Different Pharmacological Activities of The Egg Plant (Solanum Melongena)- A Comprehensive Review

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Abstract- *The eggplant (Solanum melongena L.) is a herbaceous, vegetable crop with coarsely lobed leaves, white to purple flowers, berry fruit, and is grown primarily for food around the world, representing one of the best dietary sources of biologically active polyphenolic compounds, vitamins, antioxidants, and medicinal requirements. The plant which contains mainly flavonoids, tropane, glycoalkaloids, arginine, lanosterol, gramisterol, and aspartic acid. Metabolomics and metabolic profiling are significant platforms for examining plant chemical composition, and breeders are becoming increasingly interested about crop nutritional and health advantages. The plant is reported to have analgesic, antipyretic, antioxidant, anti-inflammatory, antiasthmatic, hypolipidemic, hypotensive, antiplatelet, intraocular pressure reducing, and CNS depressant and anaphylactic reaction inhibitory activities .This review provides an overview of the historical context and the various pharmacological activities.*

Keywords- Eggplant, Solanum melongena L., brinjal, vegetable crop, Polyphenolic compounds, Pharmacological activities.

I. INTRODUCTION

In India, the medicinal effectiveness of herbal remedies leads to the evolution of Ayurveda. Aside from Ayurveda, the traditional system of medicine, several common plants/plant products were employed as domestic cures throughout the nation. S. melongena var. esculentum is an economic flowering plant in the Solanaceae family, which has 75 genera and approximately 2000 species (Biology of Brinjal, 2011) and is mostly produced for food and medical uses (Igwe et al., 2003).

Eggplant fruit, also known as aubergine in the United Kingdom, melanzana, garden egg, brinjal, and Baingan in India, is one of the most significant vegetable crops farmed on approximately 1.7 million acres globally.

About 75% of eggplant is produced in countries like India, Bangladesh, Pakistan, China, Nepal, the Philippines, and Sri Lanka, where it is a significant subtropical and tropical crop. Since certain types' fruits are white and resemble chicken eggs in form, the name "eggplant" comes from this.

The type of eggplant cultivar has a considerable impact on the colour, size, and form of the eggplant fruit. (Kwon and others, 2007) Studies on phytochemistry have shown steroids, tannins, alkaloids, and flavonoids. (Kwon and others, 2007) For its fruit, it is widely planted in India.

The Iplant's many components can be used to treat inflammatory diseases, cardiac debility, neuralgias, nasal ulcers, cholera, bronchitis, and asthma. Besides, having many traditional uses, S. melongena is reported to exhibit many important pharmacological actions.

TAXONOMICAL HIERARCHY

- Kingdom: Plantae
- Subkingdom: Viridaeplantae
- Division: Tracheophyta
- Subdivision: Spermatophytina
- Class: Magnoliopsida
- Subclass: Asteridae
- Order: Solanales
- Family: Solanaceae
- Genus: Solanum L.
- Species: Solanum melongena Linn.

VERNACULAR NAMES

- Sanskrit: Vartaku
- English: Brinjal
- Assamese: Bengena
- Hindi: Baingan
- Marathi: Vangi
- Bengali: Begun
- Malayalam: Kathrikka
- Kannada: Badane
- Telugu: Vankaya
- Tamil: Kathirikkai.

II. HISTORICAL OVERVIEW

It was discovered that a work from 59 BC contained the earliest mention of the eggplant in classical Chinese literature. This is the earliest trustworthy and precisely dated evidence of eggplant cultivation, as far as is known. The investigation shows that size, shape, and flavour were the three main fruit quality factors that were considered throughout the domestication of the eggplant in China. These characteristics were actively and gradually selected, resulting in changes in fruit size from small to large, taste from unpleasant to what was deemed at the time to be sweetish, and the gradual cultivation of a greater variety of fruit shapes.

Hypotheses about the origins and evolution of eggplants have in the past been based on inference owing to the lack of archaeological evidence for origins and early domestication. (Lester and Hasan, 1991; Choudhury, 1995) suggested that the eggplant was derived from the subtropical species S. incanum, native to North Africa and the Middle East. They recommended the wild progenitor developed as a garden weed, and through human selection in south-east Asia, progressively more advanced cultivars were selected. They divided S. melongena into a series of morphological types or gene pools, identified as A (putative wild progenitors) to G (advanced cultivars), and suggested eastwards movement of cultivated forms, with subsequent movement westwards complicating patterns of character change (Lester and Hasan, 1991). (Lester and Hasan, 1991).

India and south-east China, China, India, and Thailand, Burma to Indo-China, Daunay et al., 2001, and south-east Asia (Lester and Hasan, 1991) are a few possible regions for eggplant domestication that have been suggested. The presence of weedy forms—which many authors believe to be their ancestors—and literary references serve as the basis for each of these arguments. The prevalence of wild, weedy eggplant varieties in southern China, as discovered by the authors' recent fieldwork, supports a south-east Asian origin; nevertheless, the idea of numerous domestication episodes has not yet been looked into.

Examining the Sanskrit text has shown evidence of an Indian domestication. The earliest common names for the eggplant were found in works from the third century BC to the third century AD, according to Khan (1979). However, his claim that the earliest Sanskrit text dates back to 300 BC was based on a secondary source (Monier-Williams, 1899), and the time period he suggested cannot be verified because the text in question has undergone numerous revisions over the centuries (S. Y. Ye, Peking University, China, pers. comm.).

Comparing the medicinal uses of eggplant and related solanaceae in China, India, and the Philippines raises the possibility of independent use development, cultural diffusion, and recent species substitutions.

The agricultural and cultural influences on each community are reflected in the ways that geographically distinct communities use crops.

Since it was domesticated in South and Southeast Asia, the eggplant (S. melongena L.; Solanaceae) has been used in a wide range of culinary and medicinal preparations by numerous distinct Asian ethno linguistic groups. In this paper, we report on the total uses of eggplant and sixteen related species in three regions: India, southern China, and Malesia, and conduct a comparative analysis to form hypotheses about how influences on plant use in one region may have influenced use and evolutionary trajectories in other regions.

The findings of a literature review and 101 interviews reveal a total of 77 medicinal attributes for eggplant, with few similar attributes mentioned in different regions, leading us to hypothesise that largely pristine (i.e., without influence from other regions) development of uses for eggplant occurred in India, southern China, and Malaysia. Furthermore, the results reveal that several Solanum species have been fluidly incorporated into usage created for other species in a single location.Rachel S. and colleagues (2014) 2014 (Fabio Cericola et al.)

III. MORPHOLOGY

The plant is a herbaceous annual that grows upright or semi-spreading. It grows into a bushy plant with big leaves that can reach a height of 60-120 cm.Daunay et al. (2004)

LEAVES:

The leaf pattern is opposite, big, single lobed, and most cultivars have abundant wool-like hair on the underside. The leaves might have or not have spines in the centre (Daunay et al., 2004).

Fig: 1- Leaves of *solanum melongena*

FLOWER:

Flowers are complete, actinomorphic, and hermaphrodite. Calyx five lobed; corolla five lobed gamopetalous with incurved lobe edges. Although most current cultivars have solitary hermaphrodite flowers, inflorescences are 1 to 5 andromonoecious cymes. The most frequent flower form is 5- merous (5 sepals, 5 petals, 5 stamens), although 6, 7, and 8- merous blooms are also seen in globose and round fruited varieties. Eggplant is commonly thought to be an autogamous species; nevertheless, insects visit flowers in open fields and warm temperatures, and the percentage of allogamy can reach 70% or more (Daunay et al.,2004).

Fig : 2 – Flower of *solanum melongena*

FRUIT:

The fruit is a fleshy berry that can be found alone or in bunches. The fruit can be ovoid, oblong, obovoid, or long cylindrical in form. The fruit might be purple, purple black, yellowish, white, green variegated with white stripes, green with light green/white stripes, or even a mix of three colours. Quantity of anthocyanins, prickles, and hairiness on vegetative sections varies. Berries of varying form (round, intermediate, long, snake-like) and size (tens of grammes to more than a kilo). The absence or presence of two types of pigments, chlorophylls and anthocyanins, as well as their distribution pattern, influence a wide range of fruit colours (Daunay et al., 2004).

Fig : 3- Fruit of *solanum melongena*

STEM :

The plant's stem is woody and generates many branches in an approximately dichotomic ramification pattern (Daunay et al., 2004).Eggplant is a diploid plant with 12 basic chromosomes and a genomic size of roughly 956 Mbp (Bennett and Leitch 2004).

Fig : 4- Stem of *solanum melongena*

IV. PHYTOCONSTITUENTS

The principal phenolic components in eggplant peel are anthocyanins, a naturally occurring group of pigments

found in red and/or purple coloured fruits (Mazza et al., 2004). Eggplant has a greater concentration of free reducing sugars, anthocyanin, phenols, glycoalkaloids (solasodine), and amide proteins than other fruits and vegetables.The bitter taste of eggplant is caused by the presence of glycoalkaloids (Rai MK et al., 1997). Chemical analysis revealed that callus extract included more alkaloids, flavonoids, tannins, steroids, and glycosides than root and fruit extracts (Ghoson S. Saleh, 2015).

Arginine, aspartic acid, histidine, 5-HT, delphinidine 3 bioside (nasunin), oxalic acid, solasodine, ascorbic acid, tryptophan, and other nutrients can be found in fruits. Chlorogenic, hydrocaffeic, and protocatechuric acids are found in the leaves (Rai MK et al., 1997). Tropane, pyrrolidine, quinazolizidine, steroid alkaloids, and glycoalkaloids are among the alkaloids found. Evans W.C., 2002 Seeds have yielded two steroidal saponins, melongoside L and melongoside M, as well as three novel saponins, melongoside N, O, and P. (PK Kintia, 1985) S. melongena catechol oxidase has been isolated and characterised (Sharma RC et al., 1980). Solanoflavone, a bioflavonoid glycoside, is found in the leaves and fruits of S. melongena (Shen G et al., 2005).

Nasunin, a key component of anthocyanin colour, was extracted from eggplant peels and tested for antioxidant activity (Igarashi et al., 1993; Noda et al., 2000). Nasunin has two isomers: delphinidin 3-[4-(cis-p-coumaroyl)-L-rhamnosyl (1-6) glucopyranoside] and nasunin. -5-glucopyranoside (cis) and delphinidin3[4-(trans-p-coumaroyl)-L-rhamnosyl-(1-6)glucopyranoside] are two examples of glucopyranosides. (trans)-5 glucopyranoside (T. Ichiyanagi, et al.,2005). In peel extracts, the primary anthocyanins were identified as delphinidin 3-(pcoumaroylrutinoside) -5-glucoside (nasunin), delphinidin 3-rutinoside, delphinidin 3-glucoside, and petunidin 3-(p-coumaroylrutinoside)-5-glucoside (petunidin 3RGc5G) (Keiko Azuma, 2008). Nasunin crystals had greater antioxidant indices in Fremy's salt and LACL tests, but no action against the hydroxyl radical was detected. (Pier Carlo Braga, et al.,2016).

Nasunin is not only a powerful antioxidant capable of scavenging free radicals, but it is also an effective iron chelator. It does not directly scavenge free radicals; instead, it inhibits hydroxyl radical formation by chelating iron. T. Ichiyanagi and colleagues, 2005; (K. Matsubara, et al., 2005) Stommel and Whitaker (2003) investigated the phenolic acid concentration of the fruit flesh of seven marketed eggplant varieties. The link between phenolic content and antioxidant activity of eggplant pulp was also documented, as was the optimised extraction of phenolic acids from eggplant using various solvent mixes (Luthria, 2006). (Singh et al., 2009). Although antioxidant vitamins such as vitamin A, C, and -carotene were lower and some polyphenolic components, particularly nasunin concentration, were higher in grilled eggplants, they were unable to exhibit improved cardioprotective capabilities when compared to raw fruit.

They are predominantly found in their purple skin, but they are also present in our freeze-dried eggplants, which contain both flesh and skin. The level of nasunin in eggplant peels is likely to be quite high.Furthermore, nasunin is anti-angiogenic (K. Matsubara et al., 2005) and hence may not be ideal for the creation of new blood vessels. The increased aortic flow seen in our study might be attributed to the vasodilatory impact of other polyphenols (Cao Y., et al., 2002,). The grilled eggplants possessed more polyphenols, including chlorogenic acid, caffeic acid, and nasunin, and their cardioprotective potential was identical to that of raw eggplants (S. Das, et al.,2011)

The largest class of phenolics in eggplant is hydroxycinnamic acid conjugates (Whitaker and Stommel, 2003), and of these, chlorogenic acid (5-O-caffeoylquinic acid and its isomers) accounts for 70% to 95% of total phenolics in eggplant fruit flesh (Whitaker and Stommel, 2003). (Stommel and Whitaker, 2003). The fact that chlorogenic acid is by far the most abundant phenolic molecule implies that a significant portion of genetic diversity may be due to a few genetic variables involved in the metabolic pathways leading to chlorogenic acid buildup (Niggeweg et al.,2004)

The change in total phenolics and chlorogenic acid concentration accounted for only 18.9% and 6.0% of the variation in fruit flesh browning, respectively, while PPO activity was not substantially linked with fruit flesh browning. Browning of liquid extracts was strongly linked with chlorogenic acid concentration (r = 0.852).The study of principal components reveals the possibility of developing new eggplant cultivars with enhanced functional and apparent qualities. Plazas, Mariola (2013). In Eggplant (S. melongena), total phenolic compounds were reported to be 34.8 0.8, proanthocyanidins: 29.4 1.48, and trolox equivalent antioxidant activity 0.7 0.0. (Romaric G. Bayili , et.al. 2011)
The following enzymes are involved in the CGA pathway:.PAL, phenylalanine ammonia lyase; C4H, cinnamate 4-hydroxilse; 4 CL, 4-hydroxycinnamoyl CoA ligase; HCT, hydroxycinnamoyl-CoA shikimate/quinatehydroxycinnamoil transferase ; C3’H,p-coumaryl ester 3’-hydroxilase (Niggeweg R, 2004).

According to HPLC-DAD-MS3 analysis of acetone extracts, the main anthocyanin in eggplant was delphinidin-3-

rutinoside, whereas the main pigment in violet pepper was delphinidin-3-trans coumaroyl rutinoside-5-glucoside. The structure-related actions of anthocyanins are important for understanding food colour as well as their specific nutritional value. (E. Sadilova et al., 2006)

V. CLINICAL EFFICACY

1.1 Analgesic Activity :

The alkaloids provide analgesic properties. 2007 (Kwon et al.) Vohora et al., 1984 investigated the central nervous system effects of a crude alkaloidal fraction derived from S. melongena leaves. It had a powerful analgesic effect. Vohora and colleagues (1984). Mutalik et al., 2003 investigated the analgesic impact of S. melongena leaves in albino mice at dosages of 100 mg, 250 mg, and 500 mg/kg body weight, finding considerable dose-dependent analgesic effectiveness in the acetic acid produced writhing test. S. Mutalik et al., 2003.

1.2 Antidiabetic :

S. melongena has traditional usage and is said to have anti-diabetic properties. The National Diabetes Education Program of the National Institutes of Health, the Mayo Clinic, and the American Diabetes Association all promote an eggplant-based diet for type 2 diabetes control. This recommendation is based on eggplant's high fibre and low soluble carbohydrate content. The phenolic-linked antioxidant activity and -glucosidase inhibitory capability of eggplant, which might lower hyperglycemia-induced pathogenesis, is a more physiologically meaningful explanation. Phenolic-enriched eggplant extracts with moderate free radical scavenging-linked antioxidant activity exhibited high -glucosidase inhibitory activity and, in certain cases, moderate to high angiotensin I-converting enzyme (ACE) inhibitory activity. Inhibiting these enzymes provides a strong biological basis for type 2 diabetes therapy by regulating glucose absorption and lowering related hypertension. This phenolic antioxidant-rich dietary regimen may also diminish hyperglycemia-induced pathogenesis associated with cellular oxidative stress. These findings support additional animal and clinical research (Kwon et al., 2007) (Y.I. Kwon 2008). (Mace E.S. et al., 1999).

1.3. Antipyretic Activity :

Mutalik et al. (2003) investigated the antipyretic activity of S. melongena leaves at dosages of 100 mg, 250 mg, and 500 mg/kg body weight. It was discovered to have a substantial antipyretic effect in albino rats when exposed to yeast induced pyrexia (Mutalik S et al., 2003).

1.4 Antihyperlipidemic Activity :

Sudheesh et al., 1997 investigated the hypolipidaemic impact of flavonoids isolated from the fruits of S. melongena in normal and cholesterolfed rats at a dose of 1 mg/100 g body weight/day. Flavonoids were discovered to have strong hypolipidaemic activity. (Sudheesh and colleagues, 1997) Guimaraes et al., 2000 conducted a 5-week clinical research to assess the effects of S. melongena on blood cholesterol and triglycerides in 38 hypercholesterolemic human volunteers.

S. melongena was shown to dramatically lower blood levels of total and LDL cholesterol, as well as apolipoprotein B.et al.,2000.

1.5 Cardiac Activity :

Various portions of the plant can be used to treat inflammatory disorders and heart debility (Kwon et al., 2007). Shum and Chiu (1991) used in-vivo and in-vitro preparations to examine the cardiovascular activity of S. melongena extract (SME). In normotensive albino rats, SME generated dose-dependent hypotensive responses. The reaction length was similarly dosage dependant (Shum and Chiu, 1991). In spontaneously hypertensive rats, oral ingestion of eggplants can cause hypertension. These rats have genetic characteristics that cause hypertension with age, and they are utilised as a model of human essential hypertension, indicating that eggplant can be predicted to have hypotensive effects on people with comparable genetic variables.

Eggplant has the potential to be used as a functional food to help reduce hypertension and its problems in everyday life (Shohei Yamaguchia et al., 2019) (Hanson PM, et al., 2006); (Salunkhe DK, et.al).

1.6 Antiasthamatic

Its terpenes (steroids) make it beneficial for bronchitis and asthma (Kwon et al., 2007). Internal use of root decoction as a general stimulant and asthma treatment (Kwon et al., 2007). Bello et al. (2004) conducted a randomised double-blind placebo-controlled clinical study of S. melongena fruit in moderate to severe asthmatics at a dose of 89 0.6 g of fruit/day. The fruit of S. melongena was found to dramatically improve asthma symptoms, signs, and illness severity score after 2 weeks of daily consumption. It was discovered to have salbutamol sparing properties (Bello et al., 2004).

1.7 Anti inflammatory :

Han et al. (2003) investigated the anti-inflammatory efficacy of Solanum melongena water extract (SMWE) in PAR-2mediated mouse paw oedema caused by injecting trypsin or transcinnamoyl - LIGRLO-NH (2) 1 hour after oral administration of SMWE at dosages of 1, 5, 10, and 100 mg/kg. It significantly reduced both paw oedema and vascular permeability.

1.8 Antiplatlet and Calcium Channel Blocking Activites :

Solanum melongena was examined for its antiplatelet and calcium channel inhibiting activities by ul et al., 2011. The fractions were extracted using various solvents. Calcium channel blocking activity was investigated on guinea pig ileum utilising isolated organ bath assembly and antiplatelet activity was assessed using dual channel Lumi aggregometer. Platelet aggregation and calcium channel blocking activities were decreased by the aqueous fraction, ethylacetate fraction, and chloroform fraction, according to the findings.

1.9 Anaphylatic Reaction:

Lee et al., 2001 studied the effects of S. melongena water extract (SMWE) on immunological and nonimmunological anaphylactic responses.

The oral administration of SMWE at a concentration of 1 g/kg body weight totally prevented the nonimmunological anaphylactic response elicited by compound 48/80 injection. SMWE at 0.01 g/kg body weight effectively decreased the immunological anaphylactic reaction induced by sensitising the skin with anti-dinitrophenyl IgE. TNF release from mast cells was also lowered.

1.10 Action on the Eye :

Igwe et al., 2003 investigated the ocular consequences of Solanum melongena bolus ingestion on visually active male volunteers. Results Miosis was observed, as well as a 25% reduction in intraocular pressure. It is hypothesised that Solanum melongena would aid people with high intraocular pressure (glaucoma).

1.11 Antioxidant Activity :

Gazzani et al., 1998 investigated the preventive action of Solanum melongena fruit watersoluble components on rat liver microsomes. Antioxidant activity (PA%) against rat liver microsomes, lipid peroxidation triggered by CCl4 and evaluated by malondialdehyde release were all determined. The juice of Solanum melongena was shown to have an 80% anti-lipid peroxidation action. [14]

Sudheesh et al. (1999) investigated the antioxidant activity of flavonoids from Solanum melongena in normal and cholesterolfed rats at dosages of 1 mg brinjal flavonoid. The concentrations of malondialdehyde, hydroperoxides, and conjugated dines were dramatically reduced during the test. Catalase activity was increased. Glutathione concentration was also increased, as determined by malondialdehyde release.

1.12 CNS Depressant Activity :

Vohora et al., 1984 investigated the central nervous system effects of a crude alkaloid fraction of Solanum melongena leaves (CNS). The findings revealed that it has modest CNS depressing action.

1.13 Antioxidant Activity:

Because of the phenolic compounds in the fruit, eggplant is classified as one of the top ten vegetables in terms of oxygen radical scavenging ability (Cao et al., 1996). Flavonoids are responsible for the plant's antioxidant properties. 2007 (Kwon et al.) Antioxidant Activity investigated the antioxidant activity of a watersoluble component of S. melongena fruit on rat liver microsomes (Gazzani et al., 1998).

Antioxidant activity (PA%) against rat liver microsomes, lipid peroxidation triggered by CCl4 and evaluated by malondialdehyde release were all determined. The juice of S. melongena was shown to have an 80% anti-lipid peroxidation action. (Gazzani *et al.,* 1998). Sudheesh et al., 1999 investigated the antioxidant activity of S. melongena flavonoids in normal and cholesterol-fed rats at dosages of 1 mg brinjal flavonoid. The concentrations of malondialdehyde, hydroperoxides, and conjugated dines were dramatically reduced during the test. Catalase activity was increased. The glutathione concentration was also increased (Sudheesh et al., 1999). The antioxidant activity of 70% ethanolic (EE) and water extracts (WE) from various portions of eggplant revealed that the peel (55.19 mg/g) and calyx (121.07 mg/g) extracts had the greatest phenolic levels, respectively. The leaf (8.00 mg/g) and calyx (5.61 mg/g) extracts had the greatest total flavanol concentrations of EE and WE, respectively.

WE of calyx portion (IC50 = 0.390.01 g/ml) has a remarkably high SOD-like activity, which is approximately 1,700 times greater than WE of pulp part (IC50 = 0.690.01 mg/ml). This study also found that the calyx has high antioxidant activity. (Eun-Ju Jung and colleagues, 2001)

Assaying antioxidants from an eggplant byproduct (peel) using 70% methanol, 70% ethanol, and 70% acetone extracts revealed that 70% methanol is the best solvent for the extraction of anthocyanins (82.83 1.07 mg DGE/100 g DP), whereas 70% acetone is the best solvent for the extraction of total phenolics, flavonoids, and tannins (29.3 ± 1.23 mg GAE/100 g DE; 18.5 ± 0.07 mg QE/100 g DE and 5.37 ± 0.22 mg TAE/100 g DE, respectively). Huang et al. also reported on their research on the antioxidant activity of eggplant using several tests (2004) Eggplant extracts have been shown to be effective at scavenging reactive oxygen species, which are implicated in many human disorders. Highly significant differences in superoxide scavenging activities were found among accessions, with accession means ranging from 26% to 60% NBT reduction inhibition for methanolic extract and 40% to 81% NBT reduction inhibition for water extract, as evidenced by the highly significant linear correlation (0.79**) between the two assays.

There was no significant linear relationship between ascorbic acid level and methanolic extract (r=0.10), while there was a substantial but modest correlation (r=0.34*) between ascorbic acid content and water extract. S. melongena has enough genetic variability for SOS and total phenolics to warrant testing a greater number of accessions. High antioxidant cultivars will have tiny fruits. PM Hanson (2006).

1.14 Hepato Activity :

It has also been recommended as an excellent remedy for liver complaints. (Kwon *et al.,* 2007)

1.15 Hypotensive Action

Shum and Chiu (1991) used invivo and in vitro preparations to study the cardiovascular activity of Solanum melongena extract (SME). In normotensive albino rats, SME elicited dosedependent hypotensive responses. The length of the reaction was dosage dependant as well.

1.16 Miscellaneous

Eggplant has been shown to be effective in treating otitis, toothaches, cholera, dysuria, and nasal ulcers (Kwon et al., 2007). For heaps, leaves are utilised. Syphilis has been treated using the cooked root of the wild plant combined with sour milk and grain porridge.

The juice of the leaves is used to treat throat and stomach problems. Fruit juice, sometimes mixed with crushed leaves, was applied to suspected syphilitic hand lesions. Fruit that has been crushed with vinegar and considered cooling. The roots were used to treat skin disorders by the Chinese and Annamites (Mutalik et al., 2003).

The health benefits of chlorogenic acid and similar chemicals found in small amounts in eggplant are diverse, and they include free radical scavenging, antitumoral action, and antioxidant activity. (Sawa et al., 1998; Triantis et al., 2005).

II. CONCLUSION

Eggplant has proven its worth. The current review has provided thorough information about S. melongena L. It contains Nasunin as the primary anthocyanin pigment, as well as other alkaloids, glycosides, saponin, chlorogenic, hydrocaffeic, and protocatechuric acids. The plant exhibit many pharmacological and therapeutic benefits like analgesic activity, antidiabetic, antipyrectic action, antihyperlipidemic activity, cardiac activity, anti asthmatic, anti platelet and calcium channel blocking activity, anaphylactic reaction, action of the eye, antioxidant activity, CNS depressant activity, antioxidant activity, hapatoactivity, hypotensive action . More research is needed to identify the active component of the extract and determine the mechanism of action. These plants' harmful effects should also be investigated.

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