We are IntechOpen, the world’s leading publisher of Open Access books
Built by scientists, for scientists

5,500
Open access books available

137,000
International authors and editors

170M
Downloads

154
Countries delivered to

12.2%
Contributors from top 500 universities

Our authors are among the
TOP 1%
most cited scientists

WEB OF SCIENCE™
Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com
Chapter

Meticulous Endorsement of Black Seed and Jambolana: A Scientific Review

Nikhat Farhana

Abstract

The repository of traditional, historical and cultural heritage of natural prophylactic medicine to treat different disease, disorder and its ailment is limitless and time-immemorial. As per the hadith narrated by Ibn Abbas (RA), Prophet Muhammad (ﷺ) specifically mentioned about Sulayman (AS) recorded the name and use of many herbal medicinal remedies after construction of his castle (Ibn Asakri’s Mukhtasar Tareekh Dimashq 3.393), in addition to it, Prophet Muhammad (ﷺ) use to recommend 65 different herbal prophylactic medicines which are scientifically proved to be highly effective against almost all types of ailments, among this repository of 65, while prescribing the NS Prophet Muhammad (ﷺ) narrated “use this black seeds regularly it is having the properties to cure all disease (ailment) except death (An authentic hadith narrated by Abu Hurayrah (RA) and recorded by Bukhari, Muslim Ahmad Ibn Majah). This in-depth review specially articulated to elaborate phytochemical, pharmacological and mechanistic approach to bring out the properties of not only NS but in addition, it focusing on the important properties of EJ. Preliminarily to say NS claim to have anti-inflammatory, analgesic, hepatoprotective, neuro-protective, gastro-protective and other useful activity are due to two important constituents Thymoquinone (TQ) and NS oil (NSO). TQ has interaction with human serum albumin. Seeds containing volatile oils mainly Melanthin showed toxicity at larger doses. Whereas, EJ simultaneously proved its effectiveness underutilized fruit, crops are nutritious bearing wide range of pharmaceuticals properties. EJ fruit is highly perishable and is mainly used for the diabetes patients, it is well known as a traditional medicinal plant having essential bioactive compounds which are present in all parts of the plant. The major bioactive compounds present in the EJ roots are phytosterols, flavonoids, carotenoids, myricetin, oxalic acid, gallic acid, citronellol, cyanidin diglucoside, hotrienol, and polyphenols as well as micronutrients having many health benefits. It is also a good source of anthocyanin and effective against numerous health problems and act as chemo-preventive, radioprotective and demonstrating antineoplastic properties. The ripe fruits are pleasant, astringent taste and are eaten either raw or processed into different products mainly vinegar, jam, jellies and squash. The jambolana seed contains alkaloid, jambosine, and glycoside jambolin or antimellin. To be concluded, NS and EJ both bearing similar therapeutic and pharmacological endorsement with different remarkable biological active molecule, which will become future reference to find out the natural way to cure untreatable disease and its disorder such as HIV-Aids, Cancer and recent outbreak, etc. according to narration made by Prophet Muhammad (ﷺ).
Keywords: Ranunculaceae, Myrtaceae, Thymoquinone, flavonoids, pharmaceutical, HIV-Aids, Cancer

1. Introduction

Historical evidences indicates that, herbs and spices have beneficial consequences as medicine to treat different disease and its ailments, primarily they are having food value, apart from this the composition comprised in different herbs and spices to get rid from major and minor disorder associated with the complex organic physiological system, demonstrating benefits as food by scientific mean is challenging, specially, when standards applied to assess the pharmaceutical agents. Pharmaceutical agents are special molecules which were isolated and purified in concentrated forms, whereas food is having in combination, literally in large quantity [1]. The real challenge not here to prove whether herbs and spices as food have healthy benefits but rather figuring out, one of the greatest saying by Abu Huraira (R.A), may Allah be pleased with him, narrated that the Prophet, Muhammed Sallallaahu alaihi wa sallam (May Allah exalt his mention), said: “use this black seed regularly, because it is a cure for every disease except death” [Al-Bukhari and Muslim] [2], secondly we encounter the another black herbs called Jambolana (Black Plum) [3].

2. *Nigella sativa* (black seeds)

*Nigella sativa* belonging to the family *Ranunculaceae* is prominent miraculous and remarkable herb with holistic, historical and religious authenticated endorsement. *NS* stands apart with holds promising phytochemical and wide range of therapeutic potential among the botanical repository of medicinal plants in the world, *NS* is popularly known by the name of black seed. *NS* is native to Southern Europe, North Africa and Southwest Asia and is grown in many countries around the world, including the Middle East Mediterranean region, Southern Europe, India, Pakistan, Syria, Turkey and Saudi Arabia [4].

2.1 Botanical description

*NS* plant germinate, flower, set seed and die all in one. Ultimately reproduce themselves to set of seeds. Grow up to height of 20–30 cm (7.10–11.9 inches) with linear lanceolate leaves. The flowers are very much dedicated bearing 10 to 5 petals with remarkable white, yellow, pale blue. Pink, pale violet in colors. *NS* plants fruits are large & inflated capsules bearing with 3 to 7 united follicles having enormous number of seeds, whereas seeds containing black color with flattened, angular oblong with 0.2 cm long and 0.1 cm wide funnel shaped [5].

2.1.1 *NS* flower taxonomy

- Domine: Plantae
- Sub-domine: Tracheobionta
- Division: Spermatophyta
- Phylum: Magnoliophyta
Meticulous Endorsement of Black Seed and Jambolana: A Scientific Review
DOI: http://dx.doi.org/10.5772/intechopen.99225

- Class Magnoliopsida
- Order: Ranunculales
- Family: Ranunculaceae
- Genus: Nigella
- Species: Sativa

2.1.2 Common names

Wild onion seeds, Funnel flower, Black cumin, Nutmeg flower, Black caraway, black seeds, Devil in the bush, Roman coriander, Roman coriander, Damascene etc.

2.1.3 Synonyms

- **English**: Black seeds, Love-in-a-mist, nutmeg flower, Roman coriander, funnel flower black cumin
- **Arabic**: Habatut Barakha, Shooneez, Habba Sauda, Al-barka
- **Sanskrit**: Krishana-jiraka, Upakunchik
- **German**: schwarzkummel

2.1.4 NS seeds and oil

- Chinese: Pei hei zhong cao
- French: Cheveux de Vénus, Nigelle
- Hindi: Kalonji
- Marathi: Kalonji Jire
- Persian: Siah Dana
- Punjabi: Kalvanji
- Urdu: Kalonji

Moreover, the NS meticulously endorsed by above mentioned taxonomical and botanical descriptions. Indeed, much uncertainty about particular name of NS seed. NS seed is called black cumin, black caraway and black onion seed in particular regions of the continent, such as Central Asia and Northern India, with different botanical and taxonomical description, NS seed or any such seed, apparently, are often the part of the stock, that is commercially available and used as adulterants [6].

2.1.5 Cultivation and collection

NS herb mostly grown during the winter season. It is annually grown on light and heavy soil. The scattering period of seeds in between October–November
and get harvested between April and May. The yield is about 350 kg/acre to 450 kg/acre.

The germination processes of the plant would be delayed if the scattering of seeds on upper soil or deep inside but it should be optimal. It need not be irrigated frequently. When the fruit / capsule turns yellowish, the crop is harvested.

It can be threshed by trampling with a tractor or proper thresher after harvesting and proper drying. The seeds are stored properly in bags or containers after threshing [6].

2.2 Phytochemical description of NS

As mentioned in above point-2, NS bearing ultimately important and valuable amount of phytoconstituent which were extracted, separated, identified and reported and updated up to the limit of extent but still needs to be explored, where in contemplation to retrieve the relevant documentary evidence leads to figure out the following valuable constituents, such TQ (48%) in 25 gm, thymohydroquinone, dithymoquinone, p-cymene (15%), carvacrol (12%), 4-terpineol (7%), tanethol (5%), sesquiterpene longifolene (1 to 8%), thymol & α-pinene etc. Seeds contain dual different types of alkaloids called iso-quinoline alkaloids (indazole ring bearing alkaloids are nigellicine, nigellicidine-N-Oxide & pyrazole alkaloids). NS seeds are also contain α-hederin which is water soluble pentacyclic triterpene and saponin (potential anticancer agent). The potential pharmacological activity of NS seeds is mainly due to Quinine constituents, whereas thymohydroquinone is most abundant one. NS seeds also contains micro & macromolecules that are, carbohydrates-28%, proteins-27%, fats-25%, crude fibers-9%, total ash-5%, Vitamins & minerals like Cu, P, Zn and Fe etc.: unsaturated fatty acids like linolic acid-60%, oelic acid-20%, eicodadienoic acid-4% & dihominolenic acid-10%; saturated fatty acids are present nearly about less than 30% (palmitic & stearic acid), apart from this NS also embedded with Other constituents such as α-sitosterol 44 to 54% of total sterols, Tunisian stigmasterol 6.8 to 20.92% of total sterols, the above mentioned constituents were reported apart from this some structural analysis also documented in the literatures these structures mentioned in Figure 1 [7].

2.2.1 Reported constituent and its structures of NS

Some important steroidal monomers also reported from NS seed are nigel-lone, avenasterol-5-ene, avenasterol-7-ene, campesterol, cholesterol, sitrostadienol, obtusifoliol, lophenol, stigasterol, stigmasterol-7-ene, β-amirn, butyrosperrmol, cycloartenol, 24-methylene-cycloartenol, taraxerol, tirucallol, 3-O-[-β-D-xylopyranosyl(1 → 3)-α-L-rhamnopyranosyl(1 → 2)-α-L-arabinopyranosyl]-28-O-[α-L-rhamnopyranosyl (1 → 4)-β-D-glucopyranosyl(1 → 6)-β-D-glucopyranosyl]-hedera-genin, up to 1.6%-Volatile oil, fatty oil-41.6%, olic acid,
Figure 2.
Reported bioactive components of NS.
C15 esters of unsaturated fatty acid with higher terpenoids,, esters of dehydrosteric-
acid & linolic acid, aliphatic alcohols like melanthin, melanthigenin etc, moreover
to endorsed it also contain bitter constituents with tannin, resin, protein, reducing
sugars like saponine, 3-O-[β-D-xlyopyranosyl, (1 → 2)-α-L-rhambopyranosyl,
(1 → 2)-β-D-glucopyranosyl]-11-methoxy-16, 23-dihydroxy-28-methyl-olean-
12-enoate, stigma-5, 22-diene-3-β-D-glucopyranoside, cycloart-23-methyl-7,20,22-
triene-3β, 25-diol, negellidine-4-O-sulfite, N-amines A3, A4, A5, C & A1, A2, B1
& B2 were found in seeds of NS. Hence it was assumed that, because of presence
of above-mentioned bioactive constituents, NS stands apart with special category
of medicinal specie, with infinite number of medicinal properties to manage
bronchitis, diarrhea, rheumatism, asthma, skin disorders, it also acts as liver tonic,
anti-diarrheal, appetite stimulant, digestive disorders. It also beneficial to increase
milk production in nursing mothers, it also utilized to fight with parasitic infec-
tions, immunity system will be strengthened by regular utilization of NS seeds. In
addition to above NS seeds are also used in food as additives, especially flavoring
agent in bread and pickles coz low level of toxicity value. The NS seeds and oil
also preferred in treatment of worm infestation, skin eruption, antiseptic, eternal
anesthetics & roosted seeds of NS given internally to stop vomiting (Figure 2) [8].

3. *Eugenia jambolana* (black plum)

Next to NS another herbs which is bearing identical pharmacological proper-
ties with extra ordinary source of natural remedies and therapeutic application to
treat different disease and its aliment, mid-nineteenth century was the era, which
came up, with its first scientific evidence, as antidiabetic properties, apart from this
the medicinal values endorsed in the ayurvedic, Unani, siddha and other folklore
system of medicine [9].

3.1 Botanical and taxonomical description

*Eugenia jambolana* (EJ) or *Syzygium cumini* (L) Skeel was evergreen plant
which grows up to 25 meters which is estimated up to 80 feet tall, it having
grayish white steam with coarse & discolored lower bark, leaves are simple,
elliptic, opposite to oblong, glossy smooth and somewhat leathery, midrib of
the leaves is prominent yellowish, with 5 to 15 cm long and 2 to 8 cm broad,
the base of the leaves are cuneate or round; apex is short, rounded or obtuse;
edges are toothed; stalk is slender light yellow; veins are fine, close together
parallel and gland are dotted. The petals adhere and fall together as a small
disk. The stamens are many and almost the same length as calyx. The fruits are
ovoid, 1-seeded berry, with a length of 2 centimeters (0.8 inch), dark purple
red, shiny, with white to lavender flesh, fruit are oval to elliptic, length from
1.5 to 3.5 cm, dark purple to black in color, taste of the fruit is the combination
of sweet, mildly sour with astringent flavor, it tends to color the tongue purple.
Because of the dark violet color of the fruit it resembles to the olive tree fruits
both shape and weight [10].

3.1.1 Taxonomical description

Kingdom: Plantae.
Subkingdom: Viridiplantae.
Infrakingdom: Streptophyta.
Division: Tracheophyta.
Subdivision: Spermatophytina.
Infradivision: Angiospermae.
Class: Magnoliopsida.
Superorder: Rosanae.
Order: Myrtales.
Family: Myrtaceae.
Genus: Syzygium.
Species: Cumini.
Scientific Name: Syzygium cumini (L) Skeel.

3.1.2 Common names

3.1.3 Synonyms

3.1.4 Cultivation and collection of EJ
EJ was tropical & subtropical plant grows up to 2,000 meters in the region where annual day time temperature ranges from 20 to 32°C & it tolerate 12 to 48°C, mature growth of the plant will be affected at -2°C lower, whist youngest growth is affected at -1°C. The plant grows well at annual rainfall in the range 1500 to 6,000 mm but tolerates 800–9900 mm. EJ can withstand a dry season of up to 7 months, where it prefers a sunny position, the pH prefer to range 5.5 to 7. The plants are moderately shade-tolerant, especially when young [12]. The

![Figure 3.
Major bioactive constituents of jamun and its benefits.](image-url)
versatile plant will grow on wide range of soils, even in shallow rocky soils where provided rainfall is maximum to tolerate prolonged flooding, once established, it tolerates drought in dry sites, the plant confine itself to the vicinity of water-courses & it tolerates quite strong winds, it sow-self freely and become serious pests in pasture.

In Florida Ej plant is listed as undesirable fast-growing plant, seedlings may reach up to 4 meter in 2 Years. This tree coppices remarkably well, with vigorous shoots, in large number, with minor and major stumps alike, the coppice which were stands in streams, will grew up to 4.6 meter in 4 years, and the raw material of the plant can be collected in rainy seasons to get good amount of bioactive constituents [13].

3.2 Phytochemical description of Ej

Ej is found to be rich in tannins, alkaloids, carbohydrates, flavonoids, sterols, glycosides, and among other phytoconstituents in different parts of the tree. There are many families of phytochemicals and they help the human body in a variety of ways. Phytochemicals can protect (Figure 3) human from diseases. Phytochemicals are nonnutritive plant chemicals that have protective or disease preventive properties. The fruits produce and determine the physical-chemical and sensory characteristics of light jambolan jelly. This fruit has intense purple color, which gave the jellies - both standard and light - a quite attractive visual aspect. The phytochemical analysis of ethanol extract of Jamun stem bark, leaf, seed and fruit pulp showed the presence of alkaloids, anthraquinone glycosides, flavonoids, tannins, saponins, phenols, cardiac glycosides, terpenoids, phytosterols, steroids and amino acids in all extracts. Terpenoids and phytosterols were absent in the leaf extract. The seeds are rich in protein and calcium. The seeds contain both micro & macromolecules as in NS. Ej also contines fats and oil such as tannins-19%, ellagic acid-2%, glycoside, jambo-line, starch, myrcyl alcohol in un-saponified fraction in small quantity that is 0.05% of pale yellow oil with specific gravity 20:0.926, [α] D- 5.420. The essential oils isolated from the freshly collected leaf (accounting for 82% of the oil), stem, seed, fruits contain α-Pinene, camphene, β-Pinene, myrcene, limonene, cis-ocime, trans-ocime, steruclic and vernolic acid, literature reported that huge quantity of malic acid present in fruits, i.e. thrice the weight of the fruit (0.59% wt of fruit), whereas oxalic acid present in minor amount but Gallic acid and tannin accountable for astringent taste of the fruit. The purple color of fruit is due to Cyanidin diglycosides, fruits are reach source of suger-9%, non-reducing sugars-10%. The fruits also contain monomeric sugar units such as glucose, fructose, mannose, galactose & mineral constituents were also reported to be present (mg/100 g of edible pulp) are Ca, Mg, Fe, Na, K, and Cu. The vitamins present (in 100 g of edible pulp) are vit. A, 80 IU; thiamine, 0.03 mg, riboflavin, 0.01 mg; nicotinic acid, 0.2 mg; vit. C, 18 mg; choline, 7 mg; folic acid, 3 μg. The stem bark contain friedelin, kaempferol, ellagic acid, gallotannin, betulenic acid, βsitosterol, eugenin. The leaves contain pheno- nolic content like ferulic acid, catechin, also, n-dotricontanol, myrcetin, mycaminose, quercetin, annic acid, tocopherol and acetylated flavonol glycoside. The flowers contain oleanolic acid and other triterpenoids also acetyl oleanolic acid (0.3%) melting point (260–262°C), Eugenia- triterpenoid A (0.5%) and Eugenia triterpenoid B (0.3%). The roots contain myricetin 3-O-glucoside and myricetin 3-O-robinoside. Reported constituents (Figure 4) structures from different part of plant [14].
3.2.1 Reported constituent and its structure of EJ

![Constituents from Eugenia Jambolana](https://example.com/eugenia-jambolana-constituents.png)

Figure 4. Constituents from Eugenia Jambolana.

4. Endorsed pharmacological descriptions of NS and EJ

4.1 Pharmacological properties of NS seeds and oil

NS seeds and oil has been broadly utilized to cure different disease & its ailments associated with, leaving physiological system, which was proved by adopting modern scientific methodology. The collected research repository from different sources with regardless of time, focusing the activity done on NS, worldwide form the centuries NS seeds and oil traditionally utilized as therapeutic medicine, in Indian system of medicine (Unani & ayurvedic) the pharmacological applications are endorsed [15], further more to say our Prophet Muhammed (ﷺ) advocated the importance in one of his saying that “NS seeds is
remedy for all disease accept death” on this hadith NS considered as greatest
healing medicine available in the form of Herbs and species, further recommendation
of use was endorsed in Tibb-e-Nabwi (Prophetic Medicine). NS bearing
wide range of therapeutic & pharmacological activity such as diuretic, antidiabetic, anti-hypertensive, analgesic, immunomodulatory, antimicrobial, anthelmintic, anti-inflammatory, spasmylytic, fever, influenza, eczema, cough, headache, paralysis, hemorrhage, amenoria, anorexia, bronchodilator, GIT protective, Hepatoprotective, renal treatment and antioxidant, skin disease
[16], the activity of the NS seed is due to the presence of thymoquinone (TQ )
which is major bioactive component NS oil. As already mentioned NS seeds are
having food value hence it does not shows any adverse effect, TQ having potent
anti-microbial properties including Gram +Ve and Gram -Ve bacteria [17], it also
effective in viruses, parasites schistosomes and fungal infections.

The efficacy of NS seeds and TQ are variable and depend on target species. And
other study reported the use of seeds and oil to control the symptoms of COVID-19
in combination with crude extract of EJ [18].

4.2 Pharmacological properties EJ

The second herbs which is having similar pharmacological properties was
Eugenia jambolana (EJ), which is excellently prominent herb which utilized by
ancient people of different continent to combat with the deficiency's associated
with physiological system apart from this the importance of this plant is endorsed
in the ancient scriptures like Siddha, Ayurveda and Unani medication for its thera-
peutic potentials [19].

The entire plant is used in various traditional system of medicine in India and
other parts of the continent around the globe. However, the leaves and bark are
regarded as most significant part. In Ayurveda, the bark is acrid, sweet, digestive
and astringent to the bowels, anti-helminths. Besides it is used to cure sore throat,
bronchitis, asthma, thirst, biliousness, dysentery, blood purifier in ulcer treatment.
In Unani system of medicine EJ Leaf ash is used to strengthen teeth gums, EJ seeds
are used as astringent, diuretic and also used to stop urinary discharges. The bark of EJ
having strong antidiabetic properties. The siddha system of Indian medicine
utilizes Jambolana seeds for hematinic, thermo-regulate, the traditional medicine of
Madagascar’s the Jambolana seeds are utilized to regenerate the β-cells of pancreas
and leaves are used by women to contract vagina after delivery, reduce mucus and
odors [20].

5. Comparative pharmacological properties

The uniform resemblances of pharmacological application both the species have
been extensively analyzed with regardless of time, and tabulated in Table 1, the
aim of the study, to put the researcher to focus on the beneficiary effect of bioactive
constituents present in both the medicinal plants.

6. Conclusions

In a nutshell, both the species having identical pharmacological properties,
bearing with different and rich source of phytoconstituents, currently, todays era
getting conscious about the utilization of herbal medicaments, hence it was the
preliminary choice of consumer world-wide. Otherwise, the traditional medicines
<table>
<thead>
<tr>
<th>S.N.</th>
<th><strong>Nigella sativa</strong> (black seed)</th>
<th>Uniform resemblances of both species</th>
<th><strong>Eugenia jambolana</strong> (black plum)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parts of BS</td>
<td>Composition of constituent</td>
<td>Activity</td>
</tr>
<tr>
<td>1.</td>
<td>Seeds</td>
<td>α-Hedrin, Steryl-glucosides, Acetylsteryl-glucoside</td>
<td>Anti-inflammatory</td>
</tr>
<tr>
<td>2.</td>
<td>Oil</td>
<td>Nigelicimine, Nigellidine, Nigellimine-N-oxide</td>
<td>Cardiovascular actions</td>
</tr>
<tr>
<td>3.</td>
<td>Seeds</td>
<td>Arginine, Glutamic acid, Leucine, Lysine, Methionine, Tyrosine, Proline And Threonine</td>
<td>Anti-hyperlipidemic</td>
</tr>
<tr>
<td>4.</td>
<td>Seeds</td>
<td>Palmitic acid (12.5%), Stearic and Myristic acid (30%).</td>
<td>Hypoglycemic effects</td>
</tr>
<tr>
<td>S.N</td>
<td><strong>Nigella sativa</strong> (black seed)</td>
<td>Uniform resemblances of both species</td>
<td><strong>Eugenia jambolana</strong> (black plum)</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------</td>
<td>---------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td></td>
<td>Parts of BS</td>
<td>Composition of constituent</td>
<td>Activity</td>
</tr>
<tr>
<td>5.</td>
<td>Seeds</td>
<td>Esters Of Linoleic 1 Sa Caindd, N'Tiann Ngilny.C</td>
<td>Antinociceptive effects</td>
</tr>
<tr>
<td>6.</td>
<td>Seeds</td>
<td>Enoate, Stigma-5, 22-Dien- 3-B-D-Gluco.</td>
<td>Anti-oxytocic potential</td>
</tr>
<tr>
<td>7.</td>
<td>Seeds</td>
<td>6-Methoxy-Coumarin, Hydroxy-Coumarin, 7-Oxy-Coumarin</td>
<td>Gastro-protective effects</td>
</tr>
<tr>
<td>8.</td>
<td>Seeds</td>
<td>Cycloeucalenol, Cycloartenol, Sterol Esters</td>
<td>Neuroprotective action</td>
</tr>
<tr>
<td>9.</td>
<td>Seeds</td>
<td>Arginine, Glutamic Lysine, Methionine, Nephro-protective effect</td>
<td>NSO acts in the kidney as a potent scavenger of free radicals</td>
</tr>
<tr>
<td>10.</td>
<td>Seeds</td>
<td>Almitoleic acid, β-Sitosterol, α-Sitosterols (44–54%),</td>
<td>Anti-schistosomiasis</td>
</tr>
<tr>
<td>11.</td>
<td>Seeds</td>
<td>Tyrosine, Proline and Threonine</td>
<td>Anxiolytic effect</td>
</tr>
<tr>
<td>S.N</td>
<td><strong>Nigella sativa</strong> (black seed)</td>
<td>Uniform resemblances of both species</td>
<td><strong>Eugenia jambolana</strong> (black plum)</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------</td>
<td>-----------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>12.</td>
<td>Seeds</td>
<td>Almitoleic acid, β-Sitosterol, αSitosterols (44–54%), Cycloartenol, Sterol</td>
<td>Anti-malarial Effects</td>
</tr>
<tr>
<td>13.</td>
<td>Seeds</td>
<td>Almitoleic acid, β-Sitosterol, αSitosterols (44–54%), Cycloeucalenol,</td>
<td>Anti-parastic Effects</td>
</tr>
<tr>
<td>14.</td>
<td>Seeds</td>
<td>Cycloartenol, Sterol Ester and Sterol Glucosides</td>
<td>Influence on blood</td>
</tr>
<tr>
<td>15.</td>
<td>Seeds</td>
<td>Cycloeucalenol, Cycloartenol, Sterol Ester and Sterol Glucosides</td>
<td>Treatment of Acne</td>
</tr>
<tr>
<td>S.N</td>
<td><strong>Nigella sativa</strong> (black seed)</td>
<td><strong>Uniform resemblances of both species</strong></td>
<td><strong>Eugenia jambolana</strong> (black plum)</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------</td>
<td>------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td></td>
<td>Parts of BS</td>
<td>Composition of constituent</td>
<td>Parts of BP</td>
</tr>
<tr>
<td>17</td>
<td>Seeds and oil</td>
<td>Almitoleic acid, β-Sitosterol, αSitosterols (44-54%)</td>
<td>Effect on reproductive system</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The uptake of 1 ml/kg/day of black cumin oil enhances the release of sexual hormones that stimulated the increase protein production of liver enzymes, platelets number and in the blood it diminishing the level of cholesterol present in serum. <em>Nigella sativa</em> oil possess anti-oxidative activities to neutralize the damage in the epididymal sperm characters brought about by hydrogen peroxide (H2O2) treatment. Crude extract.</td>
</tr>
<tr>
<td>18</td>
<td>Seeds</td>
<td>Almitoleic acid, β-Sitosterol, αSitosterols (44-54%)</td>
<td>Effect on respiratory system</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In Saudi Arab and neighboring nations Kalonji seeds and oils are commonly utilized for the cure of asthma. Carbonyl polymer of thymoquinone (nigellone) ends up being an incredible preventive agent for both bronchial asthma and asthmatic bronchitis. Essential oil can be utilized as probable respiratory energizer if thymoquinone is eliminated.</td>
</tr>
<tr>
<td>19</td>
<td>Seeds</td>
<td>Sterol Esters and Sterol Glucosides</td>
<td>Anti-bacterial Activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>Nigella sativa</em> oil have shown great properties against bacterial specie that are producing wound infections. The oil provided great preventing impacts on <em>Staphylococcus Aureus</em> and Streptococcus species. Thymohydroquinone was separated from the essential oil known to possess higher actions against gram+ive bacteria.</td>
</tr>
<tr>
<td>20</td>
<td>Seeds and oil</td>
<td>Cycloartenol</td>
<td>Anti-fungal Effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The essential oil of Kalonji of various backgrounds has accounted for to have adequate inhibitory activity against disease causing strains of: yeasts, dermatophytes and Non-dermatophytic filamentous parasites alongside aflatoxin-creating organisms.</td>
</tr>
<tr>
<td>21</td>
<td>Seeds and oil</td>
<td>Cycloeucalenol, Cycloartenol Sterol</td>
<td>Antiallergic effect</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Act on H1 and H2 receptors</td>
</tr>
</tbody>
</table>
Table 1. Glimpse of phytochemical and pharmacological endorsement of both the species.

<table>
<thead>
<tr>
<th>S.N</th>
<th>Nigella sativa (black seed)</th>
<th>Uniform resemblances of both species</th>
<th>Eugenia jambolana (black plum)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parts of BS</td>
<td>Composition of constituent</td>
<td>Activity</td>
</tr>
<tr>
<td>22.</td>
<td>Seeds and oil</td>
<td>Thymoquinone, dithmoquinone, thymohydroquinone, nigellone, thymol</td>
<td>Anti-cancer</td>
</tr>
<tr>
<td>23.</td>
<td>Seeds</td>
<td>Thymoquinone, dithmoquinone, thymohydroquinone nigellone</td>
<td>COVID-19 pandemic</td>
</tr>
</tbody>
</table>
are still occupying remedy-kingdom in particular area of research. Inherent and varied activities with meticulously indorsed phytoconstituents from both the species is triggering zone to the drug research, whereas this chapter is entirely dedicated to bring out the best from research crafted by different scholars. NS is one of the most important medicinal herbs with considerable commercial value, the valuable Phytoconstituents bearing by these herbs is commendable and also the gap in research to fucose on, merely the principal constituents responsible for activity are the derivatives of thymoquinone (TQ), as evident by various scientific studies support its safe use for the long-term traditional food and medicinal purposes.

To date, number of studies showed that, EJ is evergreen tree, having food value, which provide remarkably diversified therapeutic application, to treat different disease and its disorder associated with physiological system. The studies suggested that the major constituents responsible for the activity are flavonoids, anthocyanins, carotenoids, essential oil, terpenes, tannins and phenolic compounds.

To jot down, NS and EJ having wider safety margin and praiseworthy therapeutic activity, against sustainably cure to different bacteria and virus, this era of treatment require the molecules isolated from natural sources, whereas the worldwide ban of antibiotic, steroidal hormones and outbreak of covid-19, this candidate will prove its effectiveness.

Acknowledgements

Author immensely grateful to the management of AIKTC and the book publishing family for giving me the opportunity to become a part of this novelty work. Last but not least my heartfelt thanks to Librarian of AIKTC for guidance support. I never deny the support and love of my children and family for providing me the quality time to draft this chapter.

Conflict of interest

The author declared no conflict of interest.

Notes/Thanks/Other declarations

Thanks to publishing house for giving me the opportunity to contribute.

Acronyms and abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS</td>
<td>Nigella sativa</td>
</tr>
<tr>
<td>EJ</td>
<td>Eugenia jambolana</td>
</tr>
<tr>
<td>TQ</td>
<td>Thymoquinone</td>
</tr>
<tr>
<td>NSO</td>
<td>Nigella sativa oil</td>
</tr>
<tr>
<td>DPPH</td>
<td>2,2-diphenyl-1-picrylhydrazyl hydrate</td>
</tr>
<tr>
<td>LOO</td>
<td>lipid peroxyl radicals</td>
</tr>
<tr>
<td>FRAP</td>
<td>Ferric reducing antioxidant power</td>
</tr>
<tr>
<td>GAE</td>
<td>Gallic acid equivalent</td>
</tr>
<tr>
<td>CE</td>
<td>Catechin equivalent</td>
</tr>
<tr>
<td>TAE</td>
<td>Tannic acid equivalent</td>
</tr>
</tbody>
</table>
Meticulous Endorsement of Black Seed and Jambolana: A Scientific Review
DOI: http://dx.doi.org/10.5772/intechopen.99225

AGEs  Acute gastroenteritis
CVD  Cardio Vascular Disease
AMD  Age Related Macular Degeneration

Author details
Nikhat Farhana¹,²

¹ Anjuman-I-Islam’s Kalsekar Technical Campus, University of Mumbai, Mumbai, India
² Department of Pharmaceutical Chemistry, AIKTC-SoP, Mumbai University, Mumbai, India

*Address all correspondence to: nik.nida13ada25@gmail.com

© 2021 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.
References


[9] Sharma D. Chapter - 3 Health Benefits of Syzygium cumini (Jamun) Seeds Chapter - 3 Health Benefits of Syzygium cumini (Jamun) .... Chapter - 3 Health Benefits of Syzygium cumini (Jamun) Seeds Authors Master’s Student, Department of Food, Nutrition and Dieteti. 2020;(December).


