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PHYTOCHEMICAL INVESTIGATION OF *LEUCAS MARTINICENSIS (JACQ) R.BR AND LAVANDULA BIPINNATA* (ROTH)

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ABSTRACT

The biological active & functional chemical compound present in the plant called as pytochemicals , important source of crude medicine. *Leucas martinicensis (Jacq)R.Br. & Lavandula bipinnata* (*Roth),* aromatic medicinal plants belongs to family Lamiaceae were analyzed for Preliminary pharmacognostical Studies. These plant shows medicinal properties against chronic skin diseases such as- psoriasis and scabies, gastro intestinal troubles, headache, cold, fever, parasitic infection and snake bites. etc. The present investigation shows presence of secondary metabolites like, alkaloids, glycosides, flavonoids, Saponins, phenols, tannins, and essential oils.

Key words: Pharmacognostic study, medicinal uses, *Leucas, Lavandula.*

Introducation :

*Leucas mrtinicensis (*Jacq.) R.Br. Erect ,stout, annual herb , 15-90 cm long tall ; expelling of mosquitoes and bath for hysterial fits and pain for joints.(Kirtikar and Bassu, 1993)

*Lavandula bipinnnata (L) O.Ktze.*Erect,viscid, pubescent herb, 3-100 cm tall ,branched , leaves sessile , seed has highb oil content. Act as antidode againts snake-bite. (Naik V.N,.1998) The prsent investigation includes qualitative phytochemical screening. using different solvents.

Material and methods:

Plant material were collected from field, washed with tap water, shade dried, coarsely powdered and stored in tightly capped containers for further investigation. Dried plant parts were successively extracted with petroleum ether, chloroform, methanol,

using Soxhlet apparatus. The extract was concentrated to dryness at 40^{o}C in rotator evaporator. The yield of each extract was calculated and stored in refrigerator.

Various physic-chemical parameters like ash values (Total Ash, Acid soluble, acid insoluble ash and water-soluble & water–insoluble ash values, extractive values (ethanol and water soluble) were measured following suitable methods (Ccurum,1987: WHO,1998: Mukherjee,2002; Gupta,2003).

The fluorescence characters of the plant powders was studied in both day light and UV light (254 and 365 nm) and after treatment with different regents like sodium hydroxide , picric acid, acetic acid, hydrochloric acid , iodine and ferric chloride (Chase and Pratt,1949; Kokoshi *et., al.,* 1958) The extracts in different solvents like petroleum ether, chloroform, , methanol, and water were subjected to qualitative tests for the identification of phytochemical constituents like, Alkaloids, Glycosides, Steroids, Terpenoids, Flavonoids,Tannins, Saponnins, Quinine, Resin, coumarin, &volatile oil etc. as per the standard procedure (Khandewal,2003 and Evans,2006).

Result and discussion:

In present study the alcohol Soluble Extractive Values (%).of *Lavandula bipinata* for leaf, stem and roots were 67.78, 37.76 and 29.44 %, as against 58.8, 33.92 and 30.4 % respectively water soluble extractive values. Whereas the alcohol soluble values (%) of *Leucas martinicensis* were 72.64 in leaf, 24.96 in stem and 22.04% in root and 68.48, 21.44 and 19.52 % respectively water soluble extractive values. The extractive values were more in alcohol. (Table. 1) The value of the ash content has been presented in Table 2. The effect of various chemicals on color of the powder has been summarized in Table 3A &3B.

The *Leucas martinicensis* shows presence of alkaloids , carbohydrates, terpenoids and tannin in all five solvent extract , glycoside absent in chloroform extract , flavonoid and phenol shows presence in acetone , ethanol and water extracts. Presence of secondary metabolites like alkaloids , phenolic compound, tannins, lignin, starch, saponins,

flavonoids, terpenoids and anthraquinonein the different solvent extracts of leaf extracts of *Lucas martinicensis*.

Lavandula bipinnata (Roth) has alkaloids, tannins and carbohydrates in all extracts. Flavaoinids and glycosides absent only in ethanol and chloroform extracts respectively. Terpenoids , saponins present in three extracts and amino acid absent in both plant extracts. of

Lamiaceae found in Mediterranean countries and some of them produce a high amount of essential oil that help them survive in the hot summer season shows presence of tannin, saponins, and organic acids.(S.M.Venketrshapp,2013)

Table 1: Extractive values

Sr. no.	Name of Plants Fresh	Alcohol Soluble Extractive Values (%).			Water soluble Extractive values (%).		
	Fresh	Leaf	Setm	Roots	Leaf	Stem	Roots
1	*Lavandula bipinata*	67.78	37.76	29.44	58.8	33.92	30.4
2	*Leucas martinicensis*	72.64	24.96	22.04	68.48	21.44	19.52

Table 2: Ash Values

Name of plants	Taotal Ash (%).			A.S.A.(%).			A.I.A.(%).			W.S.A.(%).			W.I.A.(%).		
	Leaf	Stem	Roots	Leaf	Stem	Roots	Leaf	Stem	Roots	Leaf	Stem	Roots	Leaf	Stem	Roo
Lavandula bipinata	4.36	2.1	2.5	3.08	0.44	0.54	1.28	1.66	1.96	3.41	1.65	1.05	0.95	0.45	1
Leucas martinensis	4.22	2.6	6.42	2.62	1.62	4.19	1.6	0.98	2.23	3.27	1.4	5.57	0.2	1.2	0.8

Table 3 A: Effects of chemicals on powdered drugs of Lavanduala bipinnata

Sr No	Reagent	Leaf	Stem	Roots
1	Powder	Olive green	Light green	Light brown
2	Powder + Iodine	Light brown.	Orange	Light brown
3	Pd +5%ferric chloride	Pale yellow	Light brown	Light brown
4	Pd +1N.NaoH	Radish brown	Dark brown	Light brown
5	Pd +Acetic Acid.	Greenish black	Muddily	Faint brown
6	Extracts+Acetic acid+50%H2So4.	Yellowish green	Faint yellow	Faint brown
7	Pd + 505 H2So4	Green	Light yellow	Faint green
8	Pd + concentrate HCl.	Greenish	Light green	Faint yellow
9	Pd + Ammonia.	Lemon yellow	Light green	Faint yellow
10	Pd +Ammonia +pt.ferrocyanide.	Dark green	Light yellow	Faint yellow
11	Extracts +4% NaoH+1%CuSo4.	Faint yellowish brown	Greenish brown	Dark green

12	Extracts +40% NaoH+1%Lead acetate.	Faint yellowish brown	Brown	Yellow brown
13	Pd +50%Nitric acid +ammonia.	Reddish brown	Lemon yellow	Faint oranges
14	Pd +satu. Picric Acid.	Oranges brown	Dark yellow	Light yellow

Table 3 B: Effects of chemicals on powdered drugs of Leucas martinicensis.

Sr. No	Reagents	Leaf	Stem	Roots
1	Powder	Green	Light brown	Light brown
2	Powder + Iodine	Faint brownish	Light greenish brown	Faint orange
3	Pd +5%ferric chloride	Yellow brown	Light brown	Greenish brown
4	Pd +1N.NaoH	Dark green	Wine colour	Faint yellow
5	Pd +Acetic Acid.	Greenish brown	Faint yellow	Faint brown
6	Powder	Light brown	Light brown	Faint brown
7	Powder + Iodine	Dark brown	Muddy brown	Light brown
8	Pd +5%ferric chloride	Dark brown	Greenish yellow	Light brown
9	Pd +1N.NaoH	Dark green	Yellow	Faint brown
10	Pd +Acetic Acid.	Light brown	Greenish yellow brown	Light brown
11	Extracts +4%	Green	Greenish yellow	Yellow

	NaoH+1%CuSo4.		brown	
12	Extracts +40% NaoH+1%Lead acetate.	Yellow	Greenish yellow brown	Light brown
13	Pd +50%Nitric acid +ammonia.	Lemon yellow	Oranges yellow brown	Yellow
14	Pd +satu. Picric Acid.	Dark yellow	Yellowish green	Lemon brown.

Table 4: Preliminary Phytochemical Investigations

Sr.no.	Name of the test	*Leucas martinicensis*					*Lavandula bipinnata*				
		PE	CE	AE	EE	WE	PE	CE	AE	EE	WE
1	Alkaloid	+++	+++	++	++	++	++	++	++	++	++
2	Carbohydrate	++	++	++	++	++	++	++	++	++	++
3	Glycoside	++	--	++	++	++	++	--	++	++	++
4	Flavonoid	-	-	++	++	+++	++	++	++	--	+++
5	Phenol	--	--	+++	++	--	--	-	-	++	+++
6	Amino acid	+	--	--	--	--	--	--	--	--	--
7	Saponin	+++	--	--	++	+++	++	-	-	++	++
8	Tannin	+	+	+	+	+++	+	+	+	+	+++
9	Terpenoids	++	+	++	-	-	--	--	--	++	++
10	Quinine	--	--	++	-	-	-	-	-	++	++
11	Resin	-	-	-	++	-	-	++	--	++	-
12	Volatile Oil	+++	+++	++	++	-	++	+++	+++	++	-++

Conclusion:

In above study we concluded that ***Leucas martinicensis and Lavandula bipinnata*** are good source of alkaloids and tannin found in all solvent extracts strongly followed by volatile oil , glycosides, phenol and flavonoids seen in some solvent.

terpenoid and saponin also found in considerable amount in both plant. Most of compound observed in aqueous extracts. In further study quantification of bioactive needed.

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