**Black seed (Nigella sativa Linn.)**

**Introduction**

Black seed, also known as Nigella sativa, has been used for centuries for various medical reasons. It's well-known in Islam and Christianity because it's mentioned in their religious books. This plant has been used to treat many illnesses like asthma, fever, and inflammation. Scientists have studied it and found that it contains helpful chemicals and has many health benefits, like fighting diabetes, cancer, and infections. This review will give an easy-to-understand overview of what's in black seed and how it can help our health. It's a useful guide for scientists, researchers, and doctors who want to know more about this special plant.

### **Scientific name and classification**

Plant family: Ranunculaceae

**Chemical constituent of *N. sativa.***

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| --- | --- | --- | --- |
| Group | Sub Group | ***Active constituents*** | IUPAC Name |
| Fixed oil | Unsaturated fatty acids | Oleic acid | (Z)-9-Octadecenoic acid |
| Linoleic acid | (9Z,12Z)-Octadeca-9,12-dienoic acid |
| Dihomolinoleic acid | (8Z,11Z,14Z)-Octadeca-8,11,14-trienoic acid |
| Eicodadienoic acid | (11Z,14Z)-Eicosa-11,14-dienoic acid |
| Saturated fatty acids | Palmitic acid | Hexadecanoic acid |
| Stearic acid | Octadecanoic acid |
| Terpenes | Aliphatic | Thymoquinone | 2-Isopropyl-5-methyl-1,4-benzoquinone |
| p-cymene | 1-Methyl-4-(1-methylethyl)-benzene |
| α-pinene | (1S,5S)-2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene |
| Dithymoquinone | 2-Isopropyl-5-methyl-1,4-benzoquinone |
| Thymohydroquinone | 5-Methyl-2-[(propan-2-yl)oxy]cyclohexa-2,5-diene-1,4-dione |
| Carvacrol | 5-Isopropyl-2-methylphenol |
| Carvone | (R)-(+)-2-Methyl-5-(1-methylethenyl)cyclohex-2-enone |
| Limonene | 1-Methyl-4-(1-methylethyl)-cyclohexene |
| 4-terpineol | 4-Methyl-1-(propan-2-yl)cyclohex-3-en-1-ol |
| Citronellol | 3,7-Dimethyloct-6-en-1-ol |
| Anethol | 4-Methoxyphenylprop-1-ene |
| Alkaloids | Isoquinoline alkaloids | Nigellicimine | (2E,4E,6E,8E,10E)-3,7-Dimethylundeca-2,4,6,8,10-pentaene |
| Nigellicimine N-oxide |  |
| Pyrazole alkaloids | Nigellidine | (2E,6E,10E)-3,7,11-Trimethyltrideca-2,6,10-triene |
| Nigellicine | (2E,4E,6E,8E,10E)-3,7-Dimethylundeca-2,4,6,8,10-pentaene |
| Coumarins | Methoxy coumarin | 6-methoxy-coumarin | 6-Methoxycoumarin |
| Hydroxy coumarin | 7-hydroxy-coumarin | 7-Hydroxycoumarin |
| Oxy coumarin | 7-oxy-coumarin | 7-Oxycoumarin |
| Saponins | Steroidal | Alpha hedrin |  |
| Triterpenes | Steryl glucosides |  |
| Acetyl-steryl-glucoside |  |
| Flavonoids | Flavonoidal pigment | Quercetin | 3,3',4',5,7-Pentahydroxy-2-(3,4-dihydroxyphenyl)-4H-chromen-4-one |
| Flavonoidal glycoside | Kaempferol 3-glucosyl galactosyl glucoside |  |
| Quercetin 3-galactosyl glucoside |  |
| Trigillin quercetin-3-glucoside |  |
| Phenolics | Acidic phenolics | Vanillic acid | 4-Hydroxy-3-methoxybenzoic acid |
| Hydroxybenzoic acid | 4-Hydroxybenzoic acid |
| Syringicacid | 4-Hydroxy-3,5-dimethoxybenzoic acid |
| p-cumaric acids |  |
| Amino acids | Essential amino acids | Valine | 2-Amino-3-methylbutanoic acid |
| phenylalanine | 2-Amino-3-phenylpropanoic acid |
| threonine | 2-Amino-3-hydroxybutanoic acid |
| methionine | 2-Amino-4-(methylthio)butanoic acid |
| histidine | 2-Amino-3-(1H-imidazol-4-yl)propanoic acid |
| tryptophan | 2-Amino-3-(1H-indol-3-yl)propanoic acid |
| leucine | 2-Amino-4-methylpentanoic acid |
| isoleucine | 2-Amino-3-methylpentanoic acid |
| lysine | 2,6-Diaminohexanoic acid |
| Metals and trace elements |  | Calcium |  |
| iron |  |
| potassium |  |
| Phosphorus |  |
| zinc |  |

*Reference:*

*Ahmad MF, Ahmad FA, Ashraf SA, Saad HH, Wahab S, Khan MI, Ali M, Mohan S, Hakeem KR, Athar MT. An updated knowledge of Black seed (Nigella sativa Linn.): Review of phytochemical constituents and pharmacological properties. J Herb Med. 2021 Feb;25:100404. doi: 10.1016/j.hermed.2020.100404. Epub 2020 Sep 19. PMID: 32983848; PMCID: PMC7501064.*