



Research Article

PRELIMINARY PHYTOCHEMICAL EVALUATION OF LEAVES OF *MEYNA LAXIFLORA*Quazi Majaz A.^{1*}, Molvi Khurshid I.²¹Ali- Allana College of Pharmacy Akkalkuwa, District Nandurbar, Maharashtra, India²Ibn. Sina National College for Medical Studies, Jeddah, Kingdom of Saudia Arabia

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ABSTRACT

Meyna laxiflora is a plant which having traditional importance for its medicinal uses, for treatment of Inflammation, Gastrointestinal disorder etc. despite of its traditional importance no exhaustive phytochemical data is available for that the present study undertaken for qualitative and quantitative evaluation of leaves. Results reveal that aqueous extract having highest content of most of phytochemicals as compare to other extracts. Outcome received from this study will be very useful in further research.

Keyword: *Meyna laxiflora*, phytochemistry.

INTRODUCTION

Meyna laxiflora is small or medium size tree, Bark light black, and smooth. Leaves are opposite or whorled, 3.5-15 X 1.2-10 cm, elliptic-oblong, shining, glabrous; flower greenish yellow, in axillary cymes or fascicled on leafless wood; fruits nearly globose, fleshy, smooth, purplish when ripe. It is distributed all over the satpuda region in Nandurbar district, India it is found in Sawarimal, Umarpata, Morkaranja and kondaibari.¹ Five pinches of seed powder is mixed with water and given twice a day for 15 days for kidney stone in Nashik District.² Leaves are chewed for abdominal distention in North West Maharashtra, India.³ Seed powder with water is used as abortifacient activity in Aasam.⁴ Young fruits are eaten as vegetables. Dried fruits are Narcotic, used in dysentery. Ripe fruits consumed as a food.⁵ S. Wangmo *et al* performed pharmacognostic study on leaf and stem which reveals that Leaf contain high concentration of Carbohydrate, Protein, Tannin, Saponin, Alkaloids, Glycosides as compare to stem.⁶ Earlier ethnomedicinal survey reveals that tribes of Satpuda hills from various villages are using plant for treatment of Inflammation, Gastrointestinal disorder, Kidney stone etc. and also used as food material. Most of the ailments such as stomach ache, menstrual problems, urinary problems, and diarrhea can be cured by oral administration of powder with water and wounds, inflammation can be cured by topical application while fruits are used for food in both forms ripe or unripe.⁷ It indicate that *Meyna laxiflora* have important role in tribal people as medicine and food but no exhaustive data is available for standardization and identification of plant. Hence, there is need to undergo an exhaustive phytochemical study which will be very useful in further research.

MATERIALS AND METHODS

Collection of Plant Material

The Plant *Meyna laxiflora* was collected from Satpuda hills Dev Goi, Akkalkuwa, Dist: Nandurbar, Maharashtra, India and authenticated by Dr. M. B. Patil, HOD, Department of Botany, J. E. S. Arts, Sciene and Commerece College, Nandurbar, India by comparing morphological features and a

sample voucher specimen of plant was deposited for future reference (Voucher specimen number QMA-01).

Preparation of extract

The leaves of *Meyna laxiflora* were collected and dried in the shade and then pulverized in a grinder. The powdered drug was utilized for extraction. Material was passed through 120 meshes to remove fine powders and coarse powder was used for extraction. A method described in Mukherjee was used for extraction of powdered drug. Extraction was done by Pet. Ether, Chloroform, Methanol and water.^{8,9}

Macroscopic evaluation

Different parameters were studied in macroscopic evaluation of the leaf of *Meyna laxiflora*, which are color, odor, size and shape.¹⁰

Microscopic evaluation

Thin transverse section of fresh leaf was taken, stained with phloroglucinol-HCL, concentrated H₂SO₄, and iodine solution and observed under 10X and 45X. The transverse sections were studied. The microscopic powder characteristics of leaf of *Meyna laxiflora* were performed.^{9,10}

Evaluation of Physical Parameter

In Physical parameter foreign organic matter, loss on drying, ash value, Total ash, sulphated ash, acid -insoluble ash were determined.¹¹

Determination of Extractive value

Different extractive values like alcohol soluble extractive, water soluble extractive values were performed by standard method.¹¹

Phytochemical analysis

The extracts were then subjected to preliminary phytochemical screening to detect the presence of various phytoconstituent.^{10,12} Quantitative Phytochemical analysis were performed as per Table 1.

Table 1: Summary of Quantitative Estimation of Phytoconstituents

S. No.	Phytoconstituents	Method	Standard
1	Carbohydrate	Phenol sulphuric acid method ¹³	Glucose
2	Protein	Barford method ¹²	Albumin
3	saponin	Simple Solubility method ¹⁴	---
4	Steroids	Lieberman- Burchard reaction mthod ¹⁵	Diosgenin
5	Alkaloids	Bromocresol Green reagent ¹⁶	Atropin
6	Flavonoids	Aluminium Chloride colorimetric method ¹⁷	Quercetin
7	Tannins	Foilin Denis reagent ¹⁸	Tannic acid
8	Total Phenolic	Folin Ciocalteu method ¹⁷	Gallic acid

Table 2: Morphology of *Meyna laxiflora* Leaf

S. No.	Character	Observation
1	Colour	Green
2	Odor	Characteristics
3	Taste	Characteristics
4	Size	Varying in size

Table 3: Physical Parameters of *Meyna laxiflora* Leaf

S. No.	Parameter	Value (%)
1	Foreign organic matter	1.35 + 0.04
2	Loss on drying	9.51 + 0.09
3	Ash value	13.58 + 0.06
4	Water soluble ash	4.33 + 0.06
5	Acid -insoluble ash	2.26 + 0.10
6	Sulphated ash	12.35 + 0.05

Table 4: Extractive Values of the *Meyna laxiflora* Leaf

S. No.	Extractive	Color	Extractive value (% w/w)
04	Petroleum Ether	Yellowish green	2.14 + 0.03
03	Chloroform	Green	4.37 + 0.08
02	Alcohol soluble	Dark green	6.42 + 0.05
01	Water soluble	Dark green	8.53 + 0.03

Table 5: Qualitative Phytochemical Analysis of *Meyna laxiflora* Leaf

S. No.	Parameter	Petroleum ether Extract	Chloroform Extract	Methanol Extract	Aqueous Extract
1	Carbohydrate	+	+	+	+
2	Protein	-	-	+	+
3	Amino acid	-	-	+	+
4	Steroids	+	+	-	-
5	Cardiac Glycosides	-	-	+	+
6	Anthroquinone Glycosides	-	-	-	-
7	Saponin Glycosides	+	+	+	+
8	Cyanogenetic Glycosides	+	+	+	+
9	Coumarin Glycosides	-	-	-	-
10	Alkaloids	-	+	+	-
11	Flavonoids	-	+	+	+
12	Tannins	-	+	+	+

Table 6: Quantitative Phytochemical Analysis of *Meyna laxiflora* Leaf

S. No.	Parameter	Petroleum ether Extract	Chloroform Extract	Methanol Extract	Aqueous Extract
1	Carbohydrate	04.17 + 0.14	08.38 + 0.27	07.14 + 0.31	12.41 + 0.08
2	Protein	-	-	04.27 + 0.13	06.38 + 0.21
3	Saponin	09.31 + 0.47	-	02.19 + 0.31	04.28 + 0.16
4	Steroids	17.68 + 0.12	08.25 + 0.09	-	-
5	Alkaloids	-	02.49 + 0.15	04.21 + 0.05	-
6	Flavonoids	-	13.50 + 0.14	17.47 + 0.24	23.31 + 0.07
7	Tannins	-	08.47 + 0.15	11.61 + 0.14	18.12 + 0.22
8	Total Phenolic	-	14.74 + 0.19	15.21 + 0.08	20.67 + 0.15



Figure 1: Morphology of *Meyna laxiflora* Leaf

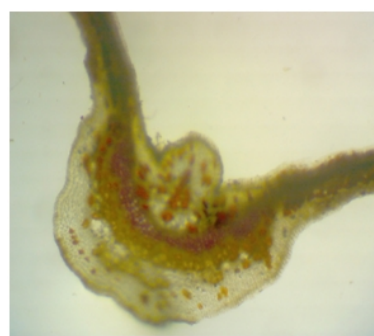


Figure 2: Transverse section of *Meyna laxiflora* Leaf

RESULTS AND DISCUSSION

Leaves are Ovate-oblong arranged oppositely or whorls of three. Strong spines are bent at an acute angle, shining with smooth texture. The length of the leaf is between 4.0 to 15 cm and the breadth is between 1.5 to 9 cm. Petioles are comprised between 1.0 to 3.0 cm. Leaves have characteristic odour and taste. (Table 2) The upper and lower epidermis consists of compact cells with cuticle. Paracytic Stomata available at lower surface of the leaf. The mesophyll tissue consists of upper palisade cells and few layers of lower spongy cells. Collenchymas available at below upper and lower epidermis, midrib contain vascular bundle in which xylem is surrounded with phloem. Starch grains and calcium oxalate crystals are also found. The physical parameters like foreign organic matter, loss on drying, ash value, Total ash, sulphated ash and acid-insoluble ash were determined. (Table 3) Different extractive values like alcohol soluble extractive, water soluble extractive values were mentioned in Table 4. In Preliminary phytochemical petroleum ether extract contain steroids, carbohydrate and glycoside the chloroform extract contain steroids and alkaloids, the methanolic extract contain Saponins, Alkaloids, Glycosides, Flavonoids, Tannins, Carbohydrates, Proteins and aqueous extract contain Saponins, Glycosides, Flavonoids, Tannins, Carbohydrates, Amino acids. (Table 5) Quantitative tests were performed for Carbohydrate, Protein, Steroids, Glycosides, Alkaloids, Flavonoids, Tannins and Total Phenolics. Results showed aqueous and methanolic extract of leaf contain high concentration of most of phytochemicals. (Table 6)

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