonji aids in regulating and maintaining the blood sugar level.

14. **Fights stomach ulcers**: Kalonji helps in protecting the stomach lining and prevents the formation of stomach ulcers.

15. **Memory and immunity booster**: Kalonji benefits the immune system of the body due to the abundant presence of antioxidants. Moreover consuming powdered kalonji with a little bit of honey can also help in sharpening the individual’s memory.

16. **High Blood Pressure**: Nigella sativa is widely reported to have anti-hypertensive properties, which aid in reducing blood pressure. A research study found that Nigella sativa oil significantly decreased systolic and diastolic blood pressure among 70 participants. However, a more recent study wanted to test Nigella sativa’s diuretic properties and ability to curb over activity in the sympathetic nervous system to gauge whether it positively impacted blood pressure. After administering Nigella sativa seed extract twice per day for 28 days, the result was lower blood pressure, but not to a significant degree.
IV. CONCLUSION:

Our polluted surroundings really fit to be a perfect home for lots of viral diseases. In our modern times, it is easy to move around the world in the shortest possible time, and without a fully-functional immune system we are all at danger of a fast infection with a viral disease. Well-known viral diseases such as Influenza, rubella, chickenpox, herpes and recently unknown viral pathogens called corona-virus. We should secure our body systems by a tough immune system. We know that in case of immune deficiency our bodies become susceptible to the smallest pathogens. In everyday life we are constantly exposed to harmful influences, in public transport, at work, our children in play grounds, schools, everywhere, the viruses could be anywhere. In present scenario the use of herbal medicine is increasing as an alternate way to treat those diseases which have no cure in modern medicine or for which there is risk of side effects. In Unani Medicine the diseases are treated with non-toxic herbal drugs like Nigella seeds. A regular morning consumption of black seed oil helps the whole family to enhance the body defenses. Kalonji or nigella sativa oil is known for its magnificent benefits. Kalonji oil is widely known for its powerful curing and healing medicinal properties. It has been said that Kalonji is the remedy for all diseases except death. Due to its surprising protective, preventive and healing powers, Kalonji is regarded as ‘Miracle Cure’. Therapeutically, it is used as anti-viral, anti-bacterial, anti-inflammatory, anti-pyretic, anti-histamine, anti-helmintic, anti-spasmodic, anti-tumour, and full of antioxidants. The information contained in this review article is the findings of modern scientific researches carried out on whole black seeds. Scientifically it is proved that the immunity system is the only system that has the ability to fight the diseases and produce cells that kill viruses. Based on these facts, we can conclude that the Kalonji/Black Seed may be a cure for every disease because it strengthens the immunity system which is responsible for curing diseases and combating viruses.

V. ACKNOWLEDGMENT

The authors wish to thank all the participants in this study. We sincerely thank the individuals who contributed to this work including all our colleagues, management and Principal of ASPM’s K. T. Patil College of Pharmacy, Osmanabad.
VI. REFERENCE