**Benefits of Basil Seeds for Health**

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**ABSTRACT :-**basil seeds are a very promising dietary supplement that are packed with additional nutrients and health-promoting compounds. Understanding Ocimum basilicum’s potential health benefits was the goal of this investigation. It also lists a few of the negative consequences of basil seeds.

**INTRODUCTION:-** Basil seeds are a great source of phytochemicals that have major nutritional, antioxidant, and health advantages. Scientifically speaking, sweet basil is known as Ocimum basilicum L., and it is a member of the Lamiaceae or Labiatae family. Around the world, people have long planted basil as a decorative, therapeutic, flavoring, and ceremonial herb. Despite being found all over the world, its primary distribution is in the tropical regions of Central and South America, Africa, and Asia (Paton et al., 1999) .

. It is grown in vast amounts in various parts of India and Iran. Dietary fiber, vitamin K, iron, protein, phytochemicals, polyphenolic compounds, orientin, vicentin, and other potent antioxidants are a few of the main active components of basil seeds.Ocimum species secondary metabolites have remarkable biological activity and exhibit anti-inflammatory, antioxidative, bactericidal, fungal, repellent, antidiarrheic, chemopreventive, and radioprotective properties (Opalchenova and Obreshova, 2003; Lukmanul Hakkim et al., 2009; Runyoro et al., 2010).

 When dried, basil seeds have a tear-shaped form and are entirely black (Hosseini-Parvar et al.,2010).When dried, basil seeds have a tear-shaped form and are entirely black (Hosseini-Parvar et al., 2010).It is conventional wisdom that using basil seeds for medicinal purposes can help with digestion, blood sugar regulation, weight loss, body cooling, stress relief, blood pressure lowering, cholesterol reduction, and inflammation reduction.

 Basil seeds are widely utilized as a source of nutritional fiber and for aesthetic purposes in drinks (sarbath) and ice desserts (Falooda) throughout much of Asia. Basil seeds have long been used in traditional medicine to treat a variety of conditions, including inflammations, dyspepsia, diarrhea, and colic ulcers. Other names for sweet basil seeds are Falooda, Tukamaric, and Sabja. Ocimum basilicum L. seeds have a polysaccharide coating that causes the outer pericarp to expand into a gelatinous mass when submerged in water (Azuma and Sakamato, 2003).Typically, polysaccharides are employed as gelling, thickening, and stabilizing chemicals to enhance the textural qualities and stability of certain foods. goods including salad dressings, candies, and jams. There have been reports of two significant fractions in the polysaccharides recovered from basil seeds by cold water extraction and alcohol precipitation in early investigations (Anjaneyalu & Tharanathan, 1972; Tharanathan & Anjaneyalu, 1975; Anjaneyalu & Channegowda, 1979). (i) An acid-stable core glucomannan (43%) with a glucose to mannose ratio of 10:12; and (ii) (1–4)-linked xylan (24.29%) with acidic side chains at the xylosyl residues in the acid-soluble section at positions C-2 and C-3. According to Fahn and Werker (1972), the mucilaginous layer of the swollen seeds is a pectinous matrix that contains a significant quantity of unesterified galacturonic acid and has a high capacity for hydration. Basil seeds contain a reasonable amount of hemicellulose and cellulose, accounting for their hydrophilic character.They are high in fibre and associated nutritional properties and can be considered an a new conventional source of fibre (Mathews et al.,1993).

 In addition to its many advantages, basil seeds have some very dangerous negative effects that should be avoided. Eating basil seeds can result in hemorrhage, difficulties during pregnancy, effects on fertility, hypoglycemia, etc.

**Basil seeds have many potential health benefits, including :-**

1) Digestion :- Basil seeds expand when soaked in water, which can help with digestion and relieve constipation.One of the advantages of sabja seeds, in addition to being a great source of protein, is their previously noted direct effect on the digestive system. This promotes healthy weight reduction by improving the body’s ability to digest meals. Furthermore, because sabja seeds are calorie-free, they won’t interfere with your efforts to lose weight.¹

2) Weight management :- Basil seeds are high in fiber, which can help you feel full and reduce hunger.Sabja seeds are a great option if you’re trying to lose weight because of their high fibre content, which helps to fill you up. This may assist in lowering your daily caloric consumption. Additionally, they control blood sugar levels, avoiding spikes that may trigger overindulgence in food and desires.²

3) Blood sugar :- Basil seeds can help regulate blood sugar levels by slowly releasing sugar into the bloodstream.Sabja seeds’ high fiber content and possible insulin-sensitizing properties may potentially aid with blood sugar regulation. Compared to chia seeds, sabja seeds have been the subject of less research with blood sugar regulation.³

4) Heart health :- Basil seeds contain polyphenols, which are antioxidants that may help maintain normal cholesterol levels and support heart function. Omega-3 fatty acids, which promote heart health and lower inflammation, are rich in sabba seeds. They are also brimming with vital minerals like iron, calcium, and magnesium, which support healthy muscles, strong bones, and the body’s ability to transfer oxygen.⁴

5) skin care :- The flavonoids and antioxidants included in basil seeds aid to enhance skin health and promote the production of new skin cells. Basil Many skin conditions, including psoriasis and eczema, can be treated by applying crushed seeds mixed with coconut oil to the afflicted regions. Consuming basil seeds on a daily basis aids in the secretion of collagen, which is needed to regenerate skin cells when they are injured by everyday wear and tear. It is an anti-aging superfood that also aids in increasing skin suppleness.⁵

6) boost bone health :- Iron, potassium, copper, calcium, manganese, and magnesium are just a few of the many elements found in basil seeds that promote density of bone minerals. By doing this, you’ll reduce your chance of getting osteoporosis and maintain your youthful, robust appearance. Rich in calcium, iron, magnesium, and phosphorus, sabba seeds support healthy bones, strong muscles, and general wellbeing. Essential vitamins like A, C, E, and K, which support a number of body processes and offer antioxidant advantages, are also included in the benefits of sabja seeds. ⁶

7) helps in dental health :- Due to their anti-fungal, antibacterial, antiviral, and other properties, basil seeds help prevent oral ulcers, cavities, foul breath, and plaque. Chewing on basil seeds might help to freshen your mouth. ⁷

A)Saliva production – Chewing basil seeds can help increase saliva production, which can neutralize acids and prevent tooth decay.

B)Mouth freshener – Drinking a glass of soaked basil seeds can help freshen your mouth. ⁸

8) improve vision :- Due to their significant vitamin A content, basil seeds are advised for those experiencing high levels of oxidative stress or eyesight loss. As a potent antioxidant in the retina, vitamin A delays the onset of macular degeneration and prevents the formation of cataracts. ⁹

9) cooling effects :- Sabja seeds relieve fever and hot conditions by lowering body temperature, acting as a natural body coolant. Sabja seeds cool your body after consumption, assisting with comfort and internal temperature regulation. ¹⁰

10) cures cough and flu :- Due to their antispasmodic qualities, basil seeds help to relax and relieve tension in spastic muscles. They aid in whooping cough control in this way. They fortify the body’s immune system. Beta carotene, vicenin, and oryietin are examples of flavonoids that strengthen the body’s defences.¹¹,¹²

**Nutritional Profile:**

Rich in fiber (15-20%)

Good source of protein (10-15%)

Rich in omega-3 fatty acids (alpha-linolenic acid)

Rich in antioxidants (flavonoids, phenolic acids)

Good source of minerals (potassium, magnesium, iron)

**Therapeutic Uses:**

Coughs and Colds: Soothes respiratory issues, reduces coughing.

Diarrhea and Dysentery: Fiber content helps regulate bowel movements.

Skin Conditions: Treats eczema, acne, and other skin issues.

Oral Health: Reduces bad breath, gum inflammation, and mouth ulcers.¹³

 **Side Effects :-**

**Comman side effects :-**

Allergic reactions: Hives, itching, swelling, or difficulty breathing.

Digestive issues: Nausea, vomiting, diarrhea, or stomach cramps.

Flatulence and bloating: Due to high fiber content.

Interactions with medications: Blood thinners, diabetes medications, or blood pressure medications.

Stomach upset: Heartburn, acid reflux, or stomach pain.¹⁴

**Less Common Side Effects :-**

Choking hazard: Swallowing seeds whole can cause choking.

Intestinal blockage: Consuming large quantities can cause intestinal blockage.

Skin rashes: Rare cases of skin rashes or eczema.

Respiratory issues: Rare cases of respiratory problems, such as asthma or bronchitis.

Hormonal imbalance: May affect hormone levels, particularly thyroid hormones.¹⁵

**Uses :-**

**Culinary Uses:**

Add to Smoothies, Juices, and Milkshakes

Mix with Yogurt, Oatmeal, or Cereal

Use as an Egg Substitute in Baking

Sprinkle on Salads, Vegetables, or Fruits

Make Sabja Seed Pudding or Desserts

**Ayurvedic Benefits:¹⁶**

Balances Pitta Dosha (Fire Element)

Supports Tridoshic Balance (Vata, Pitta, Kapha)

Relieves Digestive Issues (Constipation, Diarrhea)

Reduces Inflammation and Pain

Promotes Relaxation and Calmness

**Cosmetic Uses:**

Skin Toner and Face Mask

Hair Mask for Shine and Strength

Natural Exfoliant for Skin

Anti-Aging Properties

Soothes Sunburn and Skin Irritations

**Conclusion :-** Sabja seeds, sometimes referred to as basil seeds, are a superfood that is high in nutrients and has many health advantages. Their high levels of antioxidants, fibre, protein, and omega-3 fatty acids promote general health and may have medicinal advantages.

***References* :-**

1)Agarwal A, Bora D, Agarwal C, Kumar R, Choudhary V. CNS stimulant and antidepressant activity of seeds of Abelmoschus esculentus in rats. Bull.Pharm.Res. 2015; 5 (2);47.50.

2)Anjaneyalu Y.V and Channe Gowda, D. (1979). Structural studies of an acidic polysaccharide from Ocimum basilicum seeds. Carbohydrate Research, 75, 251-256.

3)Anjaneyalu Y.V and Tharananthan,R.N (1971). Composition and preliminary fractionation of the seed mucilage of Ocimum canum. Australian Journal of chemistry, 24,1501-1507

4)Anudurga Gajendiran,Vidhya Thangaraman, Suji Thangamani, Datchayani Ravi and Jayanthi Abraham, 2016. Antimicrobial, Antioxidant and Anticancer screening of Ocimum basilicumseeds . 114-118

5)Azoma, J. and Sakamoto, M. 2003. Cellulosic hydrocolloid system present in seeds of plants. Trends in Glycoscience and Glycotechnology, 15,1-14

6)Bailey LH. Manual of cultivated plants.Macmillan Co., NewYork, USA: 1924;101-3

7)Daneshian A, Gurbuz B, Cosge B, Ipek A. Chemical components of essential oils from basil (Ocimum basilicum L.) grown at different nitrogen levels . Int . J. Nat. Eng.Sci. 2009;3(3):9-13

8)Darrah . Helen, 1980, The cultivated basils .Buckeye Printing, Independence,

9)Debbagio, Thomas and Susan Belsinger. 1996, Basil: An herb lover’s guide, Interweave,Loveland,Colo

10)Fahn A, Werker E. Anatomical mechanisms of seed dispersal. In:Seed Biology. Koslowski TT(ed.), Academic Press, NewYork:1972;1-22

11)Hosseini Parvar SH, Matia, Merino L, Goh KKT, Razavi SMA, Mortazavi SA,2010. Steady shear flow behaviour of gum extracted from Ocimumbasilicum L. seed. Effect of concentration and temperature In: Journal of Food Engineering,vol.101,2010, P.236-243

12)Jain, R.A.Agarwal, R.C,Pandey, A Jain,R.Evaluation of Argemone Mexicana fruits extracted using micronucleus assay in mouse bone marrow cells.Bull.Pharm.Res.2010;1(2):22-4

13)Javanmardi, J. Stushnoff, C. Locke, E. and Vivanco, JM. Antioxidantactivity and total phenolic content of Iranian Ocimum accessions. Food Chemistry, 83, 547-550 (2003).

14)John Staughton. 2019.Amazing basil seeds health benefts and uses.

15)List PH, Horhammar L. Hagers Handbuch der Pharmazeutischen Praxis, Fourth Edition, Springer Verlag, Berlin,Heidelberg:1977

16)Lukmanul Hakkim, F. Arivazhagan,G.,Boopathy,R. 2008. Antioxidant property of selected Ocimum species and their secondary metabolite content . In :Journal of Medicinal Plants Research, vol. 2, 2008, no.9 . p.250-257.