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PHARMACOGNOSTIC STUDY OF SAPINDUS EMARGINATUS Vahl.

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ABSTRACT

*Sapindusemarginatus*Vahl. a large sized tree belongs to Sapindaceae family, commonly called as Ritha. Ritha is useful medicinal plant used in the treatment different diseases. The Bark and fruit of plant is used by tribals, villagers and herbalist to treat eye diseases, diarrhea, Paralysis, Asthma, Nausea, Severe headache, Snake bite, Toothache, Dysentery and effective to reduces hair loss. The Pharmacognostic studies of plant drug is carried out for evaluation of drug and to detect the adulteration. It includes dermal characters like trichomes, stomata and anatomical features. The plant was analyzed for its preliminary screening of phytochemicals. The result reveals that the presence of bioactive constituents comprising Alkaloid, Tannin, Reducing sugar, Flavonoids, Saponins, Glycosides and Cardaic Glycosides. Antimicrobial assay also conducted to prove the proclaimed ethnobotanical claims. Present study helpful to standardize or evaluation of drugs.

*KEYWARDS-Sapindusemarginatus*Vahl. Pharmacognostic studies, Phytochemicals, Diseases, Mahur forest.

INTRODUCTION

*Sapindusemarginatus*Vahl. is a large tree; young shoot is covered with rusty tomentose. Leaves are abruptly pinnate, leaf lets are subopposite. Flowers are interminal panicles, male flowers are many and bisexual few, pedicel is short, panicle is covered with rusty timentose, sepals are greenish with rusty tomentose, and petals are white free. Drupes are lobed clothed with rusty tomentose, dark brown. Seeds are black, smooth.*Sapindusemarginatus*Vahl. is used by the used by tribals, villagers and herbalist to treat of difeerent diseases.(Fig.1)

The leaves are used in the treatment of heaveycold (Bharath Kumar and Suryanarayana,2008). Fruits are used as hair tonic (Vijigiri and Sharma,2010). Fruit s are used in the treatment of Severe headache and snake bite(Gurrapa and Mamidala, 2018). Powdered seeds used to cure toothache and fruit pulp is used in dandruff (Nanda et.al., 2013). Fruit is used in the treatment of asthma, colic and dysentery and Nausea(Bhaskar,2018, Maury and Dongarwar,2012). Fruit is used in the treatment of diarrhea Nausaiaand paralysis of limbs (Lenin Bapuji and VenkatRatnam, 2009).

MATERIAL AND METHODS

a)Plant material:

The Fruit and Stem Bark of *Sapindusemarginatus*Vahl. were collected from College Campus NutanMahavidyalayaSailu, Dist. Parbhani Maharashtra. The collected plant was taxonomically identified by using renowned floras (Naik 1979, Naik*et al* 1998., Chetty*et al*.

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2008 and Yadav and Sirdesai 2002). The voucher specimen was deposited in Department of Botany, NutanMahavidyalaySailu, Dist. Parbhani. The Fruit and Stem Bark were shade dried and powdered. The powdered Fruit and Stem Bark were successively extracted with different solvent. The leaves and stem were used for the study of macroscopic and microscopic characters.

b) Preliminary phytochemical Screening:

Phytochemical screening of Stem bark and Fruits extracts of *Sapindusemarginatus*Vahl. in different solvent were undertaken by using standard method for the analysis phytochemicals like alkaloids, glycosides, flavonoids, tannins, saponins, terpenoids and cardiac glycosides (Harborne,1984).

c) Prepearation of extract:

Fruit and Stem bark powder was subjected to Soxhlet extraction with petroleum ether (60-80^{0}c), Methanol (64.5-65.5^{0}c) and water for 3-4 h in the order of increasing polarity of solvents (Daniel,1991). The extracted solvent is evaporated to make the final volume one fourth of its original volume. Yield of Fruit extracts are 9.2, 10.8 and 12.2 % respectively and Yield of Stem bark extracts are 10.3, 14.8 and 19.5 % respectively. Both extracts are stored at 4^{0}c in airtight bottles for further study.

Pharmacognostic studies:

Macroscopic study:

Morphological studies were done using simple microscope. The shape, apex, base, margin, taste and odour of plant powder was observed.

Microscopic studies:

The free hand transactions of stem were taken and stained by using double stained differential staining technique and mounted in DPX (Johanson,1940). Photographs were taken with the help of digital camera. The leaf is peeled off for the study of stomata and the trichomesof upper and lower epidermis..

OBSERVATIONS

T. S. of Stem: The transverse section of stem is wavy in outline. The single outermost layer is epidermis with thick cuticle. On epidermis less number of stomata are present. Beneath the epidermis thick hypodermis is present followed by multilayer parenchymatous cortex. The pericycle and endodermis is not clearly visible. Next to the parenchymatous cortex a ring of conjoint, collateral and open vascular bundles are present. Pith is parenchymatous ,multialayered and present in center. (Fig.2)

Stomata: The stomata reported on lower surface. The stomatas of lower surfaces are Anomocytic, the guard cells are surrounded by 5 to 6 subsidiaries.(Fig. 3 A and 3B).

Trichome: The trichomes are reported on both the surfaces of leaf.The trichomes of both the surfaces areUnisariate filiformwith cytoplasmic content, the foot is embedded into epidermal

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cell and tip of the trichome is pointed. The trichomes of upper are longer than lower surface.(Fig. 4 A and B)

Phytochemical constituents: The preliminary phytochemical analysis of Stem bark and Fruit shows the presence of Reducing Sugar, Tannin, Flavonoids, Glycoside, Cardic glycosides, Alkaloid, Saponins.The Anthraquinones, Phlobatannins and Terpenoidare absent (Table. 1).

Powder analysis: The Fruit powder was characterized by its morphological features like yellowcolour; presence of specific odour and bitter taste. The Stem Bark powder was characterized by its morphological features like Yellow browncolour; presence of specific odour and bitter taste (Table. 2&3)

DISCUSSION AND CONCLUSION

The present study shows that the *Sapindusemarginatus*Vahl. used by Tribals, Villagers and Herbalist to treat various diseases. The extracts of stem bark and fruits of *Sapindusemarginatus*Vahl. contains various bioactive compounds like Reducing Sugar, Tannin, Flavonoids, Glycoside, Cardic glycosides, Alkaloid, Saponins. The presence of this bioactive compound this plant is used in traditional medicine to cure various diseases. Phytochemical analysis of is very important in identifying new sources of therepeutical and industrial importance (Savitraramma et.al. 2011). The pharmaceutical and antimicrobial studies could be done that will further elucidate and characterize the active components and authenticate its folkloric efficacy.

Fig. 1.*S. emarginatus*

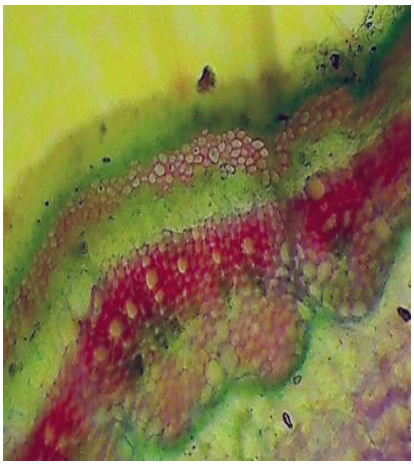

Fig. 2. T. S. Of Stem

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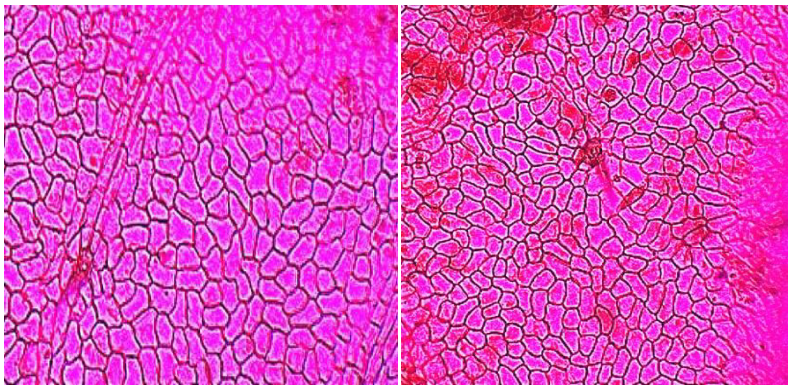

Fig. 3.A- Stomata Lower epidermis

Fig. 3.B- Stomata Upper epidermis

Fig. 4.A- Trichome Upper epidermis

Fig. 4.B- Trichome Lower epidermis

Sr.No	Phytochemical	Stem bark	Fruit
1	Reducing Sugar	+	+
2	Tannin	+	+
3	Flavonoids	+	+
4	Glycoside	+	+
5	Cardic glycosides	+	+
6	Anthraquinones	-	-
7	Phlobatannins	-	-
8	Terpenoid	-	-
9	Saponins	+	+
10	Alkaloid	+	+

Table 1-Preliminary Phytochemical screening of Stem Bark and Fruit

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Sr. No.	Test	Observation	Inference
1	Colour	yellow	Seed of *S.emarginatus*
2	Odour	Specific	Aromatic Crud Drug
3	Taste	Bitter	Drug Contain Alkaloid

Table 2-Preliminary Test (FruitPowder)

Sr. No.	Test	Observation	Inference
1	Colour	Yellow brown	Stem Bark of*S.emarginatus*
2	Odour	Specific	Aromatic Crud Drug
3	Taste	Bitter	Drug Contain Alkaloid

Table 3-Preliminary Test (Stem Bark Powder)

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