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***Nigella sativa*: A magic herb of pivotal importance**

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Abstract

Medicinal plants have been used for curing diseases for many centuries in different indigenous systems of medicine as well as folk medicines. Moreover, medicinal plants are also used in the preparation of herbal medicines as they are considered to be safe as compared to modern allopathic medicines. Many researchers are focusing on medicinal plants since only a few plant species have been thoroughly investigated for their medicinal properties, potential, mechanism of action, safety evaluation and toxicological studies. *Nigella sativa* (nigella or kalonji), is an annual flowering plant in the family Ranunculaceae. The herb is widely used in the treatment of various disease of human ailment. The present paper deals with the medicinal attributes of the herb.

Key-Words: *Nigella sativa*, Herb, Medicinal uses.

Introduction

Among various medicinal plants, *Nigella sativa* (*N. sativa*) (Family Ranunculaceae) is emerging as a miracle herb with a rich historical and religious background since many researches revealed its wide spectrum of pharmacological potential. *N. sativa* is commonly known as black seed. *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.

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 and immunomodulatory, analgesic, antimicrobial, anthelmintics, analgesics and anti-inflammatory, spasmolytic, bronchodilator, gastroprotective, hepatoprotective, renal protective and antioxidant properties.

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. Black seeds are also used in food like flavoring additive in the breads and pickles because it has very low level of toxicity.

Morphological Features

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. Macroscopically, seeds are small dicotyledonous, trigonus, angular, rugulose-tubercular, 2-3.5mm×1-2 mm, black externally and white inside, odor slightly aromatic and taste bitter.

Chemical Composition

Many active compounds have been isolated, identified and reported so far in different varieties of black seeds. The most important active compounds are thymoquinone, thymohydroquinone, dithymoquinone, p-cymene, carvacrol, 4-terpineol, t-anethol, sesquiterpene longifolene α -pinene and thymol etc. Black seeds also contain some other compounds in

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trace amounts. Seeds contain two different types of alkaloids; *i.e.* isoquinoline alkaloids *e.g.* nigellicimine and nigellicimine-N-oxide, and pyrazol alkaloids or indazole ring bearing alkaloids which include nigellidine and nigellicine. Moreover, *N. sativa* seeds also contain alpha-hederin, a water soluble pentacyclic triterpene and saponin, a potential anticancer agent.

The seeds reported to contain a fatty oil rich in unsaturated fatty acids, mainly linoleic acid and saturated fatty acids (palmitic, stearic acid) amount to about 30% or less. α -sitosterol is a major sterol, which accounts for 44% and 54% of the total sterols.

Biological and therapeutic importance

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 and immunomodulatory, analgesic, antimicrobial, anthelmintic, analgesics and anti-inflammatory, spasmolytic, bronchodilator, gastroprotective, hepatoprotective, renal protective and antioxidant properties. 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. Black seeds are also used in food like flavoring additive in the breads and pickles because it has very low level of toxicity.

Traditional uses

- *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.
- Black seeds and their oil have a long history of folklore usage in Indian and Arabian civilization as food and medicine.
- The seeds have been traditionally used in the treatment of several diseases and ailments

including asthma, bronchitis, rheumatism and related inflammatory diseases.

- 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.
- Externally the oil is used as an antiseptic and local anesthetic.
- Roasted black seeds are given internally to stop the vomiting.

References

1. Khare CP. Encyclopedia of Indian medicinal plants. New York: Springer-Verlag Berlin Heidelberg; 2004.
2. Sharma PC, Yelne MB, Dennis TJ. Database on medicinal plants used in Ayurveda. New Delhi: 2005. pp. 420–440.
3. Goreja WG. Black seed: nature's miracle remedy. New York, NY: Amazing Herbs Press; 2003.
4. Warriar PK, Nambiar VPK, Ramankutty . Chennai: Orient Longman Pvt Ltd; 2004. Indian medicinal plants-a compendium of 500 species; pp. 139–142.
5. Al-Jassir MS. Chemical composition and microflora of black cumin (*Nigella sativa* L.) seeds growing in Saudi Arabia. Food Chem. 1992;45:239–242
6. Nickavar B, Mojab F, Javidnia K, Amoli MA. Chemical composition of the fixed and volatile oils of *Nigella sativa* L. from Iran. Z Naturforsch C. 2003;58(9–10):629–631.
7. Yarnell E, Abascal K. *Nigella sativa*: holy herb of the middle East. Altern Compl Therap. 2011;17(2):99–105.
8. 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.

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