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Qualitative Analysis of Legume Pericarp (Pod Wall) and Seeds of *Acacia Farnesiana* L.

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Abstract: *Present study deals with the qualitative analysis of ethanolic extract of Legume pericarp (pod wall) and seeds of Acacia farnesiana (L). In which we analyze 22 Phytochemical, which are use full for controlling the diseases in Human beings. In India, Acacia farnesiana L. is known as Mulla tumma, Kampu tumma in local area and it is commonly known as Aroma and sweet acacia also. The aim of the present study is to investigate the presence or absence of phytochemicals such as Flavonoids, Alkaloids, Steroids, Proteins, Carbohydrates, Tannin, Amides, Terpenoides, Amines, Phenol, Test for Unsaturation, Carboxylic acid, Test for NH_2, Nitrogen, Sulphur, Halogen, Starch, Saponin, Ascorbic acid, Glycosides, Reducing Sugar and Triterpenoids contents of the selected medicinal plants. The ethanolic extract of legume pericarp indicates the presence of major bioactive compound compare to seeds.*

Keywords: *Acacia fernesiana L., qualitative analysis, bioactive compound.*

I. Introduction

Acacia farnesiana L. *g*rown throughout India, and often planted in gardens. If we see its yield, in India and other Eastern countries produce much for local use and Trees begin to flower from the third year, mainly from November to March. The bark of this plant is used as astringent and demulcent. The leaves and roots are used for medicinal purposes. Woody branches used in India as tooth brushes. The gummy roots also chewed for sore throat. The roots of this plant are also used for the antispasmodic, aphrodisiac, astringent, demulcent, diarrhea, febrifuge, rheumatism, and stimulant[1].

The plant is also used as diuretic, treat antiulcer, anti-pyritic etc. Absence of evidence on anti-diabetic activity of *Acacia farnesiana* let us embark on this study with an aim to scientifically prove the traditional claim of this plant[2] . Diabetes Mellitus (DM) is a major degenerative disease [3][4] affecting at least 10% of the population, worldwide. Complications of DM include hypertension, atherosclerosis, microcirculatory disorders, retinopathy, nephropathy, neuropathy and angiopathy[5].

Sweet Acacia is occasionally used as folk remedy by population in areas where it grows abundantly. However, it can hardly be considered as a medicinal plant of widespread usage. It's essential oil, either as a concrete or aas an absolute, has never been used in traditional medicine. It was recently introduced in aromatherapy[6].

The pods are very characteristic, resembling a beaded necklace which are flat, straight or slightly curved, and fleshy when young with reddish hairs, becoming dark blackish when mature. The pods are sweetly scented when crushed and contain a sticky fluid [7].

The pods of A. fernesiana were shown to contain gallic acid and a few derivative (ellagic acid, m-digallic acid, Methyl gallet), various flavonoids ((kaemferol, aromadendrin, diosmetin and narin genin), their glycoside and and galloylglucosides. Tannins were found in significant quantities in the leaves and pods but above all, in the back of tree[8][9][10][11][12].

II. Materials And Methods:-

2.1 Collection of Material:-

The fresh parts of *Acacia farnesiana* (L) were collected from Omerga Tq.Omerga, Dist. Osmanabad, Maharashtra. The plant material were properly washed with tap water and then rinsed with distilled water, dried in oven at 60^0C until plant parts became well dried for grinding. After drying, the plant materials were ground well into fine powder.

2.2Extraction

2.2.1 Preparation of ethanolic extracts from different plant parts (Legume pericarp and seeds):-

For preparation of ethanolic extract, a modified method of Abdulrahman et.al (2004)[13] was used. The fresh parts of the plant were dried in oven and ground to fine powder with mechanical grinder. Ten gram of each plant parts was then macerated in 100 ml of absolute ethanol for 48 hr. & properly covered with foil &

labeled. After 48 hrs of extraction, each extract was filtered through Whatman's filter paper no.1 separately. The filtrate was evaporated to dryness at room temperature & store at 5^0C in refrigerator.

2.3 Qualitative analysis

Qualitative phytochemical analyses were done using the procedures of Kokate, 1994[14] for Alkaloids, carbohydrates, tannins, phenols, flavonoids, and saponins. For Carboxylic acid, test for NH_2, Nitrogen, Sulphur, Halogen, Amides, test for Unsaturation, test for Aromaticity[15]. Test for Starch, Steroids, Proteins, Glycosides, Reducing sugar & Ascorbic Acid[16], test for Amino acid [17], Liebermann - Burchard's test for Triterpenoides, Terpenoides were qualitatively analyzed.

III. Results & Discussion

The phytochemical analysis of *Acacia farnesiana* (L) tested were summarized in Table.1.Which reveled that presence of medicinally active compound in plant. From Table.1 it is concluded that, Legume pericarp (pod wall) contain maximum phytoconstituents than seeds of Acacia. Proteins, Carbohydrate, Tannin, Phenol, Alkaloid, Terpenoid, Steroid, Flavonoids are present in pod wall with maximum quantity. Ascorbic acid and Saponin are absent in pod wall.

Protein, Tannin, Alkaloid, Terpenoid, Steroid are present in seeds of Acacia frenesiana with small quantity. Carbohydrate, Saponin, Ascorbic acid are absent in seeds.

Table 1: Preliminary (Qualitative) phytochemical analysis of Ethanolic extract of *Acacia fernesiana* L.

Sr. No	Compound / Part	Name of the tests	Pod wall	Seed
	Alkaloids	Mayer's reagent	+	+
		Wagner's Reagent	+	+
		Picric acid	+	+
	Amides	Hydrolysis with alkali	+	+
	Amines	Amine test	+	+
	Ascorbic acid	DNPH test	_	_
	Carbohydrates	Benedict test	+	_
	Carboxylic acid	Sodium bicarbonate test	+	+
	Flavonoids	Ammonium Test	+	+
		Aluminum chloride test	+	+
	Glycosides	Fehling solution	+	_
	Phenol	Ferric chloride test	+	+
	Proteins	Millons Reagent test	+	+
	Reducing Sugar	Fehling solution test	+	_
	Saponin	Frothing test	_	_

	Starch	Starch test	+	+
	Steroids	Liebermann - Burchard's test	+	+
		Salkowski's Test:	+	+
	Tannin	Ferric chloride test	+	+
	Terpenoides	Liebermann - Burchard's test	+	+
		Salkowski's Test:	+	+
	Test for amino acid	Ninhydrin Reagent test	+	+
	Test for Aromaticity	Flame test (Ignition test)	+	+
	Test for Halogen	Lassinges test	–	–
	Test for Nitrogen	Lassinges test	+	+
	Test for Sulphur	Lassinges test		
	Test for Unsaturation	$Kmno_4$ test	–	–

+ = presence of bioactive compound – = absence of bioactive compound

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