



Analytical Aspects of Ziziphus Mauritiana Leaves.

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Abstract :-

Ziziphus Mauritiana leaves are extracted with water and ether the leaves shows fluorescent colour in different reagents. It was tested for carbohydrate, tannin, saponin, and alkaloids etc.

Keyword :- Ziziphus Mauritiana, Ash Values, Ether Extraction, Water Extraction,

Antimicrobial activity. U.V., Phytochemical test, Fluorescence test

Introduction: Herbal medicines are the staple of medical treatment in many developing countries. Herbal preparation are used for virtually all minor ailment individual herbal medicines in developing region very considerably. Herbs in each region have learned over centuries which local herbs have medicinal worth [1]. Ziziphus mauritiana leaves contain 13.17% crude protein and 15% fibre and make an excellent fodder for livestock. In winter, the shoots and fruits of the trees are an important feed source [2]. Ziziphus mauritiana mostly contain alkaloids, Saponin & Flavonoids [3] [4] [5]. They are also used in treatment of cancer and cardiovascular disorder [6]. A survey of literature on ziziphus jujuba lam. revealed a few pharmacological reports on the plant like sedative and hypotonic [7]. Plants are part of life without them nobody can live. Most people believe in Ayurvedic or Unani medicines because they do not show any side effect compared to allopathic medicines, when a plant has antibiotic properties it is called medicinal plants. About 80% of the world population use traditional medicines which are predominantly [8] based on plant material [WHO:1993]. Ziziphus mauritiana commonly known as Ber in India. Ziziphus mauritiana (Indian jujube or Ber) among former is commonly cultivated throughout the northeast of India and in arid parts of south India (Azam et al 2001) (Sunil et al 2009) [9] [10]. It is properly called the King of arid zone Fruits (Shobha and Bharati, 2007) [11].



Experimental Procedure

Collection of Plant Material

Fresh and Healthy leaves and stem of *Ziziphus mauritiana* was collect at the Himayat Bagh, Aurangabad. The plant was identified and authenticated at the Herbarium of Botany Department Of Botany Dr.Babasahec Ambedkar Marathwada Unversity ,Aurangabad.

The leaves are washed throughly with distilled water and dried at room temp.($25\pm 2^\circ$ C) for 15 days than it crush and grinding than coarse powder. The powder was stored in air light bottles.It is kept separatelyin airlight container till the time of use.

Chemical Analysis: The physico chemical parameters of plant extract,were determined which include % of total ash,Acid soluble Ash,Water soluble ash The extract was obtained from the powder(5g) through soxhelet extraction with water and ether The Extracts was concentrated into a semi solid using rotatry evaporatoat 50° C.

Fluorescence Analysis: Fluorescence charecters of the ziziphus mauritiana of the ziziphus mauritiana leaves powder and Visible light with different solvents [12][13].The result are shown in table 1

Ash Values: Total Ash: About 10g of powdered leaves was accurately weighed and taken in a silica crucible, which was previously ignited and weighed. The powder was spread as a fine, even layer on the bottom of the crucible. The crucible was incinerated gradually by increasing temperature to make it dull red hot until free from carbon. The crucible was cooled and weighed. The procedure was repeated to get constant weight [14].

Acid Insoluble ash: The ash obtained as described above was boiled with 25 ml of 1N HCl for five minutes. The insoluble ash was collected on an ash less filter paper and washed with hot water. The insoluble ash was transferred into a silica crucible, ignited and weighed. The procedure was repeated to get a constant weight [15].

Water soluble Ash: The ash obtained as described in the determination of total ash was boiled for 5 minutes with 25 ml of water. The insoluble matter was collected on ash less filter paper and washed with hot water. The insoluble ash was transferred into silica crucible, ignited for 15 minutes, and weighed. The procedure was repeated to get a constant weight. The weight of insoluble matter was subtracted from the weight of the total ash. The difference of weight was



considered as water-soluble ash [14][15]. The result of total ash acid soluble ash, water soluble ash of *Ziziphus mauritiana* leaves are summarized in table2 [14] [15].

Phytochemical Test:

The behavior of the leaves of *Ziziphus Mauritiana* with different chemicals was carried out to observe the colour changes under ordinary light[6]. The leaves of *Ziziphus Mauritiana* show the presence of Alkaloids,Flavonoids,Tannins,Saponins Table3 [16].

Water Extract: Weigh accurately about 10gm dried powder,25ml distilled water and boil it on slow heat for 30min.and filter It collect the filtrate beaker. Take the residue obtained above, add 25ml distilled water. and repeat the procedure twice. Collect total filtrate in the same beaker.

This filtrate was evaporated by heating it in a boiling water bath till semi-liquid extract form. Then it is dried in an oven at 100° C

till aqueous extractive were obtained and it is used for further chemical Analysis

Ether Extraction: The shade dried water powder of the leaves and stem. *Tinospora cordifolia* (10 gm each) was extracted using 250 ml Round bottom flask of the extraction solvent using soxhlet apparatus. The extracts were concentrated to dryness to yield crude residue. The extracts were auto-calved and stored at 4⁰c until further use. Than ether and alcohol soluble compound was calculated.

Antimicrobial Activity: Antimicrobial activity of *Tinospora* plant was determined against bacterial strain, salmonella typhis Escherichia Coil, Staphy Lococcus acereus Bacillus subtilis by well diffisio assay on agarr plate. The bacterial culiure were grown on nutrient broth for 24 hrs. The activity grown cullirs were spread on nutrient agar plates by spread plate method well was prepared by brose - 20 □ liter sample was poured in the well. Streptomycine antibiotic is used as standard 100 mg 1 ml concentration.

Result and Discussion

Extract of *ziziphus mauritiana* leaves also show charecterstic fluoesence analysis was determined for the powder of *ziziphus mauritiana* leaves with different reagent (table2).The physical parameters of *ziziphus mauritiana* leaves powder like ash value.The leaves also posses Cardiovascular properties. The leaves of *Ziziphus mauritiana* Show the presence of saponins,Flavnoids,Alkaloids,Tannis,Trepenoids (table3).



Table1: Percentage of ash

Sr. No.	Sample (ash)	Percentage
1	Total Ash	7.4
2	Water Soluble	70.57
3	Acid Soluble	90.54

Table No. 2 Color Test

Sr. No.	Colour Test	Colour
1	Powder as Sample	Green
2	Powder +1N NaOH	Yellowish
3	Powder +1N HCl	No Change
4	Powder + 5% KOH	Yellowish
5	Powder + 50% H ₂ SO ₄	Light Green
6	Powder + 50% HNO ₃	Yellowish
7	Powder + Conc. HNO ₃	Orange
8	Powder + Acetic Acid	Light green
9	Powder + Conc. H ₂ SO ₄	Blackish Green
10	Powder + Picric Acid	No Change
11	Powder + Conc. HCl	Greenish

Table No. 3: Phytochemical Test

Sr. No.	Phytochemical Test	Water Extraction	Ether Extraction
1.	Alkaloied	-ve	-ve
2.	Saponins	+ve	+ve
3.	Fluonaid	-ve	-ve
4.	Terepens	+ve	-ve
5.	Tannins	+ve	-ve



Table No. 4:Percentage of Extraction

Sr. No.	Extraction	Percentage
1.	H ₂ O Extraction	70.58
2.	Ether Extraction	28.2

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