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Preliminary phytochemical analysis of *Antidesma ghaesembilla L.*

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ABSTRACT

Antidesma ghaesembilla commonly known as Jondhurli it grows gregariously on open grasslands and scattered in mixed forest. Plantation can be raised both on irrigated and dry lands. Root suckers are freely produced and help in vegetative propagation. The plant is traditionally reported to possess astringent, bitter, alterative, aphrodisiac, anthelmintic, antibacterial and anti-asthmatic properties. As per phytochemical investigation, the ether, methanol and aqueous extract used for testing various chemical compound.

Keyword: *Antidesma ghaesembilla, Phytochemical*, Traditional aphrodisiac, anthelmintic.

INTRODUCTION

India is sitting on a goldmine of well-recorded and traditionally well-practiced knowledge of herbal medicines, therefore, any scientific data on such plant derivatives could be of clinical importance. *Antidesma ghaesembilla* widely distributed throughout Inda. It holds an important place because of its medicinal and other miscellaneous uses. Antidesma ghaesembilla of economic value. It is one of the most beautiful tree has been put off some useful purpose. Is extensible used in Ayurveda, Unani and Homeopathic medicine and has become a cynosure of modern medicine. Commonly it is used as tonic, astringent, aphrodisiac and diuretics. A large shrub or small tree. Leaf – broadly elliptical or obovate, rounded, petiole long, stipules long, pubescent, acute. Flower – greenish – yellow, sessile, in paniculata spikes, across, hairy, pubescent. Fruit- drupe, dark purple when ripe.

METHODOLOGY-

The plants collected during the tours. The entire plant or its parts i.e. stem, root, leaves, bark, fruits were used for the phytochemical studies.

The plants were washed properly with distilled water, chopped in small pieces and dried in shead. After drying they are granded in powder which was later kept in polythene bags. This was later used for the phytochemical analysis.

Procedure

The procedure of Chhabra et.al., (1984) was adopted here. Qualitative detection of the compounds was done by soaking 10g powder of plant material in 100ml of petroleum ether. After 24 hours, petroleum ether was distilled off and the residue was dissolved in 25ml ethanol and divided in to two portions (A) and (B). Portion A divided in two parts (A.1&A.2). Portion (A.1) of the extract was tested was tested for alkaloidal bases and volatile oils. The other portion (A.2) was saponified with 5ml of alcoholic potassium hydroxide(0.5N) by refluxing on water bath for 90 minutes. The alcohol was distilled off and residue was redissolved in hot distelled water (10ml). The non-saponifiable (A.2.1) was extracted in ether (3x5ml) and tested for presence of carotenoids, steroids/triterpenoids. The alkaline aqueous solution was acidified (pH 3-4) with concentrated hydrochloric acid and extracted in ether (3x10ml). This ethereal solution (A, 2.2) was tested for coumarins, emodins, fatty acids and flavonoids.

The plant residue marked (B) which was exhausted with ether, was extracted with hot methanol(100ml) and kept overnight for extraction by facilitated diffusion technique (Keen, 1978) on a orbital shaker at 150 rpm. The methanol extract was decated off in another flask and it was reduced to 1/3 of its volume under vacuum at 40^0 C. It was divided in two portions (B.1&B.2). Portin (B.1) was tested for alkaloida salts, reducing compounds and tannins. The other remaining portion (B.2) was hydrolysed with hydrochloric acid (5ml 10%) by refluxing on water bath for 30 minutes. Contents were cooled and after adding water (10ml), extracted with ether (3x10ml). The ethereal solution(B.3)was tested for anthracene glycosides, coumarins, flavonoids, steroids and triterpenoids. Acidic solution (B.4) was tested for anthocaynin and anthocyanidin.

The plant residue marked (C), exhausted with ether and methanol, was extracted with hot distilled water(100ml) and kept overnight to ensure complete extraction. The water extract was reduced to 1/3 ot its volume under vacuum and divided into two portions. the portion (C.1) was tested for alkaloidas salts, ployosed, polyuronoids, reducing compounds, saponin, starch and tannin. The portion (C.2) was hydrolysed with hydrochloric acid (5ml 10%) by refluxing on water bath for 30 minutes. Contents were cooled and after adding water (10ml) extracted with ether (3x10ml). The ethereal solution (C.3) was tested for anthracene glycosides, coumarins, flavonoids, steroids and triterpenoids. Acidic soulution(C.4) was tested for anthocaynin and anthocyanidin.

RESULT AND DISCUSSION

Preliminary phytochemical screening of the presence of various phytocompounds is tabulated in the table 1, and 2. The maximum number of phytocompounds were seen in the ether extract which showed the presence of Alkaloids, Coumarins, Emodins, Fatty acids and Flavonoids, whereas the presence of Alkaloids, Anthocyanin and Coumarins presence in the methanol extract, on the other hand Anthocyanin, Flavonoids and Polyuronoids are presence in the aqueous extract. After surveying all the available paper, journals and books about plant *Maytenus senegalensis.*

Table 1: Preliminary Phytochemical Screening of : *Antidesma ghaesembilla*

Parts used	Alkaloids			Anthocyanin/ Anthocyanidin		Anthracene Glycoside		Anthroquinone
	Ether	Methenol	Water	Methanol	Water	Methanol	Water	
Leaf	++	-	-	+	+	-	-	-
Stem	+	-	-	+	+	-	-	-
Flower	+	-	-	-	+	-	-	-

Table 2: Preliminary Phytochemical Screening of: *Antidesma ghaesembilla*

Parts used	Carotenoids	Coumarins			Emodins	Fatty Acids	Volatile oils
	Ether	Ether	Methenol	Water	Ether	Ether	Ether
Leaf	-	+	-	-	-	-	-
Stem	-	-	+	+	-	-	-
Flower	-	-	-	-	-	+	-

We can certainly conclude that, a number of compounds can be isolated by means of different extraction procedure following their through characterization and optimization. Study of pharmacological activities with different extract, which show that the compounds have beneficial effects against a number of diseases.

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