HEMIGRAPHIS COLORATA: A REVIEW

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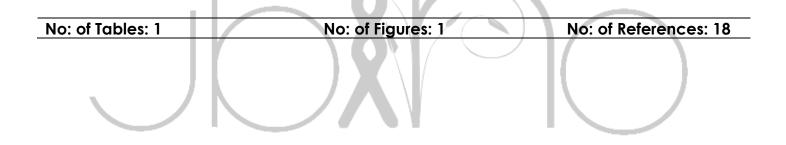
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ABSTRACT

Hemigraphis colorata (syn: Hemigraphis alternate) is a tropical perennial herb chiefly grown as anornamental plant, belongs to the family Acanthaceae. In folk medicine, the leaves are ground into a paste and applied on fresh cut wounds to promote wound healing and used to treat anaemia. In Kerala, the plant is popular in the name 'murikootti' because of its incredible potency to heal wounds. Hemigraphis means 'half writing' because the filament of the outer stamen bear brushes. This literature review was intended to summarise traditional uses of *H*. Colorata.

KEYWORDS: Hemigraphis colorata, phytochemistry& pharmacological effects.



INTRODUCTION

The Hemigraphis colorata plant commonly called as purple waffleplant belongs to the family Acanthaceae. It is a prostrate growing plant with spreading, rooting stems. Its stainy leaves are slender lance shaped with toothed, and scalloped or lobed margins. They are greyish green stained with red purple above and darker purple beneath [1]. The tiny white flowers grow intermittently throughout the year. This plant reaches a height of 15-30 cm and has an indefinite spread. It is claimed in folk medicine that the plant has very good wound healing activity^[2,3].

PLANT PROFILE

Scientific classification

Kingdom	:	Plantae	
Order	:	Lamiales	
Family	:	Acanthaceae	
Genus	:	Hemigraphis	
Species	:	Colorata	
Synonym	:	Hemigraphisalternate	



Fig. 1: leaves of Hemigraphis colorata

DISTRIBUTION

-Ornamental indoor and outdoor plant for its attractive foliage.

-Cultivated in manila and native to tropical Malaysia,South - East Asia ^[4].

PHYTOCHEMISTRY

Phytochemicals have been used as drugs, dyes, and food supplements.The phytochemicals are variety of secondary metabolites, with contributive curative property.The phytoconstituents present in *H. colorata* are saponins, flavonoids, terpenoids ^[5]coumarins, carbohydrates, carboxylic acid, xanthoproteins,phenols,s tannins, proteins, alkaloids, steroids and sterol^[1].

Table:1 Result showing phytochemical constituents of Hemigraphis colorata					
COMPOUNDS	PETROLEUM	CHLOROFORM	ETHANOL	WATER	
	ETHER				
ALKALOIDS	-	+	-	+	
PHENOLS	+	+	+	+	
FLAVANOIDS	+	+	+	+	
SAPONINS	+	+	+	-	
STEROIDS	+	+	+	+	
TANNINS	+	-	+	_	
CARBOHYDRATES	-	+	+	+	

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PARTS UTILIZED

Mainly leaves are used for the medicinal purpose. The leaves are opposite, ovate to cordateabout 2-8cm long and 4-6cm wide, bearing well defined veins. They are greyish green stained with red purple above and darker purple beneath.100 grams of fresh leaves reported to yield 0.351 grams of potassium [6, 7, 8].

TRADITIONAL USES

Leaves are mainly used to cure for wound, gallstones. It is used as diuretic. InJava, leaves are used in treatment of bloody dysentery and haemorrhoids [9, ^{10]}.The leafy decotion used to treat excessive menustration. Externally used for skin complaints. Paste of leaves applied to fresh cut wounds to stop bleeding and promotehealing ^[2, 3]and also used for anaemia ^[10]. The leaf buds saueezed in water and drunk for 4 days as contraceptive and to induce sterility [11].

PHARMACOLOGICAL STUDIES

Purifying Phytoremediation/Indoor Air Plant:

Volatile organic compounds (VOCs) including benzene, xylene, hexane, heptane, octane, decane, and trichloroethylene and methylene chloride have been known to cause various illnesses when people are exposed to them in indoor spaces. Studies have shown that H.colorata had the highest removal rates of VOCs which is known as photoremediation^[12].

Antibacterial Activity

Antibacterial screening showed the benzene extract demonstrated maximum zone of inhibition against the pathogen Acinobacter species and S.aureus [13] due to the presence of phenolic compounds^[14].

Wound healing Activity

Study evaluated the wound healing activity of methanolic extract ointment of dried leaves of H.colorata in albino rats using excision and incision models^[15].In the excision model, results showed significantly higher wound closure than control while in the incision model, the tensile strength of treated wounds was higher^[16]. The results encourage the use of H.colorata in the topical management of wounds^[1].

Anti -Diabetic Activity

Study of n-hexane and ethanol extracts of whole plant showed lowering of blood glucose in glucose fed rats. The effect was attributed to steroids and coumarins present in the extract ^[10].

Anti-oxidant/Antiinflammatory/Cytotoxicity

The antioxidant activity mainly due to the presence of phenolic compounds ^[14]. Ethanolic extract of leaves of H.colorata have more antioxidant and antiinflammatory activity than chloroform and acetone extracts. The plant also has cytotoxicity against DLA lines up to a concentration of 200µg/mL in short term bioassay ^[17, 18].

CONCLUSION

H.colorata is a traditional medicinal plant mainly used to treat cuts and wounds. To find the specific constituent in *H.colorata*, a systematic screening and characterisation of active principle is needed. Such studies will help in the development of noval drugs.

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