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Morphological and medicinal importance of *Melochia corchorifolia* L

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Abstract
Melochia corchorifolia belongs to the family Sterculiaceae and is a common weed found in many regions throughout tropical and subtropical regions. In some parts of India, especially in the Vindhyan area, people find this plant growing in waste areas and rice fields. In traditional medicine, people use the leaves and roots of the *Melochia corchorifolia* plant to help with problems like trouble urinating, stomach swelling, stomach illnesses, and snake bites. The plant has many different natural ingredients inside, like special chemicals called alkaloids, glycosides, terpenoids, steroids, and other helpful compounds. It also has natural sugars, proteins, and fats.

Keywords: *Melochia corchorifolia*, folklore uses, chemical constituents

Introduction
Traditional medicines are very important for helping people stay healthy all around the world. Plants that can be used as medicine still give us helpful healing ingredients, whether we use modern science or old, traditional ways (Krentz and Bailey, 2005) [1]. Because modern medicines can sometimes cause side effects, people are now paying more attention to traditional medicines. Scientists are studying these old remedies to understand how they work and why they can help us feel better (Gupta and Briyal, 2004) [2]. Scientists have been studying medicinal plants more and gathering information about them. This research helps us learn how these plants can be used as medicines. In the future, this knowledge might help people rely less on artificial medicines made in factories and instead use natural plants to stay healthy (Amadou, 1998) [3].

Morphology
Melochia corchorifolia, is also known as chocolate weed, is a weed plant this is typically seen in the wastelands and rice fields. *Melochia corchorifolia* has ovate leaves; the petioles are generally 5 cm long with linear stipules of 5mm long. The veins extend to be from 7 cm long to 5 cm long. This plant is an annual or perennial type of herb. It usually develops to be up to 1.3-2.0 m tall; stem with line of stellate hairs. It's simple, ovate leaves are normally arranged spirally with the margins very intensely serrated. The blade of the leaves is narrow to broad to the tip and it measures up to 7.5 cm× 5.5 cm.
The inflorescence of *Melochia corchorifolia* comprises crowded cymes with linear bracts. This plant species has flowers of 5 green sepals. The flowers of *Melochia corchorifolia* are purple, with 5 petals, 5-7 mm long. Flowers are bisexual, regular with calyx campanulate of 3 mm long. It is also short-teethed and consists of petals of 8 mm long, white with yellow base inside. The stamens are fused close to the top of the filaments. This purple flower has superior ovary with 5 styles joint at the base. The flowering occurs from July to October. The fruit contains a 5-valved capsule which measures up to 5 mm in diameter. It holds very few seed, approximately 1seed per locale. The seeds are wrinkled and brown, about 2.0-2.5 mm long in length. Fruits usually develop from September to December (Palaksha, 2017) [4].

Fig 1: *Melochia chorchorifolia* plant.

Vernacular names

Chocolate-weed, Wire Brush, red weed (English), Indonesia: orang-aring (general), jarring (Suundanes), gendiran (Javanese), Malaysia: lemak ketam, lemak kepiting, bayam rusa (Peninsular), Philipppines: bankalanan (Iloko), Kalingam (Panay Bisaya), Thailand: Khaang paak put (Chiang Mai), sa aeng bai mon (Chai Nat), seng lek (Ang Thong), India: Tikiokra (Bengali), Bilpat (Hindi), Ceruvuram (Malayalam), Chyeron, Dasoderotan (Oriya), Pinnak, Kuppundu (Tamil), Bettada thutthi, methuri gida (Kannada), Ganugapindikura (Telugu).

Systematic position

Kingdom: Plantae
Subkingdom: Tracheobionta
Super division: Spermatophyta
Division: Magnoliophyta
Class: Magnoliopsida
Subclass: Dilleniide
Order: Malvales
Family: Sterculiaceae
Genus: *Melochia* L.
Species: *Melochia corchorifolia*

Medicinal uses

The leaves of an unidentified *Melochia* species are applied to the forehead to treat headache. *Melochia corchorifolia* is used as fodder for cattle. Leaves are sometimes used as vegetable. Fruit powder is used for ear problems, anthelmintic, dysentery, abdominal swelling and snake bites (Ajaib, *et al*. 2010) [5]. Leaves are used for unspecified stomach disorders in Coastal East Africa. A decoration of the leaves and roots is used internally to treat dysentery, and a decoction of the leaves to stop vomiting. A leaf decoction is prescribed in compound mixture against urinary disorders. A decoction of the plant is applied in folk medicine in India as a cure for abdominal swelling, dysentery (CSIR, 1966) [6] and water snake bites (Chopra *et al*. 1956) [7]. The sap is applied to heal wounds poisoned by Antiaris. The plant is also used to relieve gastralgia and headache. The stem bark yields a valuable fiber. Stem and leaves decoction with oil are useful for preventing bad consequences from snake bites; leaves occasionally edible (Naskar, 1993) [8]. In Jharkhand leaves of *Melochia corchorifolia* are consumed as sag, leaf and roots are anti-dysenteric. Leaf is applied as poultice for swelling of abdomen and sores. Leaf and stem boiled in oil is used to prevent bad consequences from bites of water snakes (Sharma and Kumar, 2013) [9]. Santhal tribes of Jharkhand consume leaves as vegetable (Sinha and Lekra, 2007) [10]. Tribal of Uttar Pradesh, India use the decoction of leaves to treat dysentery (Shukla *et al*. 2013) [11].

Phytoconstituents

The methanol extract of aerial parts of *M. corchorifolia* was shows the presence of Phytochemicals as follows, Alkaloids: The alkaloids are fraganine, frangufoline adouetine-y' and melofoline (cyclopeptide alkaloids), melochicorine (a pseudo-oxindole alkaloid) and 6-methoxy-3-propenyl-2-pyridine (pyridine alkaloid). Pyridine derivatives: pyridoxine, 4-methoxypyridine, nicotinic acid. Flavonol glycosides: Hibifoline, triflin and melocorine. Triterpines: friedelin, friedelinol and β-amyrin. Flavonoids: vitexin and robunin. Aliphatic compounds: Ethylstearate, tetratriacontanol, nonacosylnon-4-enoate, 24-ethyl-2-metyltritetracont-1-ene-3, 23-diol and 27-methyloctacosane-1, 3-diol. And β-D-sitosterol, sterarate, D-glucoside, cyclopeptide alkaloids, a new pseudooxindole alkaloid, melochironine active compounds have been isolated from *M. corchorifolia* (Bhakuni *et al*. 1987, 1991, Bosch, 2004) [12-14].

The dried powdered leaves of *M. Corchorifolia* showed following composition (dry weight content%), High crude protein content (23.31%), Crude lipid value (13.3%), Low available carbohydrate value (30.03%), High dietary fiber content (23.33%), High ash content (620.16% wet weight), Low energy value (275.66kcal/100 g).

Minerals

Potassium (7.25 mg/100 g dry weight), Sodium content (90.00 mg/100 g dry weight) is the lowest among the macro elements determined. Other mineral composition in mg/100 g dry weight is: Copper (33.50), Iron (19.91), Manganese (9.68) and Zinc (6.73) (Umar *et al*. 2007) [15].

Conclusion

Plants are natural sources of bioactive compounds to treat various life threatening diseases. *Melochia corchorifolia* has showed various phytochemicals which means that it can be used for treating diseases. The study shows the activity of various parts of the plant. Considering all the above medicinal importance of *Melochia corchorifolia* it can be concluded that further studies on these plants may helpful for future researchers to develop some new medicinal drugs.

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