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Ethanobotanical Uses and Phytochemical analysis of *Abelmoschus manihot* (L.) Medik

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Abstract
Abelmoschus genus belong to the family of flowering plants called *Malvacea*e this genus, also known as *okra* is composed of numerous species of flowering plants in the mallow family and they are native to tropical and sub-tropical areas. This plant has various local names such as *Raan bhendi*. The plant having great ethanobotanical values. The present study deals with the Ethnobotanical values, morphological characters and phytochemical values. The preliminary study shows the presence of alkaloids, carbohydrates, tannins, steroids and glycosides. Phytochemical investigation of *Abelmoschus manihot* (L.) Medik Leaves, stem, and root including determination of ash value and total moisture value.

Keywords: species, phytochemical value, alkaloids, Ethanobotany

Introduction
World Health Organization has reported that nearly 65-80% of world's population in developing countries depends on the traditional medicine for their primary health care and treatment of various diseases. Medicinal plants are a rich source of bioactive phytochemicals or bio nutrients. Which provide health benefits for humans further than those attributed to macronutrients and micronutrients Phytochemicals (from the Greek word Phyto, means Plant) are biologically active naturally occurring chemical compound in plants [1]. Phytochemicals are primary and secondary compounds. Primary Compounds contributing directly to growth and development, including photosynthesis, respiration, and protein synthesis. Compounds such as carbohydrates, lipids and amino acids. Secondary compounds like Alkaloids, Tannins, Flavonoids, etc. they are not in role of plant growth and development. They only for the protection from herbivores. In general, the plant chemicals that protect plant cells from environmental hazards such as pollution, stress, drought, UV exposure and pathogenic attack are called as phytochemicals [2].
The medicinal plants are useful for healing as well as for curing of human disease because of the presence of phytochemical constituents. More than 4,000 phytochemicals have been cataloged and are classified by protective function, physical characteristics and chemical characteristics and About 150 phytochemicals have been studied in detail [3].
A large annual erect hairy herb or undershrub, represented by *Abelmoschus manihot* (A. manihot) (Linn.) Medik (Malvaceae) Synonym*: Hibiscus manihot* Linn is medicinally important plant of the Malvaceae family commonly known as 'Jangali bhendi' is a 1.2-1.8 m. high, commonly found on the Kokan, Western Ghats and Western coasts of India. The habit become herb or shrub. The plant glabrous densely hispid the leaves 5-30 cm in length and 3-9 lobed their base become corded, their margin dented or seriate. The petiole of leaf 2.5-23.0 cm long. The pedicle of flower 1-4 cm long. Flower having epicalyx segment that become 4-6. The calyx size 2-3 x 0.5-2.0 cm the corolla of flower become yellow with small purple at center. The capsule 3-7 x 1.5 – 2.5 cm, acuminate with 5 prominent costa. Seeds 3-4 cm long with stellate hairs in concentric rings [4], [12].

Taxonomical Classification
Kingdom: Plantae
Class: Eudicots
Order: Malvales
Family: Malvaceae
Genus: *Abelmoschus*
Species: *manihot Linn.*

Preferred Scientific Name
- *Abelmoschus manihot Linn*

Other Scientific Names
- *Abelmoschus caillei (A.Chev.) Stevels*
- *Abelmoschus manihot var. dissecta*
- *Abelmoschus manihot var. megaspermus Hemadri*
- *Abelmoschus manihot f. platidactylis Bakh*
- *Abelmoschus manihot var. timorensis (DC.) Hochr*
- *Abelmoschus platidactylus (Bakh.) Nakai*
- *Abelmoschus pseudomanihot (DC.) Endl*
- *Hibiscus manihot Linn.*

Vernacular Names / Common Names
- **English –** Sweet Hibiscus, Edible Hibiscus, Manihot-mallow, Sunset Hibiscus, Yellow Hibiscus.
- **Hindi-** Jungli bhindi
- **Marathi-** Raan Bhendi
- **Assamese –** Usipak
- **Gujarati-** Kantalo bhende.

Ethanobotanical Uses

Abelmoschus manihot (L.) Medik Flower, leaves, root are traditionally used in the treatment of various diseases for long time [13]. The leaves of this plant reported for antinflammatory activity Bark is considered as an emmenagogue and used to treat wounds and cuts. Stems reported for wound healing activity [5]. Roots of this plant reported for larvicidal activity. Leaves showed bone-sparing effect. Root paste and leaves useful for boils, sores, sprains, inflammations, tuberculosis and leucoderma [6]. The juice of the flowers is used to treat chronic bronchitis and toothache [7]. Flowers reported as a neuroprotective and antiviral [8].

Materials and method

Collection of plant material

Fresh plants were collected from Trimbakeshwar Hills, Nashik, Maharashtra, India. The plant *Abelmoschus manihot* (L.) Medik It was identified and authenticated at Department of Botany, Sanjivani Arts, Commerce and Science College Kopargaon (Maharashtra). The leaves, Root and Stem were separated from the plant washed, and shade dried then milled in to fine powder be a mechanical grinder.

Preparation of extract

50 g of the each powdered material was extracted with 500 ml of alcohol in a macerator at a room temperature. Extract was filtered and concerted by evaporation to dryness at room temperature. A semisolid material was obtained. The yield of the each extract material was calculated. The stem, root, leaves and bark extract was then subjected to qualitative analysis and quantative analysis such as extractive value, moisture content, ash value Phytochemical tests etc. [9], [10], [11].

Result

Physico-chemical analysis

In quantitative analysis, Alcoholic extract of *Abelmoschus manihot* (L.) Medik showed the following results were tabulated the percentage of ash value, and moisture content in Stem, Leaf, and Root sample. (Table. 1)

Table 1: Ash values and Moisture content of Alcoholic extract of *Abelmoschus manihot* (L.) Medik.

S. N.	Parameters	Values in percentage (%)		
		Root	Stem	Leaf
1	Ash value	1.4	5.4	7.8
2	Moisture content	2	4	3
3	Extractive value	5	3	4

Phytochemical analysis

In qualitative analysis, Alcoholic extract of *Abelmoschus manihot* (L.) Medik. Showed the presence of secondary metabolites such as carbohydrates, glycosides, and alkaloids, steroids and tannins are absence in phytochemical screening which are depicted in table 2.

Table 2: Preliminary phytochemical screening of Alcoholic extracts of *Abelmoschus manihot* (L.) Medik.

S. N.	Chemical constituents	Tests	Alcoholic extracts		
			Leaf Extract	Root Extract	Stem Extract
1	Carbohydrate	Molish's Test	+	+	+
		Felhings Test	-	-	-
2	Alkaloids	Tannic Acid Test	-	-	-
		Wagner's Test	-	-	-
3	Glycosides	Legal's Test	-	-	-
		Keller- Killiani Test	+	+	+
4	Tannins	dil. HNO_3 Test	-	-	-
		dil. Iodine sol.	-	-	-

Conclusion

The present study showed the pharmacognostical and phytochemical analysis the leaves, stem and root of *Abelmoschus manihot* (L.) Medik. Pharmacognostical studies like physicochemical analysis of leaf, stem and root extracts of *Abelmoschus manihot* (L.) Medik. Provides valuable information to the identification and authentication of this plant materials. Preliminary phytochemical investigation of the alcoholic extract revealed the presence of glycosides, alcoholic stem and bark extract revealed the presence of carbohydrates and glycosides, alcoholic Root extract revealed the presence of carbohydrates, Tannins and glycosides.

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