

**PHARMACOGNOSTICAL AND PHARMACEUTICAL EVALUATION
OF *KALYANAKA GHRITAM* IN THE MANAGEMENT OF *UNMADA*
W.S.R. TO SCHIZOPHRENIA**

Dr. Binal J. R.*¹, Dr. Alankruta Dave² and Harisha C. R.³

¹*PG Scholar, Department of *Kayachikitsa*.

²Head & Profesor, Department of *Kayachikitsa*.

³Head, Pharmacognosy Lab.

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***Corresponding Author**

Dr. Binal J. R.

PG Scholar, Department of
Kayachikitsa.

ABSTRACT

The most dreadful and vulnerable disorder among mental illness is schizophrenia. It affects about 1.5% of the adult population, usually begins before the age 25, persists throughout life, and affects persons of all classes. Although schizophrenia is discussed as if like a single disease, it probably comprises a group of disorders with heterogeneous etiologies, variations in clinical presentations and response to treatment and course of the illness. It is mainly characterized by specific psychological symptoms that interfere with the thinking, emotions,

conation and motor behavior of the patient. And moreover, in chronic stage, certain symptoms, which are often called negative symptoms, make the patient's condition to worsen. In Ayurvedic classics, Unmada is the term used to denote mental illnesses which are characterized by the perversion of mind, intellect, consciousness, knowledge, memory, desire, manners, behaviors, and conduct² and is said to be manifested as a result of the occlusion in the Manovaha Srotas by various etiological factors. *Kalyanaka ghrita* is well proved n management of the Unmada and Anidra. For the first time Pharmacognostical & Analytical study of *Kalyanaka ghrita* has been carried out for the evaluation of its efficacy in the schizophrenia. Pharmacognostical results showed fibers through medullary rays, Pitted vessels, Par-Starch, Sceried, Trichome, Mesocarp. The Analytical study showed that loss of drying 0.82%, acid value 0.354, Iodine value 57.23, saponification value- 177.62. The details will be describe in full paper.

KEYWORDS: Schizophrenia, *Kalyanaka ghrita*, *Unmada*, *Psychosis*.

INTRODUCTION

In terms of its disability and chronicity, Schizophrenia gains important position among the psychiatric illnesses. It is unarguably one of the most devastating of the mental illnesses, characterized by specific psychological symptoms that interfere with the thinking, emotions, conation and motor behavior of the patient.^[1] In Ayurveda schizophrenia is similar to the condition with *Unmada*^[2], *Unmada* has been used by *Charaka* more classically and listed under *Manas Dosha Vikara* and gave separate chapters. *Rajah* and *Tamah Manas Doshas* are vitiated in *Unmada*. Person having *Alpa Satva* are more prone to the disease as *Alpa satva* indulges in *Prajnaparadha*. So, *Kalyanaka ghritam*^[4] can be effective in *Unmada* by its satva enhancing property. Pharmaceutical treatments for *Unmada* are usually associated with various side effects hence formulation like *Kalyanaka ghritam* can be used in managing this condition due to its anti-stress, anti-depressant, tranquilizer, sedative, anxiolytic activity. *Kalyanaka ghr̥ta* is beneficial in warding off evil spirits (*graha*), insanity (*unmaada*), cough (*kaasa*), epilepsy (*apasmaara*), diseases caused by sin (*paapma*), anaemia (*paandu*), itching (*kandu*), poison (*visha*), consumption (*s'osha*), delusion (*moha*), diabetes (*prameha*), artificial poison (*gara*), fever (*jvara*), for persons who have no semen (*aretas*), for persons with scanty menstruation (*alpa rajas*) in whom the mind is affected by god (*daivopahata cetasi*), for those who have no intelligence (*amedhasi*), whose words are slipping (*skalat vaaci*), for those who desire good memory (*smr̥ti kaama*), who have poor digestive fire (*alpa paavaka*). Anupan of *Kalyanaka ghritam* is *madhu*(honey) and *Go-dugdha*, which are also having *Rasayan* properties. Till date there is no scientific evaluation regarding.

MATERIALS AND METHODS

Collection of raw drug

All the drugs of *Kalyanaka ghrita* were obtained from Gujarat Ayurved University Pharmacy and the drugs which were not available from the pharmacy of Gujarat Ayurved University were procured from local market of Jamnagar. The ingredients & parts used in the preparation of the final product are listed in the Table 1.

Preparation of drug

The final product i.e. *Kalyanaka ghrita* was prepared in the pharmacy, Gujarat Ayurved University, Jamnagar.

Pharmacognostical study

Pharmacognostical Study was carried out in two steps. The contents were used in the dry powder form for this study.

1. Organoleptic Study

Organoleptic evaluation can be done by means of sense organs which provide simplest and quickest means to establish the identity of a particular drug. The raw drugs and its powder were separately evaluated by organoleptic characters like taste, odour, colour and touch. Powder characteristics of the sample were identified with the help of Pharmacognosy laboratory, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India.^[5]

2. Powder microscopy

Powder of the drug was studied microscopically and microscopic characters of the powder were drawn.^[6]

Physico-chemical analysis

Kalyanaka ghrita was analyzed using various standard physico-chemical parameters such as Loss on drying, water soluble extract, alcohol soluble extract etc.^[7]

High Performance Thin Layer Chromatography (HPTLC)

HPTLC was performed as per the guideline provided by API. Methanolic extract of drug sample was used for the spotting. HPTLC was performed using Toluene:Ethylacetate:Acetic acid (14:4:2 ml) as solvent system and spots were observed under visible light. The colour and R_f values of resolved spots were noted.^[8]

RESULTS

Organoleptic characters of *Kalyanaka ghrita*

Organoleptic characters of *Kalyanaka ghrita* such as colour, odour, taste etc. examined by sensory organs and results are shown in Table 2.

Microscopic characters of *Kalyanaka ghrita*

Diagnostic characters of *Kalyanaka ghrita* were observed under the microscope and presence of all ingredients showed their different characters. Parenchyma cell of brown contain, Group of fibres, Lignified cork, Lignified fibres, Parenchyma cells with starch grains, Pitted scleroids, Pitted vessels, Prismatic crystal, Rhomboidal crystal, Scalariform vessels,

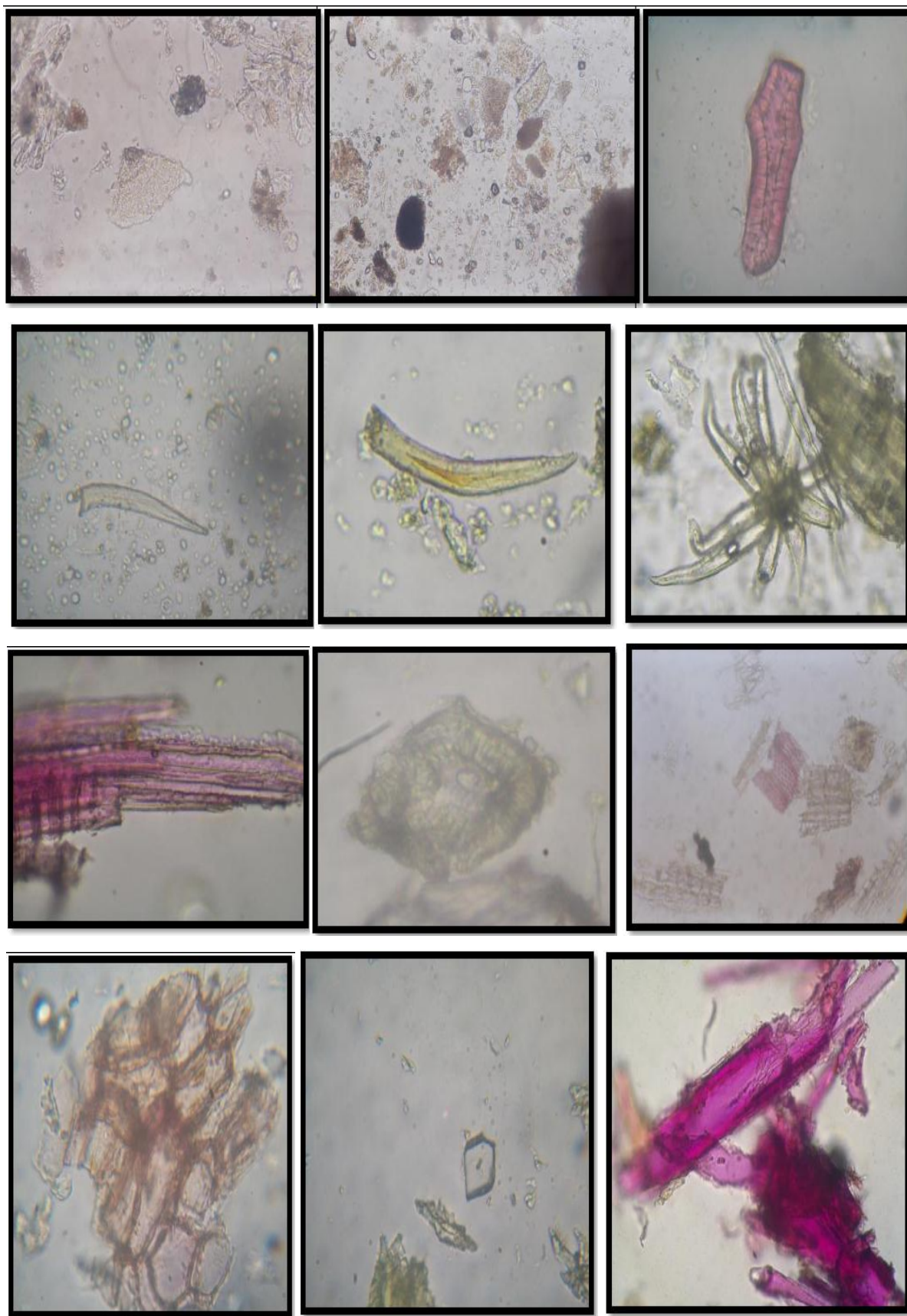
Scleroids, etc. are seen. [Plate1. Fig 1-17].

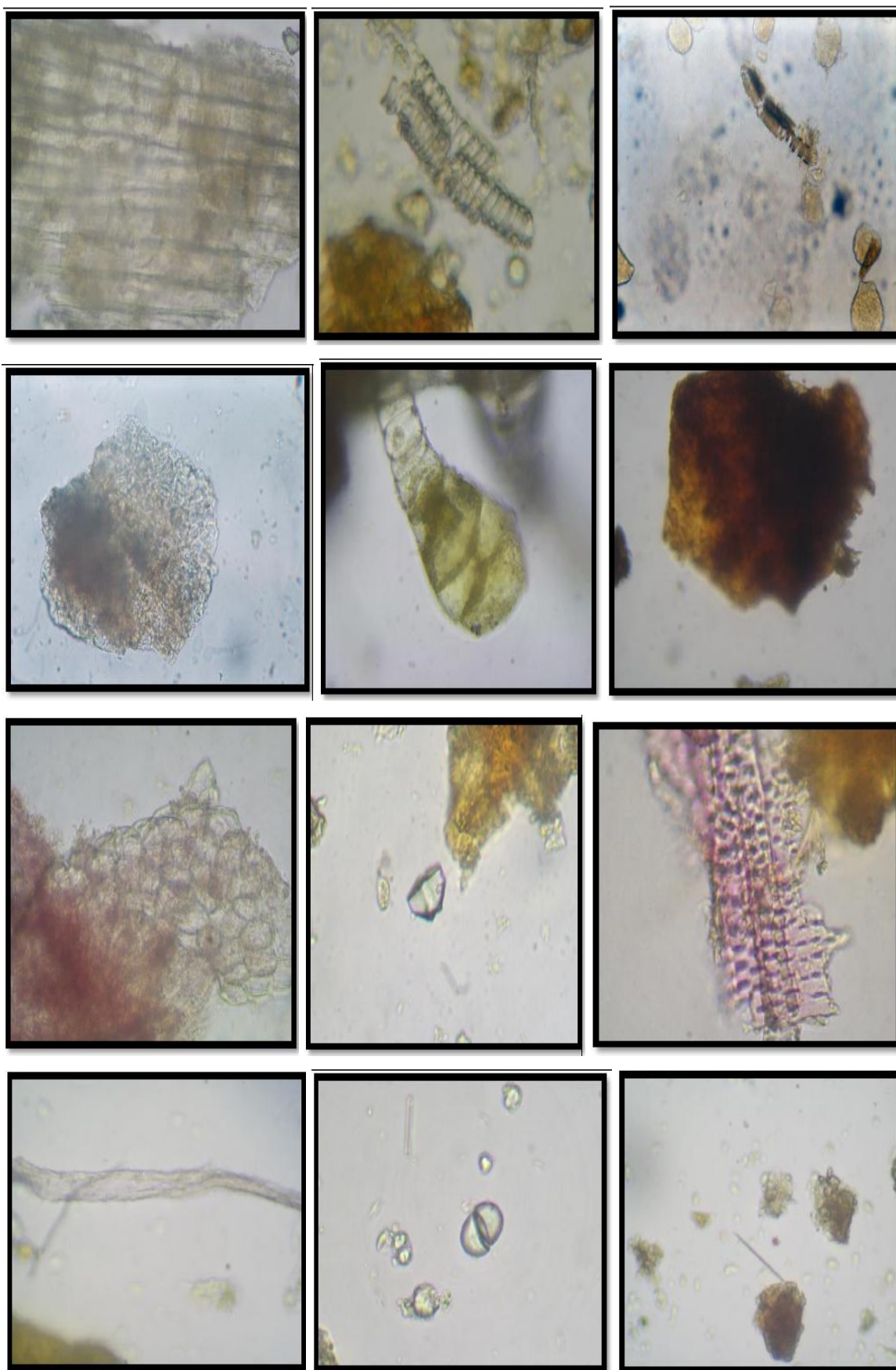
Physicochemical parameters of *Kalyanaka ghrita* Physicochemical parameters of *Kalyanaka ghrita* such as Ash value, water soluble extracts, alcohol soluble extract, pH etc. results are shown in Table 3.

Table 1: Ingredients of *Kalyanaka ghrita*.

Sl	Sanskrit	Botanical	Part	Rasa	Guna	Veerya	Vipaaka	Constituents	Karma
1	Hareetaki	Terminalia	Fruit	Panca	Laghu,	Ushna	Madhura	Chebulinic acid,	Tridosahara,
2	Vibheetaki	Terminalia	Fruit	Kashaaya	Laghu,	Ushna	Madhura	Tannin	Kaphapittahara,
3	Aamalaki	Embelica	Fruit	Panca	Laghu,	S'eeta	Madhura	Gallic acid,	Tridosahara,
		officinalis	pulp	rasa	S'eeta			Cellulose,	Rasaayana, Vr`shya,
4		Citrullus colocynthis	Root	Tikta	Laghu, Rooksha	Ushna	Kat'u	Colocynthin, Colocynthin,	Kaphapittahara, Vishaghna, Sara
5	Bhadrela	Amomum	Seeds	Kat'u,	Laghu,	Ushna	Kat'u	Essentialoil, Cin	Kaphapittahara,
6	Devadaaru	Cedrus deodara	Heart wood	Tikta	Laghu, Snigdha	Ushna	Kat'us	Sequiterpene, Aromatic oil	Kaphapittahara, Deepana, Paacana,
7	Elavaalooka	Prunus avion	Seeds	Madhura	Guru	S'eeta	Kat'u	Barium	Vaatapittahara, Vr`shya, Balya
8	Sveta	Hemidesmus	Root	Madhura	Guru,	S'eeta	Madhura	Saponin,	Tridosahara,
9	Kr`shna	Cryptolepin	Root	Madhura	Guru,	S'eeta	Madhura	Cocimarin,	Tridosahara,
10	Haridra	Curcuma	Rhizome	Tikta,	Laghu,	Ushna	Kat'u	Sesquiterpine	Kaphapittahara,
11	Daaru		Heart	Tikta,	Laghu,	Ushna	Kat'u	Berberine,	Kaphapittahara,
12	S'aaliparni	Desmodium	Root,	Madhura	Guru,	Ushna	Madhura	Oil, alkaloid	Tridosahara,
13	Pr`sniparni	Uraria picta	Whole plant	Madhura	Laghu, Snigdha	Ushna	Madhura	Resin, Alkaloid, Oil	Tridosahara, Vishaghna, Deepana
14	Priyangu	Calicarpa macrophylla	Seeds	Kashaaya Tikta,	Guru, Rooksha	S'eeta	Kat'u	Aromatic oil, Hydrochloric,	Tridosahara, Vr`shya, Deepana,
15		Valeriana wallchi	Root	Tikta, Kat'u,	Laghu	Ushna	Kat'u	Valerianic acid	Kaphapittahara, Deepana, Vr`shya,
16	Br`hati	Solanum	Root	Kat'u, Tikta	Laghu, Rooksha,	Ushna	Kat'u	Solanine, Solanidine,	Kaphapittahara, Deepana, Paacana
17	Kusht`ha	Saussarea lappa	Root	Tikta, Kat'u,	Laghu, Rooksha,	Ushna	Kat'u	Odorous principle, Camphene,	Kaphapittahara, Kusht`hahara, Sukrala
18	Manjisht`a	Rubia cordifolia			Guru, Rooksha	Ushna	Kat'u	Manjistin, Grancin, Alizarin,	Kaphapittahara, Vishaghna, Svarya,
19	Naagakesara	Mesua ferrea	Kesara	Kashaaya	Rooksha, Laghu	Ushna	Kat'u	Oleoresin, Fixed oil, Tannin	Kaphapittahara, Aama paacana

20	Daadima	Punica granatu	Fruits, Roots, Bark	Madhura, Kashaaya, Amla	Laghu, Snigdha	Ushṇa Anushṇa	Madhura	Tannin, Nicotinic acid, Protein, Carbohydrate,	Tridosahara, Vr`shya, Krimihara, Deepana, Graahi
21	Vella (Vidanga)	Embelia ribes	Fruit	Kat'u, Kashaaya	Laghu, Rooksha	Ushṇa	Kat'u	Embelin, Christembine, Tannin, Volatile oil	Kaphavaatahara, Krimighna, Deepana
22	Taaleesapatra	Abies	Leaves	Tikta,	Laghu,	Ushṇa	Kat'u	Volatileoil, White	Kaphavatahara,
23	Ela		Fruits	Kat'u, Madhura	Laghu, Rooksha	S'eeta	Madhura	Cineol, Terpeneol, Terpinene,	Tridosahara, Deepana, Vr`shya
24	Maalati Mukula	Jasminum	Flower	Madhura, Tikta	Laghu	S'eeta	Madhura	Salicylicacid, Jasminine	Vatapittahara,
25	Utpala	Nymphoea	Flower	Madhura, Kashaaya,	Laghu, Snigdha	S'eeta	Madhura	Gallicacid, Tannic acid	Vatapittahara, Medhya
26	Danti	Baliosper	Root	Kat'u	Guru,	Ushṇa	Kat'u	Resin, Starch, Oil	Kaphapittahara,
27	Padmaka	Prunus ceasoids	Bark	Kashaaya, Tikta	Laghu	S'eeta	Kat'u	Accgranitin, Prunetin,	Kaphapittahara, Vr`shya
28	Candana	Santalum album	Heart wood	Tikta, Madhura	Laghu, Rooksha	S'eeta	Kat'u	Essential oil, Santalol, Fixed oil	Kaphapittahara, S'ukra aartava doshahara, Daurgandhyahara,

Microphotographs of *Kalyanaka ghrita*



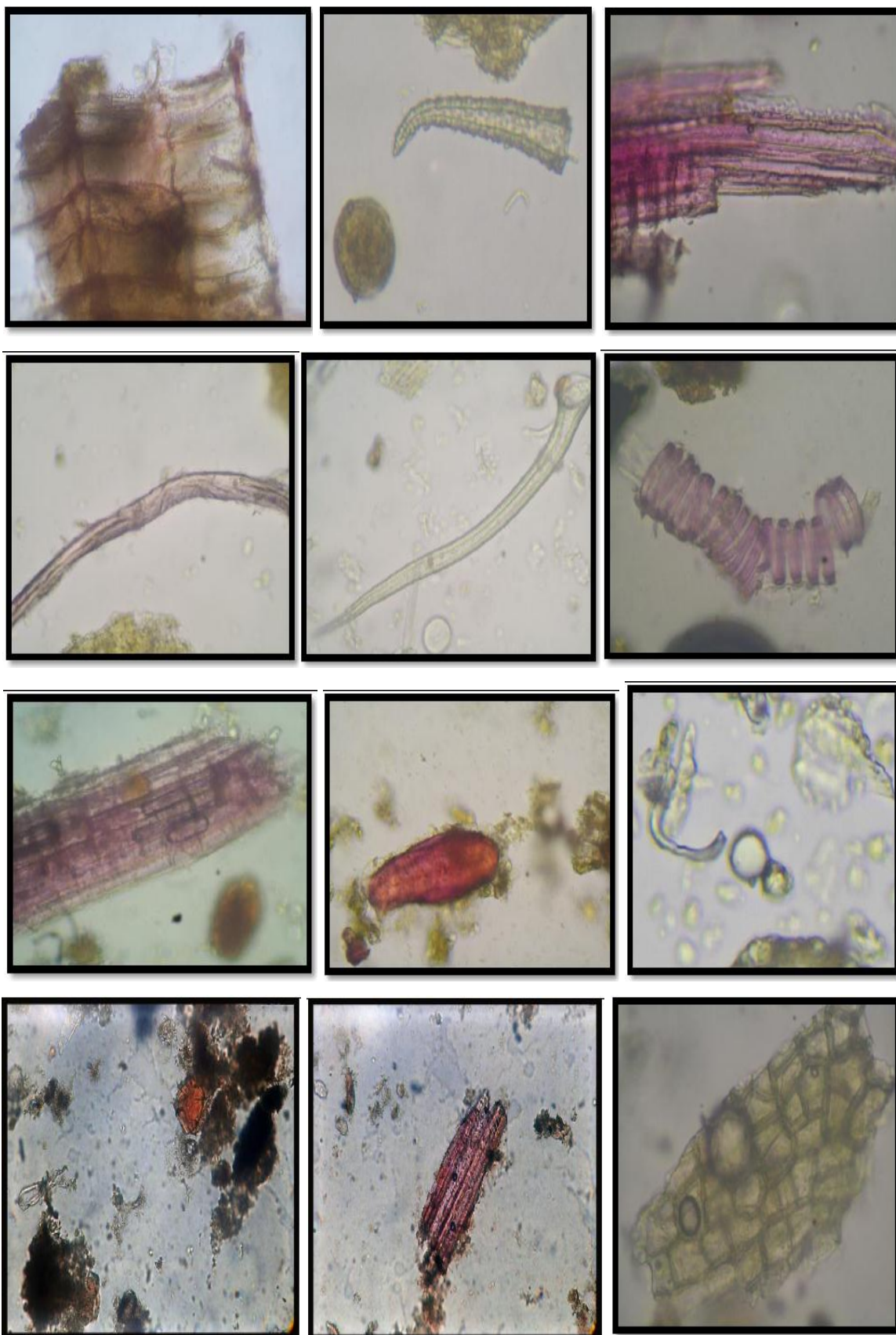


Table 2: Orgenoleptic characters of raw drugs of *Kalyanaka ghrita*.

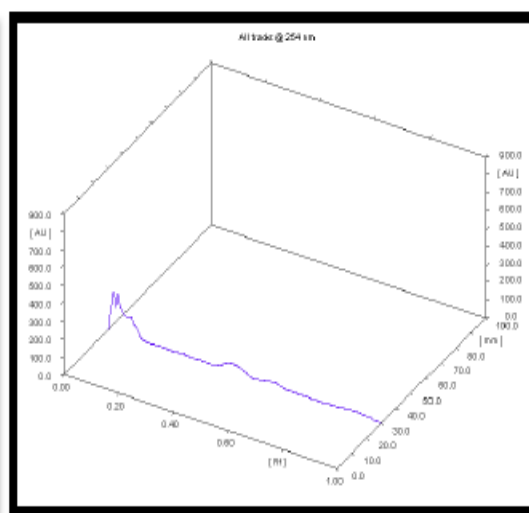
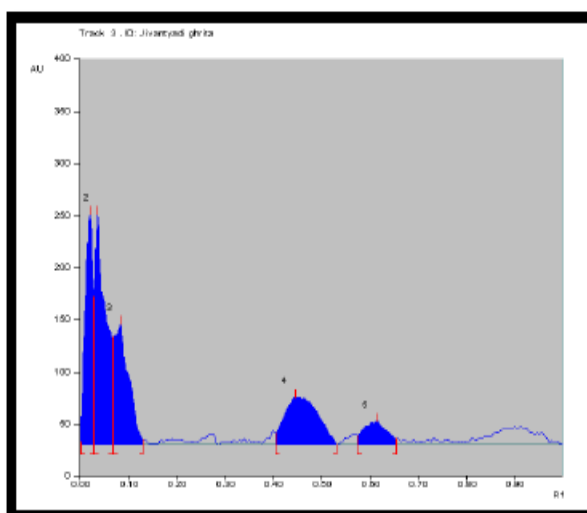
Sr. No.	Test	Result
1.	Colour	Yellowish
2.	Odour	Pungent
3.	Taste	Astringent
4.	Touch	Smooth
5.	Texture	Soft

Table 3: Physicochemical parameters of *Kalyanaka ghrita*.

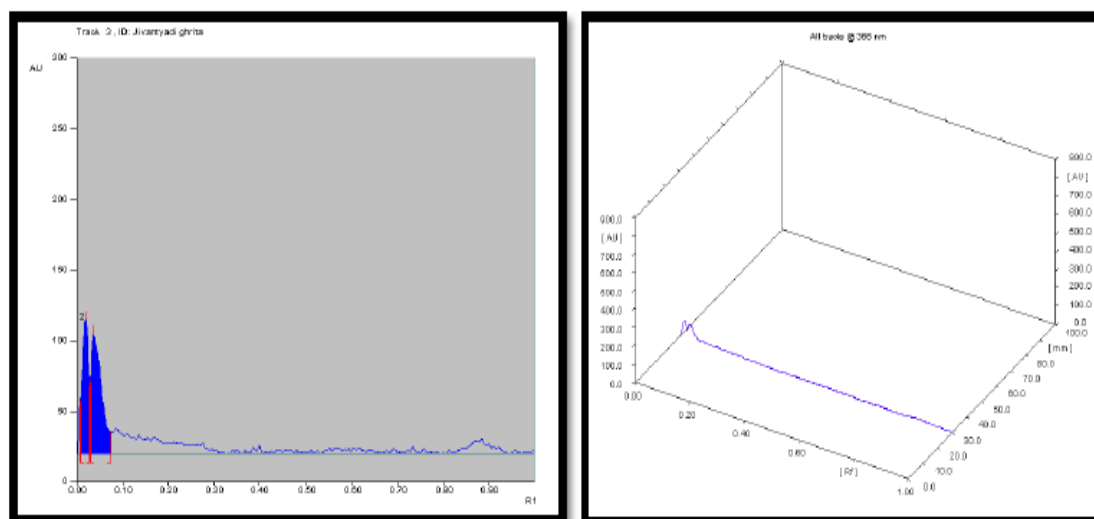
Sr. No.	Analytical parameters	<i>Kalyanaka ghrita</i>
1.	Loss of drying	0.82%
2.	Acid value	0.354
3.	Iodine value	57.23
4.	Saponification value	177.62
5.	Refractive value	1.424
6.	Specific gravity	0.961

Kalyanaka ghrita rf values at 254 nm before spray

Sample	No. of Spot	Rf value
<i>Kalyanaka ghrita</i>	1	0.02
	2	0.04
	3	0.08
	4	0.45
	5	0.61

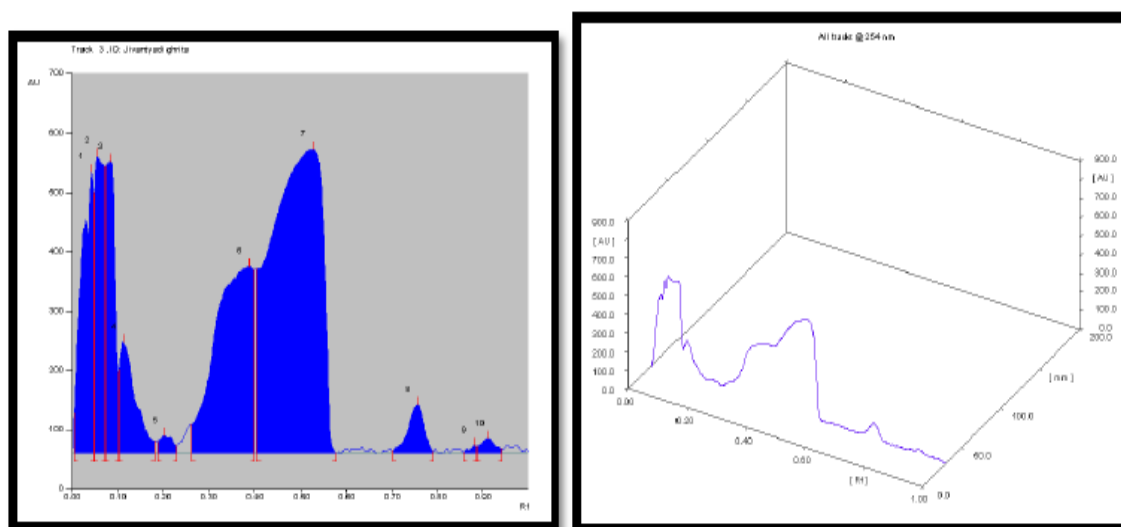


Sample	No. of Spot	Rf value
<i>Kalyanaka ghrita</i>	1	0.02
	2	0.04



Kalyanaka ghrita rf values at 254 nm after spray

Sample	No. of spot	Rf value
<i>Kalyanaka ghrita</i>	1	0.04
	2	0.06
	3	0.09
	4	0.11
	5	0.20
	6	0.39
	7	0.53
	8	0.76
	9	0.88
	10	0.91



***Kalyanaka ghrita* rf values at 366 nm after spray**

Sample	No. of spot	Rf value
<i>Kalyanaka ghrita</i>	1.	0.04
	2.	0.06
	3.	0.09
	4.	0.11
	5.	0.20
	6.	0.39
	7.	0.52
	8.	0.76
	9.	0.91

DISCUSSION

Pharmacognostical study reveals authentication of *Kalyanaka ghrita* was cross verified with standard reference API. Parenchyma cell of brown contain, Group of fibres, Lignified cork, Lignified fibres, Parenchyma cells with starch grains, Pitted scleroids, Pitted vessels, Prismatic crystal, Rhomboidal crystal, Scalariform vessels, Scleroids, etc. are observed under the microscope which were used as ingredients. All the physico-chemical parameters were analyzed and found to be within the normal reference range. The physicochemical analysis showed normal range.

CONCLUSION

Pharmacognostical study findings confirm that all characters were found in ingredient drugs of *Kalyanaka ghrita*. The physicochemical analysis are inferred that the formulation meets maximum qualitative standards and all the parameters discussed here may be used as identifying tools for the quality assessment of *Kalyanaka ghrita*.

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