



A short review on medicinal value of Indian blackberry (*Syzygium cumini* L.)

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Abstract

Indian blackberry, also known as Java plum, black plum, jambolan, or jamun, is a tropical evergreen tree in the *Myrtaceae* genus of flowering plants. It is mostly used for conventional treatment of diarrhoea, ulcers, inflammation, and diabetes mellitus. It is a good source of anthocyanin, which is useful against analgesic characteristics, and it has medicinal benefits. Additionally, it possesses antineoplastic, radioprotective, and chemopreventive qualities. The information about the therapeutic benefits of Indian blackberries for human health is briefly described in the current article.

Keywords: Indian blackberry, medicinal value, human health, chemo preventive qualities, ulcers, inflammation

Introduction

Syzygium cumini, a member of the *Myrtaceae* family, is also known as *Eugenia cumini* and *Syzygium jamunum*. Other names for Indian blackberry include Jambul, Black Plum, Java Plum, Jamblang, and Jamun (Tewari *et al.*, 2021) [16, 17]. The tree only bears fruit once a year, and the taste of the berries is sweetish-sour. The ripe fruits are used to produce wine, squash, jellies, and health beverages. All components of the tree, but most significantly the seeds, are used to manage diabetes mellitus in connection with its nutritional usage. Jamun has antioxidant, anti-inflammatory, anti-HIV, anti-leishmanial and antifungal, nitric oxide scavenging, free radical scavenging, anorexigenic, gastroprotective, anti-ulcerogenic, and radio-protective effects (Baliga *et al.*, 2011) [3].

Nutritional composition of Indian blackberries

Table 1: Nutritional composition of Indian Blackberry

Java Plum, raw - Nutritional value per 100 g	
Energy	60 kcal
Carbohydrates	15.56 g
Fat	0.23 g
Protein	0.72 g
Water	83.13 g
Vitamin A	3 IU
Thiamine (vit. B1)	0.006 mg (1%)
Riboflavin (vit. B2)	0.012 mg (1%)
Niacin (vit. B3)	0.260 mg (2%)
Pantothenic acid (B5)	0.160 mg (3%)
Vitamin B6	0.038 mg (3%)
Vitamin C	14.3 mg (17%)
Calcium	19 mg (2%)
Iron	0.19 mg (1%)
Magnesium	15 mg (4%)
Phosphorus	17 mg (2%)
Potassium	79 mg (2%)
Sodium	14 mg (1%)

Source: USDA Nutrient Database

Composition of Indian blackberries

The fruit contains between 83.70 and 85.80 grammes of moisture, 0.70 and 0.13 grammes of protein, 0.15 and 0.30 grammes of crude fibre, 14 grammes of carbohydrates, and 0.32 and 0.40 grammes of ash. Per 100 g of edible portion, there are 8.30 to 15.00 mg of calcium, 35.00 mg of magnesium, 15.00 to 16.20 mg of phosphorus, 1.20 to 1.62 mg of iron, 26.20 mg of sodium, 55.00 mg of potassium, 0.23 mg of copper, 13.00 mg of sulphur, 8 I.U. of vitamin A, 0.01 to 0.03 mg of thiamine, 0.009 to 0.01 mg of vitamin b12, 0.20 mg to 29 mg of niacin (Chaudhuri *et al.*, 1990) ^[5].

Chemical composition of Indian blackberry

The phytochemicals malic acid, oxalic acid, gallic acid, tannins, cyanidin glycoside, oleanolic acid, flavonoids, essential oils, and betulinic acid are all present in Indian blackberry pulp. Anthocyanins, delphinidin, petunidin, and malvidin-diglucosides are found in the jamun's pulp. Glucose, fructose, citric, malic, gallic, delphinidin-3-gentiobioside, malvidin-3- laminaribioside, petunidin-3- gentiobioside, and cyaniding diglycoside are all abundant in fruits (Jagetia, 2007; Tewari *et al.*, 2021) ^[7, 16, 17].

Medicinal Properties of Indian blackberry

The jamun was essentially proclaimed as a pharmaceutical and traditional medicine. The fruit is astringent, stomachic, carminative, antiscorbutic, and diuretic in terms of medicine. In addition, a fruit extract claims to have antibacterial and cytotoxic properties and might be used to conventional antimicrobial treatments. Jamun had substantially higher antioxidant flavonol levels than other non-traditional fruits. Fruits contain a variety of anti-oxidant substances, such as flavonoids, phenolics, carotenoids, and vitamins. These substances are all thought to be good for human health because they lower the risk of degenerative diseases by reducing oxidative stress and by inhibiting the activity of macromolecular oxidation, which can be caused by components like anthocyanins, tannins, and flavonols (Giri *et al.*, 1985) ^[6].

Therapeutic Benefits of Indian blackberries

Indian blackberries are a sweet, tasty berry that is excellent for keeping one's health in check. They are a useful tool in the fight against and prevention of the following illness conditions:

1. Prevent cancer

Indian blackberries have anti-carcinogenic qualities because they are strong in flavonoids like anthocyanins and phenolic components like ellagic acids. They aid in destroying the free radicals present in the human body because of their antioxidant capabilities, so halting the growth of cancer's primary cause. Blackberries have been reported to be beneficial against a number of malignancies, including lung, oesophageal, skin, and colon cancer. Indian blackberries are rich in a variety of micronutrients and vitamins that stop the formation of malignant cells and prevent the development of tumours. The ability to resist oxidative damage is a crucial component in the treatment of several different illnesses (Aqil *et al.*, 2016) ^[2].

2. Curing Neural dysfunctions

According to studies, eating blackberries regularly can treat many neurological disorders and improve memory. Thanks to the polyphenolic substances it contains, the body's cognitive processes are improved (Padmapriya *et al.*, 2020) ^[10].

3. Impaired digestion

It has both soluble and insoluble fibre, which enables improved digestion by ensuring greater absorption of water, minerals, and nutrients in the intestines. Blackberries' high fibre and nutrient content promotes better digestive health (Chaturvedi *et al.*, 2007) ^[4].

4. Reduce risk of cardiovascular anomalies

The cardiac benefits of Indian blackberry are also excellent. Indian blackberries improve heart health when consumed regularly. Due to the high anthocyanin content of Indian blackberries, it lowers the risk of cardiovascular illnesses. Additionally, it includes significant amounts of magnesium and dietary fibre, which prevent blood vessel obstruction and promote uninterrupted blood flow, hence lowering the risk of cardiac arrhythmia and heart attack. Additionally, a high vitamin C level reduces the risk of several heart-related issues (Rekha *et al.*, 2008) ^[12].

5. Against bacterial and viral infections

Indian blackberries are quite effective in fighting several bacterial and viral illnesses, which is attributed to their high phytoestrogen, vitamin, and mineral content. The ellagic acids present also aid in its anti-pathogenic properties. Thus, blackberries aid in boosting the body's immunity and shield it from a variety of microbial illnesses (Ramteke *et al.*, 2015) ^[11].

6. Maintaining body weight

Indian blackberries provide a lot of fibre and little sugar or cholesterol. Blackberries are effective weight controllers thanks to their high nutritious content. For a wholesome weight-control strategy, prepare a salad or have a cup of it as a frequent snack (Kubola *et al.*, 2011) ^[8].

7. Against skin aging

Indian blackberries include a number of skin-conditioning elements like Vitamin C, A, K, and E that promote youthful-looking skin. Vitamin C helps maintain taut, toned skin by fortifying and shielding the collagen from harm. Blackberries contain vitamin E, which keeps skin radiant and shields it from wrinkles and other oxidative damage. Additionally, the tannins found in blackberry leaves can be applied to wounds as a natural astringent to aid with blood clotting (Sagrawat, 2006) ^[13].

8. Improving eye health

Indian blackberries are essential for enhancing eye health. The vitamins in it, notably Vitamin A, keep the eyes healthy and prevent them from conditions like cataract and night blindness. They also improve eyesight. Lutein, which shields the eyes from damaging UV radiation, is another component of blackberries (Muhammad & Saghir, 2011) ^[9].

9. For pregnancy and women health

Indian blackberries are excellent for pregnant and nursing mothers because of their high nutritional values. During pregnancy, it's crucial to consume folic acid and other essential vitamins (Sontakke *et al.*, 2009) ^[14]. Blackberries are rich in several vitamins and minerals, which support tissue growth and development and lower the chance of birth abnormalities. Additionally, it improves bones and enhances immunity, keeping the expectant woman healthy and free from infections. Additionally, the phytoestrogens included in blackberries aid in the treatment of PMS and menopausal symptoms (Srivastava *et al.*, 1983) ^[15].

10. Controlling diabetes

Indian blackberries are ideal for managing blood sugar levels in the body since they have a high fibre content and a low sugar content. The substantial fibre content helps to maintain healthy digestive function while promoting even sugar absorption. This maintains balanced sugar absorption, which in turn manages sugar levels. Additionally, the potassium in blackberries modulates the body's insulin levels, preventing diabetes (Acton, 2013) ^[1].

Conclusion

Jamun has long been used to treat a number of illnesses, particularly diabetes, heart disease, and its consequences. Jamun has antineoplastic action, hence it is also used to prevent breast cancer. It is mostly used for conventional treatment of diarrhoea, ulcers, inflammation, and diabetes mellitus. It is a good source of anthocyanin, which is useful against analgesic characteristics, and it has medicinal benefits. Additionally, it possesses antineoplastic, radioprotective, and chemopreventive qualities. It is important to look into the chemopreventive effects of jamun and its phytochemicals in other carcinogen models, such as those for chemical, radiation, and viral carcinogenesis. It is important to promote jamun producers in India's tribal regions by promoting the health advantages of jamun raw and value-added products to metropolitan consumers.

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