



# Research Journal of Pharmaceutical, Biological and Chemical Sciences

## The Health Benefits of Black Seed (*Nigella sativa*).

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### ABSTRACT

Back ground :*Nigella sativa* seed is a spicy plant which belongs to the family Ranunculaceas.*Nigella sativa* seed and its products are one of the most medicinal plants, the use of them in the field of therapy so old. The ancient Egyptians used *Nigella sativa* in the treatment of many diseases and its widely used in folk medicine. The diseases like cough and bronchial asthma, headache, nasal congestion, toothaches, intestinal worm, menstrual disorder, digestive abnormality, diabetes, hypertension and cancer. The aim of this review was to collect up data available, data focused on the pharmacological and medicinal effects of *Nigella sativa* seeds. We reviewed the literature from 1960-2015.

**Keywords:** *Nigella sativa* seed, oil composition, thymoquinone, pharmacological and medicinal effects.

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### Characterization of *Nigella sativa* linn

*Nigella sativa* L. is an indigenous herbaceous us plant that is more commonly known as the fennel flower plant and belongs to the Butter cup or Ranunculaceal family. *Nigella sativa* seed are not related to cumin or caraway, both of which belong to the umbrelliferea family.

The plant which grow to maximum high of about 60 cm, has finely divided to foliage and blue black seeds. The plant is also known by other names, e.g. balck cumin (English, black. Caraway seed (USA), Al-Habba – Al-Sawdaa, Al-Kammon Al-Aswad or Al-Kammoon Al-Hindy, Habba-tu-El-Baraka (Arabic), Kalobnji (Urdu and Hindi), Krishna Jirika (Sanskrit), Kalajira (Bangali) and Shonaiz (Persian). It grows in the Mediterranean countries and is cultivated extensively in Pakistan and India. The plant has been found to be salt tolerant and may be considered a glycophyte [1]. The spicy seeds from this plant have proclaimed medicinal usage dating back to the ancient Egyptian, Greek and Romans.

In this canon of Medicine Avicenna state "the black seed act as an expectorant, it a stimulates the body's energy and helps recovery from fatigue and dispiritedness [2].

### Chemical Composition and Nutritional Value of *Nigella satival*

Mahfouz and El-Dakhakhny[3] isolated and identified Nigellon which is the pure crystalline active principle isolated from the acidic fraction of the essential of Egyptian *Nigella sativa* seed. It has been found to possess the molecular formula  $C_{18}H_{22}O_4$ .

The major components of Russian and Egyptian *Nigella sativa* seed has been reported in earlier studies.

Bahayanet *al.*[4] studied fatty acid and amino acid composition of *Nigella sativa* seed imported from the Middle East and reported that seeds showed composition of 21.26% protein, 35.49% fat, 5.52 moisture, 5.5% crude fiber, 3.77% ash, 33.96% carbohydrate, 1.06% calcium, 0.014% iron, 0.098% sodium and 0-5.82 % potassium. The proximate and mineral composition showed that the seeds have high protein, fat and calcium content. The fatty acids consist of 56.12% linoleic, 24.64% oleic, 12.08% palmitic, 3.11% stearic, 2.53% eicosadienoic, 0.74% linoleic and 0.16% myristic acids. Traces of few unidentified fatty acids were also found which amount to less than 0.7% of the total fatty acids.

The protein consists of 15 amino acids, it is interesting to note that among the 15 amino acids found, 9 are essential amino acids. The seed protein is rich in arginine, glutamic acid, leucine, phenylalanine and lysine, arginine being the major amino acid.

Outhers[5] reported that the vitamin contents of seeds, particularly those of vitamin B<sub>1</sub> (thiamine), B<sub>6</sub> (pyrodxin) and niacin were found to be high. *Nigella* sees lipids consisted of 8 fractions of glyceride and non-glyceride compounds with triglyceride being the major fraction. It also contained a high level of free fatty acids which makes it easy to so rancid [6]. Some literature found that *Nigella sativa* contains 30 to 40% oil and 20 to 30% protein, 3.7 to 4.7% ash and 25 to 40% total carbohydrates with antioxidants lignans such as saponine, melantin[7].

Fatty acid composition of *Nigella sativa* were C<sub>14</sub>(12.97-13.23%), C<sub>16</sub>(9.47-13.34%), C<sub>18</sub>(15.17-24.15%) and C<sub>18,2</sub> (54.32-70.8%) [8,9].

On the other hand, *Nigella sativa* oil considered as one among he newer sources of edible oil linoleic acid, undoubtelyone of the most important polyunsaturated fatty acids, in human food because of its prevention of distinct heart vascular diseases, it is present in all the seed oil. It was revealed that oleic and linoleic acids are the most abundant monounsaturated and polysaturated fatty acids in all samples respectively. The total MUFA composition of studied species is assigned between 15.17 and 24.15% [10]. *Nigella sativa* exhibited various biological properties including antifungal, antibacterial, antioxidant potentials.

The oil showed higher antioxidant potential in comparison with synthetic antioxidant rapeseed oil made system. The oil exhibited also stronger anti-radical activity against DPPH radiation [11].

### Pharmacological and Medicinal Properties of *Nigella sativa*

The published findings provide clear evidence that *Nigella sativa* seed have long been used in Arab countries as food and as traditional medicine which has effects on various diseases such as asthma, flatulence, polio, kidney stones, abdominal pain [12,13]. Many reports on its biological activities have appeared including immunopotentiality [14], antitumor [15], anti-inflammatory [16,17], anti-hypertension [18,19], hypoglycemia [20], respiratory stimulation [21], antioxytacic-linked [22], anti-bacterial effects [23]. Researchers from Saudi Arabia recently reviewed scientific research on the benefits of using seeds as an herbal medicine. Most of the therapeutic properties of this plant are lined to thymoquinone which is the major bioactive component of the essential oil contained in the seed and seed oil [24].

Scientific research provides clear evidence that both the oil and its active ingredients such as thymoquinone, possess antioxidant effects. This is accomplished by enhancing the oxidant scavenger system, which has a detoxifying effect. The oil and thymoquinone have potent anti-inflammatory effects on several experimental models of inflammation. These include: encephalitis it is (inflammation of the brain and spinal cord after infection [25], *Nigella sativa* oil and certain of tis active ingredients showed a beneficial ability to regulate the immune system. It supported T-cell and natural killer cell – mediated [25]. *Nigella sativa* provides a rich supply of poly-unsaturated fatty acids. These ingredients play a key role in daily health and wellness. They help to regulate the metabolism carry toxins to the skin's surface for elimination, balance insulin levels, regulate cholesterol, improve body circulation and promote healthy liver function. A deficiency in polyunsaturated fatty acid can lead to a wide number of health problems including nervous system disorders, uninhibited growth and skin diseases [26].

### Some Reason why you Need *Nigella sativa* [27]

Many homes to day now embrace the *Nigella sativa* seed oil because of the numerous amazing health benefits embedded in the use of this natural discovery. From HIV/AIDs management to blood/colon/ oral cancer brain damage from lead, heart diseases. Studies have shown the *Nigella sativa* seed oil is an effective antioxidant, antibacterial, and anti-inflammatory remedy. As a result, it is often used to fight infection and strengthen the immune system, which is suitable for treating the following condition [28]:

Headaches.  
Nasal congestion  
Cold and flus.  
Digestion and gastrointestinal problems  
Hair and skin problems.  
Allergies  
Diabetes,

### Dosage Requirements for *Nigella sativa* L [29]

Cancers and Tumors up dated

Take one table spoon of oil mixed with one teaspoon of raw honey 1/2 hours before breakfast.

Cyctic fibrosis.

Massage the chest with black seedsoil. Drink one teaspoon of the oil with honey, three times a day.

Diabetes :

Use the black seed oil mixed with raw honey twice a day. A change in diet is a must with little carbohydrates and no sugar.

Diarrhea:

Mix one teaspoon of the black seed oil with cup of yogurt and drink twice a day.

Dry cough :

1/2 teaspoon of the oil mixed with coffee twice a day.



Flu and cold:

Take one teaspoon of black seed oil with honey in the morning before eating.

General health and well being

Take one spoon of honey and one spoon of black seed mixed every day.

Memory :

Take 1/2 teaspoon of black seed and 1/2 teaspoon of honey three times day.

Rheumatic and back pain:

Heat some of the black seed oil and rub on the area of pain.

Cardiovascular problems

Take 1/2 tea spoon of oil mixed with hot water daily.

Hypertension of high blood pressure.

Take one half teaspoon of the oil each day mixed in some hot water.

Immune system:

Take one teaspoon of the black seed oil every day.

### ***Nigella sativa* (Black seed) uses safety and side Effect**

#### **Safety**

The U.S. Food and Drug Administration does not strictly regulate herbs and supplements. There is no guarantee of strength, purity, safety of products, and effects may vary. You should always read product labels. If you have a medical condition, or other drugs, herbs, or supplements, you should speak with a qualified health care provider before starting a new therapy.

#### **Side effect and warnings**

- Black seed is likely safe when taken by mouth by nonsensitive individual in amounts normally found in food.
- Use cautiously in amounts higher than those normally found in food in patients with immune disorders due to black seed's immune effects.
- Black seed may increase the risk of bleeding. Caution is advised in patients with bleeding disorders or those taking drugs that may increase the risk of bleeding. Dosing adjustment may be necessary.
- Black seed may lower blood sugar levels. Caution is advised in patients with diabetes and those taking drugs, herbs, or supplements that affect blood sugar.
- Black seed may lower blood pressure. Caution is advised in patients with low blood pressure and in those taking drugs, herbs or supplements that affect.
- Drowsiness or sedation may occur. Use caution if driving or operating heavy machinery.
- Black seed may induce growth of the heart similar to that caused by exercise, training, reduce heart rate, cause gastrointestinal complaints (unspecified, cause constipation, or inhibit uterine contractions or conception).
- Avoid with a known allergy or sensitivity to black seed, its constituents, black seed oil, or to member of Raunculaceae family.

#### **RESULTS**

Results of the large number of articles published on pharmacological effects of *Nigella sativa* seed oil / seeds and its extract have anti-inflammatory, antioxidant, antihistamine and immunomodulatory properties has wide spectrum protective effects in various diseases.

## CONCLUSION

The present scientific-based evidence indicated that *Nigella sativa* have protective effects on liver, kidney and gastrointestinal, cardio-vascular and nervous system, as well as beneficial effects on inflammatory, cancer, microbial, diabetes, hyperlipidemia and hypertension. This article review of some of the recent studies that show how *Nigella sativa* seed oil can benefit your health.

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