

THERAPEUTIC & PHARMACOLOGICAL POTENTIAL OF NIGELLA SATIVA LINN. IN UNANI SYSTEM OF MEDICINE: A REVIEW

Nasreen Aklaque^{1*} and Dr. Wajeeha Begum²

¹P.G. Scholar Department of Ilmul Qabalat Wa Amraze Niswan, National Institute of Unani Medicine, Banglore, Karnataka.

²Professor & HOD Department of Ilmul Qabalat Wa Amraze Niswan, National Institute of Unani Medicine, Banglore, Karnataka.

Article Received on
20 April 2018,

Revised on 11 May 2018,
Accepted on 02 June 2018,

DOI: 10.20959/wjpr201812-11976

*Corresponding Author

Dr. Nasreen Aklaque

P.G. Scholar Department
of Ilmul Qabalat Wa
Amraze Niswan, National
Institute of Unani
Medicine, Banglore,
Karnataka.

ABSTRACT

The seed of *Nigella sativa* Linn. from family Ranunculaceae commonly known as kalonji or Shooneez are used in Unani system of medicine and other traditional medicine. The use of *Nigella Sativa* for the treatment of human illnesses is since time-immemorial. Prophet Muhammad (ﷺ) too made specific statements on 65 medicinal plants, herbs and shrubs while making prescriptions for the sick people. Among the plants he prescribed *Nigella sativa* is the most important. About this plant he said, "Black seed is a remedy (cure) for all diseases (ailments) except death". This Prophetic statement generated tremendous interest among the world's scientific community. The researchers conducted laboratory experiments using intact animals and clinical trials using human volunteers to substantiate

the validity of the statement. However, it is amazing that the researchers after carrying out hundreds of researches around the globe finally concluded that the Prophe's statement is one hundred per cent true & explored that kalonji may include antidiabetic, anticancer, immunomodulator, analgesic, antimicrobial, anti-inflammatory, spasmolytic, bronchodilator, hepato-protective, renal protective, gastro-protective, antioxidant properties, etc. The present review is an effort to provide a detailed survey of the literature on scientific researches of pharmacognostical characteristics, and pharmacological activities of the seeds of this plant.

KEYWORDS: Astringent, Emenagogue, Immunomodulator, *Nigella sativa*, Pharmacological & Therapeutic.

INTRODUCTION

Medicinal plants have been a major source of therapeutic agents since ancient times to cure human disease. India is considered as “Botanical garden of the world” and more than 2200 species of medicinal and aromatic plants have been identified after studies. The revival of interest in natural drugs started in last decade mainly because of the wide spread belief that green medicine is healthier than synthetic products.^[1] *Nigella sativa* has been recognized as one of the most popular herbs in many parts of the world for centuries. It was used in the world as folk medicine to cure different kinds of diseases. *Nigella sativa* is an annual herb that belongs to the family Ranunculaceae and is most extensively investigated for its therapeutic purposes. There are several names attributed towards *Nigella sativa* in various countries of the world. In Arabic countries they are called as “Al-habbah”, “Al-Sawda”, “Habbet el-Baraka” meaning ‘seeds of blessing’ and “Kamounaswad”. In Iran, it is known as “Shonaiz”, “black cummin” in America, “Ajenu” in Europe, “Kalongi” in India and Pakistan, and “Schwarz kummel” in Germany. In the book “Cannon of Medicine”, Avicenna has stated that *Nigella* assists recovery from fatigue and depression as well as stimulates energy in the body. It is also one of the natural medicines used by Prophet Muhammad, and is called Tibb-e-Nabavi.^[2] In old Latin, it is called as ‘Panacea’ meaning ‘cure all’. The historical references to these seeds are also found in some of the oldest religious and medical texts. For example, it is referred to as ‘Melanthion’ by Hippocrates and Dioscorides.^[3] *N. sativa* has been extensively studied for its biological activities and therapeutic potential and shown to possess wide spectrum of activities viz. as diuretic, antihypertensive, antidiabetic, anticancer, immunomodulatory, antimicrobial, anthelmintics, analgesics, antiinflammatory, spasmolytic, bronchodilator, gastroprotective, hepatoprotective, renalprotective and antioxidant properties. The seeds of *N. sativa* are widely used in the treatment of various diseases like bronchitis, asthma, diarrhoea, rheumatism and skin disorders. It is also used as liver tonic, digestive, appetite stimulant, emmenagogue, to increase milk production in nursing mothers, to fight parasitic infections, and to support immune system.^[4] There is an attempt has been made in this review to cover the major therapeutic uses of *Nigella sativa* mentioned in Unani system of medicine and reported by the recent studies for *N. sativa* and its constituents.

Morphology of the plant

N. sativa is an annual flowering plant which grows to 20-90 cm tall, with finely divided leaves, the leaf segments narrowly linear to threadlike. The flowers are delicate, and usually

colored white, yellow, pink, pale blue or pale purple, with 5-10 petals. The fruit is a large and inflated capsule composed of 3-7 united follicles, each containing numerous seeds.^[5,6]

Scientific Classification

Kingdom : Plantae
Division : Magnoliophyta
Order : Ranunculales
Family : Ranunculaceae
Genus : *Nigella*
Species : *sativa*^[2]

Part used: Dried fruit, seed^[7] & oil^[8]

Dosage: 1-3 gm or 3-5 gm^[7,8,9]

Chemical constituent

Seeds contain a yellowish volatile oil 1.5 p.c., & a fixed oil 37.5 p.c., essential oil, albumin, sugar, mucilage, organic acid, metarbin, toxic glucoside, melanthin resembling helleborin, ash 5 p.c., moisture & Arabic acid. Volatile oil is active constituent. It consist of-(1).carvone 45-60 p.c.; an unsaturated ketone; (2). Terpene or d-limonene (3). Cymene.^[3,7,10] Thymoquinone proved to be the main active constituent of the volatile of the black seed.^[2,11]

Traditional uses

Traditionally the seeds & its oil are used in several diseases. All eminent Unani physicians of the past and present have written a lot on the medicinal benefits and healing properties of black seed. Its traditional applications range from skincare to digestion and fertility.^[12]

N. sativa has been traditionally used for the treatment of a variety of disorders, diseases and conditions pertaining to respiratory system, digestive tract, kidney and liver function, cardio vascular system and immune system support, as well as for general well-being.^[5,13] It is used as an analgesic, galactogogue, antihypertensive, liver tonic, diuretic, digestive, anti diarrheal, appetite stimulant, antibacterial, in dysmenorrhoea., amenorrhoea and skin diseases. The seeds are also traditionally used by Iranian therapists as a treatment for mastalgia.^[6,10] Avicenna refers to black seeds in the ‘‘The Canon of Medicine’’, as seeds stimulate the body’s energy and helps recovery from fatigue and dispiritedness. Black seeds and their oil have a long history of folklore usage in Indian and Arabian civilization as food and

medicine.^[6,14] The seeds have been traditionally used in Southeast Asian and the Middle East countries for the treatment of several diseases and ailments including asthma, bronchitis, rheumatism and related inflammatory diseases.^[7] A tincture prepared from the seeds is useful in indigestion, loss of appetite, diarrhoea, dropsy, amenorrhoea and dysmenorrhoea and in the treatment of worms and skin eruptions.^[16] Externally the oil is used as an antiseptic and local anesthetic. Roasted black seeds are given internally to stop the vomiting.^[1,4,6,8,14,15,16]

Scientific researches and pharmacological potentials

The extensive researches using modern scientific techniques were carried out by various researchers on *N. sativa* since it is believed to be a miraculous herb that can cure multiple ailments and disorders. A number of pharmacological actions of *N. sativa* have been investigated in the past few decades.^[4]

Abortifacient.^[1,11,12]

Antibacterial Activity.^[1,4,12]

Antidiabetic Activity.^[1,4,10,11,12,17]

Antispasmodic Activity.^[1,10,12]

Antitumour activity.^[1,12]

Anticarcinogenic^[2] and mutagenic Activity.^[4,10,11,12]

Antihypertensive.^[11,12]

Anticonvulsant.^[1,4,12]

Anxiolytic^[1,4]

Antioxytocic.^[1,4]

Antihyperlipidemic Activity^[2,3,11,12,17,18,19,21,22]

Antinociceptive.^[1,12]

Antioxidant Activity.^[1,2,4,10,11,12]

Analgesic Activity.^[2,4,10,12,18]

Antifertility.^[4,12,20]

Anti inflammatory.^[1,2,4,10,11,12]

Anti microbial.^[2,10,12]

Antifungal Activity.^[1,4,12]

Bronchodilator.^[10,12]

Contraceptive.^[1,4]

Cardioprotective activity.^[4,12]

Diuretic activity.^[1,12]

Gastroprotective.^[1,4,10,12]

Hepatoprotective Activity.^[1,4,10,11,12]

Immunomodulatory Activity.^[1,4,10,12]

Nephroprotective^[1,4,10,11,12]

Neuroprotective Activity^[12]

CONCLUSION

The use of herbal drugs as complementary medicine is prevalent and gaining world wide popularity. Kalonji (*Nigella sativa*) being a prophetic medicine is very beneficial for human being due to its pharmacological actions of the seeds in almost all the disease. Studies have proven that the seeds of *Nigella sativa* are reasonably safe for consumption and they have potential medicinal values. The mechanisms by which the seeds of *Nigella sativa* exert their therapeutic influences is an issue that requires more detailed research. With the increased understanding of the mechanism of its bioactivity, the incorporation of this medicinal herb as complementary medicine into mainstream medical science can be achieved in the future.

REFERENCES

1. Paarakh P M. *Nigella sativa* Linn.-A comprehensive review. Indian journal of natural products and resources, 2010; 1(4): 409-429.
2. Abdulrazzaq M, *et al.* The various effects of *nigella sativa* on multiple body systems in human and animals. *Pertanika journal of scholarly research reviews*, 2016; 2(3): 1-19.
3. Nasir A, Siddiqui MY, Mohsin M. Therapeutic uses of shoneez (*Nigella sativa* Linn.) mentioned in unani system of medicine. *International journal of pharmaceutical and phytopharmacological research*: 1-8.
4. Ahmad A, *et al.* A review on therapeutic potential of *nigella sativa*: a miracle herb. *Asian pacific journal of tropical biomedicine*, 2013; 3(5): 337-352.
5. Goreja WG. *Black seed: nature's miracle remedy*. New York, NY 7 Amazing Herbs Press; 2003.
6. Warriar PK, Nambiar VPK, Ramankutty. *Indian medicinal plants-a compendium of 500 species*. Chennai: Orient Longman Pvt Ltd 2004; 139-142.
7. Khare CP. *Indian medicinal plants*. New Delhi: Springer India (P) Ltd; 2007; 439.
8. Ghani N. *Khazainul Advia*. New Delhi: Idarae kitabul shifa; 2010; 1061-1062.
9. Rafiquddin M. *Kanzul advia mufrida*. Aligarh: University publication unit sarfraz house; 1985; 469-470.

10. Huseini HF, Kianbakht S, Mirshamsi MH, Zarch AB. Effectiveness of topical nigella sativa seed oil the treatment of cyclic mastalgia: A randomized, triple blind, active and placebo-controlled clinical trial. *Planta med* 2011; 82: 285-288.
11. Ansari ZM, Nasiruddin M, Khan RA, Haque SF. Evaluation of efficacy and safety of nigella sativa oil supplementation in patients of chronic kidney disease. *Asian journal of pharmaceutical and clinical research*, 2016; 9(2): 107-110.
12. Hussain DAS, Hussain MM. Nigella sativa (black seed) is an effective herbal remedy for every disease except death- a prophetic statement which modern scientists confirm unanimously: a review. *Advancement in medicinal plant research*, 2016; 4(2): 27-57.
13. Sharma PC, Yelne MB, Dennis TJ. Database on medicinal plants used in Ayurveda. New Delhi; 2005; 420-440.
14. Yarnell E, Abascal K. Nigella sativa: holy herb of the middle East. *Altern Compl Therap*, 2011; 17(2): 99-105.
15. Kabeeruddin H. *Makhzanul mufridat*. New delhi: Ejaz publishing house; 460-461.
16. Padhye S, Banerjee S, Ahmad A, Mohammad R, Sarkar FH. From here to eternity-the secret of Pharaohs: Therapeutic potential of black cumin seeds and beyond. *Cancer Ther*, 2008; 6: 495-510.
17. Najmi A, Haque SF, Naseeruddin M, Khan RA. Effect of Nigella sativa oil on various clinical and biochemical parameters of metabolic syndrome. *International journal of diabetes & metabolism*, 2008; 16: 85-87.
18. Ali BH, Blunden G. Pharmacological and Toxicological Properties of Nigella sativa *Phytotherapy Research* *Phytother Res*, 2003; 17: 299–305.
19. Haseena S, Aithal M, Das KK, Saheb SH. Effect of Nigella Sativa Seed Powder on Testosterone and LH levels in Sterptozotocine Induced Diabetes male Albino Rats. *Journal of pharmaceutical sciences and research*, 2015; 7(4): 234-237.
20. Yaheya M, Ismail M. Therapeutic Role of Prophetic Medicine Habbat-al-Baraka (Nigella sativa L.) - A Review *World Applied Sciences Journal*, 2009; 7(9): 1203-1208.
21. Tasawar Z, Siraj Z, Ahmad N, Lashari MH. The Effects of Nigella sativa (Kalonji) on Lipid Profile in Patients with Stable Coronary Artery Disease in Multan, Pakistan. *Pakistan Journal of Nutrition*, 2011; 10(2): 162-167.
22. Al-Ali A, Alkhawajah AA, Randhawa MA, Shaikh NA. Oral and intraperitoneal LD50 of thymoquinone, an active principle of Nigella sativa, in mice and rats. *J Ayub Med Coll Abbottabad*, 2008; 20(2): 25-27.