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PHYTOCHEMICAL EVALUATION AND CHROMATOGRAPHIC FINGERPRINT STUDY OF LAKSHA (LACCIFER LACCA)

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ABSTRACT

The drug laksha is widely used in ayurvedic preparations both externally and internal purposes. The drug is highly recommended in case of injury, fractures and being used in the formulations laksha guggulu, bala lakshadi tailam, etc., Phytochemical evaluation of the drug helps in the standardization of the drug and gives a light for further study of its preparation. The drug is also having a high market value due to its utility in the industrial level as varnish and coating of tablets.

KEYWORDS: The drug laksha is widely used in ayurvedic laksha guggulu, bala lakshadi tailam, coating of tablets.

INTRODUCTION

The drug laksha is identified as laccifer lacca is an insect origin drug[1], the insect feeds on the juices of the trees like palasha, kusumba, etc., forms a layer over it which is propagated as lac. Based on the form the laksha is of different varities – raw lac, seed lac, button lac, flac lac, etc.[2] The drug is highly recommended in ayurveda for bone related problems specially in case of fractures and in case of bleeding disorders the drug is used in the form of decoction[3] and named as laksha rasa. The drug is highly used in the formulations like laksha guggulu, candanabala lakshadi taila, lakshadi taila etc.[4] as the drug is highly used in the science it is necessary for as to standardize the drug for regular use 3.

AIM

To standardize the drug laksha.

OBJECTIVE

Organoleptic evaluation of seed lac Priliminary phytochemical evaluation of seed lac Qualitative analysis of seed lac Chromatographic finger print of seed lac by HPTLC technique.

MATERIALS AND METHODS

Collection and Identification

Market sample of Seed lac was collected from the Hydrabad city of Telangana, India. The sample was authenticated from the Head of Department of Dravyaguna, SDMCAH, Hassan, Karnataka.

Drug analysis

The Physical evaluation like Foreign matter, total Ash value, Acid insoluble ash, Water soluble extractive value, Alcohol soluble extractive value were performed at Department of Dravyaguna, SDMCAH, Hassan, Karnataka.

Preliminary phytochemical tests(alkaloids, carbohydrates, tannins, steroids, saponins, flavonoids, coumarins, phenol, triterpenoids, carboxylic acid, quinine) and HPTLC finger print of the seed lac was performed at S.D.M. Centre for Research in Ayurveda and Allied Sciences, Udupi, Karnataka.[5]

Preliminary phytochemical tests

The assessment of alcoholic extract was done as follows - Alkaloids by *Dragendroff's test, Wagners's test, Mayer's test, Hager's test;* Carbohydrates by *Molisch's test, Fehling's test, Benedict's test;* Steroids by *Libermann-Burchard test, Salkowski test;* Saponins by forth formation test; Tannins by ferric chloride test; Flavonoids *by Shinoda's test;* Phenol by alcoholic ferric chloride test; Coumarins by 2 N sodium hydroxide solution; Triterpenoids by thionyl chloride; Carboxylic acid by sodium bicarbonate; Resin by acetone test; Quinine by 0.5% of sodium hydroxide.[6]

HPTLC

1g of *Seed lac* powder was extracted with 10 ml of *alcohol*. 6µl of the above extract was applied on a pre-coated silica gel F254 on aluminum plates to a band width of 7 mm using

Linomat 5 TLC applicator. The plate was developed in Toluene: Ethyl acetate: Acetic acid: water (3.0: 3.0: 0.8: 0.2). The developed plates were visualized in UV 254, 366 and then derivatised with vanillin sulphuric acid and scanned under UV 254nm, 366nm and 620nm. R_f, colour of the spots and densitometric scan were recorded.

OBSERVATION AND RESULTS

The findings of physical parameters are shown in table 1.

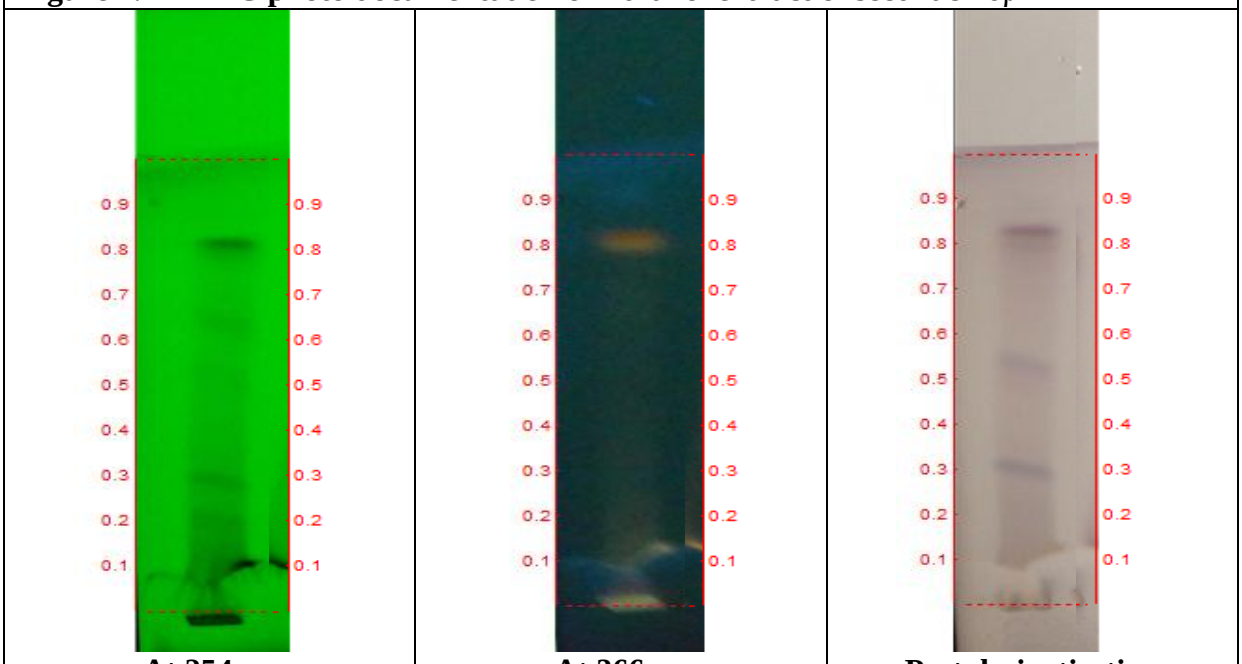
Table 1. physical parameters of the sample

Parameter assessed	Obtained value	Standard value[7]
Forgein matter	5%	Not morethan 4%
Total ash value	1%	Not morethan 0.12%
Acid insoluble ash value	1%	0
Water soluble extractive value	4%	Slightely soluble in water
Alcohol soluble extractive value	94%	85-95% (w/w)

The observation of preliminary phytochemical screening is showed positive for alkaloids, steroids, tannins, quinine.

The findings of HPTLC of ethanol extract of seed lac is showen 8 rf values. They are 0.21, 0.30, 0.52, 0.65, 0.80, 0.83, 0.87, 0.92 (table 2 and figure 1, 2).

Figure 1. HPTLC photo documentation of Ethanol extract of seed lac– 6µl



At 254nm | **At 366nm** | **Post derivatisation**

Solvent system- Toluene: Ethyl acetate: Acetic acid: Water (3.0:3.0:0.8:0.2)

Table 2: R_f values		
At 254nm	**At 366nm**	**Post derivatisation**
0.21 (L. green)	-	-
0.30 (L. green)	-	0.30 (D. purple)
0.52 (L. green)	-	0.52 (D. purple)
0.65 (L. green)	-	-
-	0.80 (F. yellow)	0.80 (L. purple)
0.83 (D. green)	0.83 (F. orange)	0.83 (D. purple)
-	-	0.87 (D. purple)
-	0.92 (F. blue)	-
***L – light; D – dark; F – fluorescent**		

Fig 2. Densitometric scan of the sample of Seed lac

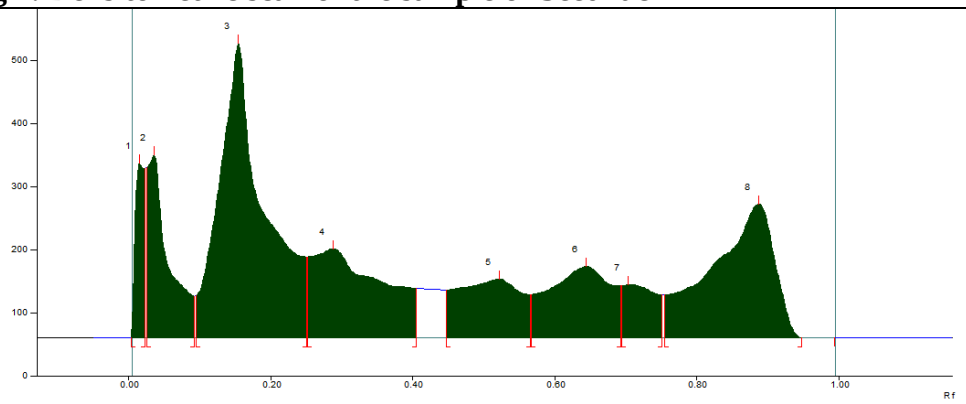


Fig 2a. At 254nm

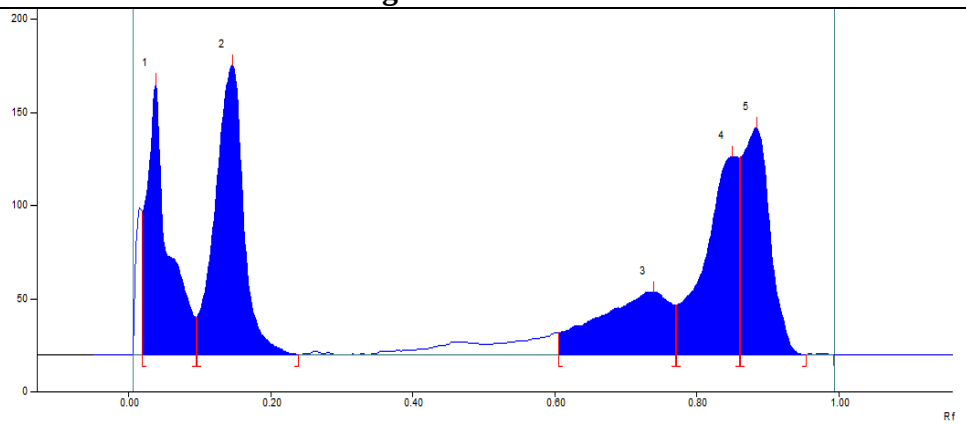


Fig 2b. At 366nm

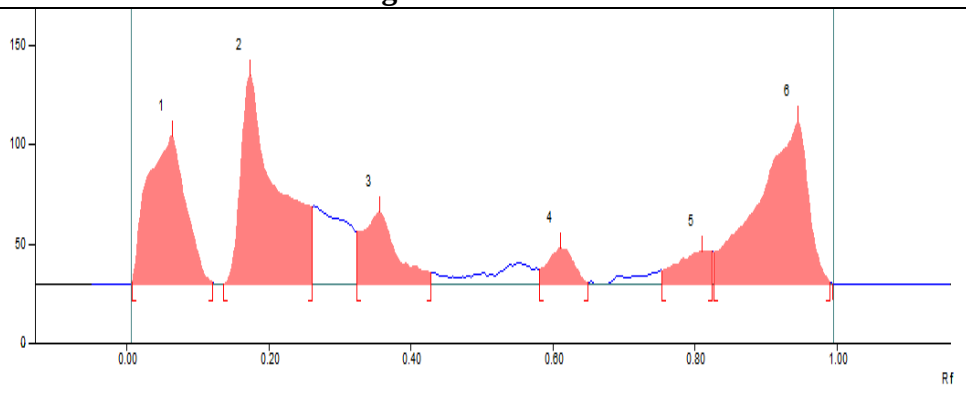


Fig 2c. At 620nm

DISCUSSION

The physical parameters of the seed lac is with in the parmeters of the standard hence its gives as an idea that the sample is genuine. The presence of alkaloids, steroids, tannins and quinine in the seed lac sample gives as an idea in which areas it can be used and helps as in future isolations methods implication. The HPTLC finger print showed 8 rf values in the sample. The finger print of seed lac helps to identify adulteration and to standardize the drug for future use.

CONCLUSION

The evaluation of the drug used in medicinal formulations helps in standaradization as well as in maintaining the quality of the finished product and to maintain uniformity in the nature of drug.

REFERENCES

1. Sri narahari pandit; raj nighantu; English transilation by sankhyadhar s. Chandra; chaukhambha orientalia; Varanasi, 2012; 266.
2. Kakim A.H. bustanul mufradat, new delhi: idarae kitabul shifa, 2002; 196: 516.
3. Prasad P.V.N.R., illustrated bhaisajya kalpana vijnana, chowkhamba krishnadas academy, Varanasi, 2008; 170-171.
4. The Ayurvedic Formulary of India, 2nd edition, Ministry of Health and Family Welfare, New Delhi, 2003; part 1; p.70, 134, 151.
5. Ayurvedic Pharmacopeia of India, Ministry of Health and Family Welfare, New Delhi; 2016; part-1; vol-9; p.114.
6. K.R. Khandelwal, practical pharmacognosy techniques and experiments, 2nd edition, nirali prakashan, pune, 2000; 25.1 to 25.9.
7. C.K. Kokate, A.P. Purohit, S.B. Gokhale; Pharmacognosy, 50th edition, Nirali prakashan, pune, 2014; 14.151.