

A REVIEW ON FOLKLORE USES AND THERAPEUTIC INDICATIONS OF *NIGELLA SATIVA* – A MIRACLE HERB

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ABSTRACT

The word '*Dravyaguna*' means the science dealing with properties and actions of drugs. It would be necessary, at first, to understand the fundamentals of Ayurveda in general before one can grasp the concepts of *Dravyaguna*. *Nigella sativa* (black caraway, also known as black cumin, nigella, and *kalonji*) is an annual flowering plant in the family Ranunculaceae, native to south and southwest Asia. *Nigella sativa* and its active constituent, thymoquinone, have been documented to exhibit antidiabetic, antiobesity, hypotensive and hypolipidemic properties. This is also revealed that most of the therapeutic properties of this plant are due to the presence of

thymoquinone which is major bioactive component of the essential oil. Seeds and oil have a long history of folklore usage in various systems of medicines and food. The seeds of *N. sativa* have been widely used in the treatment of different diseases and ailments. In Islamic literature, it is considered as one of the greatest forms of healing medicine. It has been widely used as antihypertensive, liver tonics, diuretics, digestive, anti-diarrheal, appetite stimulant, analgesics, anti-bacterial and in skin disorders.

KEYWORDS: *Nigella sativa*, Miracle herb, Ranunculaceae, Thymoquinone, Black seeds, Anti-diabetic, Antioxidant.

INTRODUCTION^[1,2,3]

Medicinal plants have been used for curing diseases for many centuries in different indigenous systems of medicine as well as folk medicines. The seeds of *N. sativa* are widely used in the treatment of various diseases like bronchitis, asthma, diarrhea, rheumatism and

skin disorders. It is also used as liver tonic, digestive, anti-diarrheal, appetite stimulant, emmenagogue, to increase milk production in nursing mothers to fight parasitic infections, and to support immune system. Most of the therapeutic properties of this plant are due to the presence of thymoquinone (TQ) which is a major active chemical component of the essential oil. Nigella oil also contains plant sterols, as well as 25% oleic acid/ 55% linoleic acid, nigellone, and volatile oils including thymol, limonene, and carvacrol.

ETYMOLOGY^[3,21,22,23]

The genus name *Nigella* is a diminutive of the Latin *niger* (black), referring to the seeds.

Table No 1: Scientific Classification.^[1,2,3,4]

Kingdom:	Plantae
<i>Clade:</i>	<u>Angiosperms</u>
<i>Clade:</i>	<u>Eudicots</u>
<i>Order:</i>	<u>Ranunculales</u>
<i>Family:</i>	<u>Ranunculaceae</u>
<i>Genus:</i>	<u><i>Nigella</i></u>
<i>Species:</i>	<u><i>N. sativa</i></u>

Botanical Description^[1,2,3,4,15,18,20]

- **Black Cumin** - plants are hardy annuals that grow from 20 to 60 cm (8 to 24 inches) in height.
- **Leaves & Root** - The branched stems bear fine, deeply divided leaves, and the plant has a developed taproot.
- **Flowers** - The pale blue or white flowers have five petals, numerous stamens, and five or six elongated fused carpels.
- **Seed** - The black triangular or pyramidal seeds are borne in a capsule with five or six segments, each of which terminates in an elongated projection.
- **SOIL** - The plants can grow in a variety of soils and readily reseed, becoming weedy in some areas.

Specific Character of *Nigella Sativa*^[6,7,8,15,18,20]

- ❖ Habitat - terrestrial
- ❖ Flower petal color - NA
- ❖ Leaf type - compound (made up of two or more discrete leaflets)
- ❖ Leaf arrangement - alternate there is one leaf per node along the stem
- ❖ Leaf blade - leaf blade is entire (has no teeth or lobes)

- ❖ Flower symmetry - symmetrical)
- ❖ Number of sepals, petals or **tepals** - five petals, sepals, or tepals in the flower.
- ❖ Stamen number - 13 or more
- ❖ Fruit type - the fruit is dry and splits open when ripe
- ❖ Fruit length - Up to 1.2 mm.

Habitat^[1,2,6,15,17,21]

N. sativa is native to Southern Europe, North Africa and Southwest Asia and it is cultivated in many countries in the world like Middle Eastern Mediterranean region, South Europe, India, Pakistan, Syria, Turkey, Saudi Arabia.

Synonyms^[15,16,21]

- KALA AJAJI-Seeds are black in colour.
- UPKUNCHIKA-Seeds are rugged, curved in nature.
- STHULJEERAKA-Prominent like cumin or bigger than jeeraka.
- PRITHIVIKA- It Is Well Known Due To Its Properties.
- KAALIKA-Black In Colour.
- CARVI-It Accelerates The Kriya Of Sharira & It Protects The Sharira From Its Properties.
- SUGANDHA-Aromatic.
- JARANI,SUSAVI-It stimulates digestive fire and is carminative

Table No 2: Various Synonyms In Nighantu^[9,10,11,12,13,15]

Syn.	D.n	R.n.	Sh.n	B.n.	P.n	M.n	A.n.	K.n
Upkuncha	+	-	-	-	-	-	-	-
Upkunchi	+	-	-	+	+	-	+	-
Kalika	+	-	-	+	-	+	+	+
Upkalika	+	-	-	+	-	+	-	+
Sushvi	+	+	+	+	-	+	-	+
Kunchika	+	-	+	-	-	-	+	-
Kunchi	+	-	+	+	-	+	-	+
Prithvika	+	+	+	+	-	+	+	+
Sthooljeeraka	+	+	+	-	-	-	+	-
Karvi	-	+	-	+	-	+	-	+
Prithvi	-	+	-	+	-	+	-	+
Upkunchika	-	+	+	+	-	+	+	+
Vaashpika	-	-	-	-	-	+	-	+
Varkrishna	-	-	-	-	-	-	-	+

Krishn kaya	-	-	-	-	+	-	-	-
Mangrell	-	-	-	-	+	-	-	-
Dipya	-	+	-	-	-	-	-	-
Kaali	-	+	-	-	-	-	-	-
Sthool kana	-	+	-	-	-	-	-	-
Prathu	-	+	-	+	-	-	+	-
Manogya	-	+	-	-	-	-	-	-
Jarni	-	+	-	-	-	-	-	-
Jeerna	-	+	-	-	-	-	-	-
Taruni	-	+	-	-	-	-	-	-
Kalvaanjika	-	-	-	-	-	-	+	-
Krishna	-	-	-	+	-	-	-	-
Kala ajaji	-	-	-	+	-	-	-	-
Maadhav	-	-	+	-	-	-	-	-
Tarun	-	-	+	-	-	-	-	-

Chemical Composition^[1,2,3,5,6,7,8,9]

The seeds also contain numerous esters of structurally unusual unsaturated fatty acids with terpene alcohols (7%); furthermore, traces of alkaloids are found in the seeds. The seeds also contain a fatty oil rich in unsaturated fatty acids, mainly linoleic acid (50 - 60%), oleic acid (20%), eicodadienoic acid (3%) and dihomolinoleic acid (10%) which is characteristic for the genus. Saturated fatty acids (palmitic, stearic acid) amount to about 30% or less. Commercial nigella oil ("Black Seed Oil", "Black Cumin Oil") may also contain parts of the essential oil, mostly thymoquinone, by which it acquires an aromatic flavor.

Table No 3: Classification In Various Nighantu In Gana/Varg.^[9,10,11,12,13,15,25,26]

Nighantu	Gana/varg	Reference
D.n	Shatpushpadi varg	59-60
K.n.	Aushadhi varg	1186-1188
M.n.	Shunthyadi varg	29-31
P.n.	Shatpushpadi varg	09
R.n.	Pippalyadi varg	63-64
B.n.	Haritakyadi varg	82-85
A.n.	Vatsanabhadi varg	P.no.21-23
Sh.n.	Shatpushpadi varg	P.no.63,238
C.s.	Annpanvidhi adhyaya	307
S.s	Annpanvidhi adhyaya	229-230

Table No 4: Rasapanchaka In Various Nighantu^[9,10,11,12,13,15,27]

Pro	D.n	K.n	M.n	P.n	R.n.	A.n.	B.n.	Sh.n.
Rasa	Katu	Katu Tikta	_	_	Tikta	Katu Tikta	Katu Tikta	_
Guna	_	Laghu Ruksha	Laghu	_	_	_	_	_
Veerya	_	Ushna	Ushna	_	Ushna	Ushna	Ushna	Ushna
Vipaka	Katu	Katu	katu	_	katu	Katu	Katu	Katu

Table No 5: Dosh –Shamakta In Various Nighantu And Texts.^[9,10,11,12,13,15,25,26,27]

Dosh-shamakta	D.n	R.n.	Sh.n	B.n.	P.n	M.n	Ch.s.	K.n	Su.s.
Vaat vardhaka	-	-	-	-	-	-	-	-	-
Pitta vardhaka	+	-	-	+	-	+	-	-	+
Kapha vardhaka	-	-	-	-	-	-	-	-	-
Vaat shamaka	-	+	+	+	+	+	+	+	+
Pitta shamaka	-	-	-	-	-	-	-	-	-
Kapha shamaka	+	+	+	+	+	+	+	+	+
Tridosh shamaka	-	-	-	-	-	-	-	-	-
Aamdosh shamaka	-	+	-	-	-	-	-	-	-

Table No 6: Therapeutic Uses In Various Nighantu And Text.^[9,10,11,12,13,15,26,27]

Karma	D.n	R.n.	Sh.n	B.n.	P.n	M.n	Ch.s.	K.n	Su.s.
Agni deepaka	+	+	+	+	+	+	+	+	+
Ruchi karaka	+	-	+	+	+	-	+	+	+
Sangrahi	-	-	-	+	-	+	-	+	-
Chakshushya	-	-	-	+	-	+	-	+	-
Garbhashaya Vishodhnam	-	-	-	+	-	+	-	+	-
Medhya	-	-	-	+	-	+	-	+	-
Hridya	-	-	+	-	-	-	-	+	-
Paachna	-	+	-	+	+	-	-	+	-
Vrishya	-	-	-	+	-	-	-	-	-
Balya	-	-	-	+	-	-	-	-	-
Sara	-	-	+	-	-	-	-	-	-
Garbhprada	-	-	+	-	-	-	-	-	-
Daurgandhya Naashnam	-	-	-	-	-	-	+	-	-

Table No 7: Therapeutic Indication In Text & Nighantus.^[9,10,11,12,13,15,26,27]

Indications	D.n	R.n.	Sh.n	B.n.	P.n	M.n	Ch.s.	K.n	Su.s
Aadhmana	+	+	-	+	+	+	-	+	-
Ajeerna	+		-	-	-	-	-	-	-
Krimi roga	+	+	-	-	-	-	-	-	-
Chardi	-		-	+	-	+	-	+	-
Gulma	-	+	-	+	-	+	-	+	-
Atisara	-		-	+	-	-	-	+	-
V roga	-	+	-	-	-	-	-	-	-
K vikara	-	+	-	-	-	-	-	-	-
Aamdosha	-	+	-	-	-	-	-	-	-
Jwara	-	-	-	+	-	-	-	-	-

Adulteration^[1,2,3,4,5,7,8]

Nigella seed is available both whole and in ground form. The whole seed is subject to adulteration by onion seeds, because of their similarity. Onion seeds lose viability after one year and such unused seeds are used to adulterate batches of nigella seed. Another form of

adulteration is when the exhausted seed or spent seed after oil extraction is mixed in whole seed or ground form with unprocessed nigella seeds. Essential oil extracted from seeds has also been found to be adulterated with chaff oil. The range of essential oil is 0.5–1.4%. It should contain melangin as the major component, and levels of this compound should not go below 30%. A high ratio of eicosadienoic acid to eicosamonoenoic acid combined with a high level of CO₂ fatty acids, is characteristic of nigella seed oils and could be used to identify genuine oil. The adulterants can be detected through chromatographical techniques.

Propagation^[1,2,3,4,5,6,7,8]

Seed - sow spring or early autumn in situ. The autumn sowing might not be successful in harsh winters. Plants can be transplanted if necessary

Pharmacological Actions of Tq^[1,2,3,4,5,6,7,8,16,19,21]

The extract of herb *N. Sativa* (i.e., thymoquinone) is known to have pharmacological and toxicological properties. It exhibits remarkable antioxidant and anti-inflammatory effects. It shows exceptional anticancer and chemopreventive activity. It can also interact with a variety of proteins and is capable of inhibiting protein–protein interactions. TQ can bind to human bovine serum albumin, α 1-acid glycoprotein, and the phosphoserine/phosphothreonine recognition site of polo-box domain. It blocks the PDB-dependent interaction and inhibits the activity of polo-like kinase 1 (Plk1), thus hindering its localization.

Cultivation^[1,2,3,4,8]

Easily grown in any good garden soil, preferring a sunny position. Prefers a light soil in a warm position. This species is often cultivated, especially in western Asia and India, for its edible seed. The seed is aromatic with a nutmeg scent. A greedy plant, inhibiting the growth of nearby plants, especially legumes.

Harvesting Seed^[1,2,3,4,5,6,7,8]

Black cumin seed has an aroma similar to fennel but lends pungent, nutmeg-like flavor to foods. It is widely used in Middle Eastern cuisine to season rice, curries, breads, pickles and confections. To capture the seeds, cut stems when the seed pods start to dry out a bit and hang upside down in a brown paper bag. As the seeds dry, they drop into the bottom of the bag. Collect the seed and store in an airtight container in a cool, dark place.

Pharmacological Activites^[16,19,21,22]

- ANTIHYPERTENSIVE ANTI DIABETIC
- DIURETIC ANTI CANCER
- IMMUNOMODULATOR ANTI MICROBIAL
- DIGESTIVE ANTI INFLAMMATORY
- ANTI-DIARRHEAL SPASMOLYTIC
- APPETITE STIMULANT BRONCHODILATOR
- ANALGESICS HEPATO-PROTECTIVE
- ANTI-BACTERIAL RENAL-PROTECTIVE
- ANTHELMINTICS GASTRO-PROTECTIVE
- EMMENAGOGUE ANTI-OXIDANT
- GALACTOGOGUE GOOD HEALING POWER

Kalonji Oil^[1,2,3,4,5,6,7,8]

- Cold Press Extraction Method
- Trade Price-180 Rs/50ml
- Uses- Baldness, Headache, Toothache, Nasal Congestion, To Stimulate Metaboism, Relieve In Letharginess, In Beauty Also.

Therapeutic Indication^[17]

- **IRREGULAR FEVER** – kalajaji taken with jiggery controls irregular fever.
- **PILES** – upkunchika is one of the ingredients in takrarista useful in piles.
- **GULMA** – It is also enters into the composition of ksaraguda beneficial in gulma.
- **UDARROGA** – upkunchika participates in the formulations of narayan churna a well known remedy for udar roga.
- **CORYZA** – the power of rohisa, jirka, vacha, tarkari, and tvak, patra, maricha, and upcunchika should be inhaled.
- **FOR EXPELLING PLACENTA** – the paste of devdaru, containing upkunchika is administered to the women.
- **PAIN IN FEMALE GENITALS** – vacha, upkunchika should be ponded with the clear wine and fried with ghee, it should be taken in order to remove pain in female genital organs.

Folklore Uses^[6,7,8]

- ❖ The Prophet Mohammad had described the healing powers of the Black Seeds against a variety of diseases. According to common Islamic and Arabic belief, Habbatul Barakah is a remedy for all ailments (universal healer).
- ❖ In the traditional system of medicine practised in the Arabian Gulf region, Black Seed is recommended for a wide range of ailments, including fever, cough, bronchitis, asthma, chronic headache, migraine, dizziness, chest congestion, dysmenorrhea, obesity, diabetes, paralysis, hemiplegia, back pain.
- ❖ It is quite interesting to note that an aqueous suspension of Black Seed provides a highly significant and dose-dependent protection of gastric mucosa against a variety of necrotizing agents.
- ❖ Nigella as the seed that stimulates the body's energy and helps recovery from fatigue and dispiritedness. It is also included in the list of natural drugs of 'Tibb-eNabavi', or "Medicine of the Prophet (Muhammad)"
- ❖ according to the tradition "holds onto the use of the black seeds for healing all diseases. In the Unani Tibb system of medicine
- ❖ The seeds have been traditionally used in the Middle East and Southeast Asian countries to treat ailments including asthma, bronchitis, rheumatism and related inflammatory diseases, to increase milk production in nursing mothers, to promote digestion and to fight parasitic infections
- ❖ Its oil has been used to treat skin conditions such as eczema and boils and to treat cold symptoms.
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Side Effects^[1,2,3,4,5,6,7,8]

When We Use Kalonji In Large Amount & For A Longer Period These Side Effects Are Seen.

- Allergy To Skin
- Increases The Bleeding
- Slower The Blood Clotting
- Lower The Bp.
- Hypoglycemia
- Stomach Upset

- Vommiting.

Controversy^[6,7,8,17]

- Diff Betwn Onion Seeds And Kalonji Seeds
- Kalonji seeds are not onion seeds. most of us are confused.kalonji seeds is black and triangular and onion seeds are slightly big and flat.
- If chewed, the seeds of *Nigella sativa*, or black seed, taste somewhat like cumin, *Cuminum cyminum* Onion seeds taste nothing like that, more like onion., so one way to know what they are would be to chew a small sample.

Conclusion^[6,7,8]

Herbs are the natural drugs used to regain the alterations made in normal physiological system by foreign organisms or by any malfunctioning of the body. The WHO has already recognized the contribution of traditional health care in tribal communities. It is very essential to have a proper documentation of medicinal plants and to know their potential for the improvement of health and hygiene through an eco friendly system. Medicinal plants are used for therapeutic purpose since the beginning of human civilization. They consists phytoconstituents that exhibits therapeutic potential. According to one of the report about 80% of the world population of the developing and under developed countries relies mainly on medicinal plants. It is quite obvious that the *N. sativa* is widely used in traditional medicinal system and has been reported to possess number of pharmacological activities such as hepatoprotective, anti-inflammatory, antitussive, antifungal and also used to check wounds healing and antibacterial properties. The present review summarizes some important pharmacological studies on *N. sativa* and phytochemical investigations. some important pharmacological studies on *N. sativa* and phytochemical investigations and isolated principles which can be investigated further to get novel molecules in the search of novel herbal drugs.

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