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A PHARMACOGNOSTICAL AND PHYSICOCHEMICAL EVALUATION OF *RAKTMEDAPRASADAKA CHURNA*

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ABSTRACT

INTRODUCTION: *Raktmedaprasadaka Churna* has been prepared by the ingredient mentioned in *Rakta* and *Medha Dhatugata Jwara* in *Charaka Samhita*. According to Ayurveda *Vrikka* (kidney) has been made from the essence part of *Rakta* and *Meda Dhatu*. So kidney damage or *Dushti* should be cure from this type of combination. By keeping this view in mind this *Yoga* (combination) was selected in the present study to assess the efficacy of the drug in *Vrikka Dosha*.

AIM: To evaluate *Raktmedaprasadaka Churna* for its authenticity, though various Pharmacognostical and physicochemical procedures.

METHODS: Drug and various parameters have been used for pharmacognostical and physicochemical analysis.

RESULT AND DISCUSSION: Data related to physicochemical property like Ash value, loss on drying, water soluble extract and methanol soluble extract has been noted.

CONCLUSION: This study may be beneficial for further use of this *Yoga*.

Keywords: Pharmacognostical, Physicochemical parameters, *Raktmedaprasadaka Churna*

INTRODUCTION: The drug used in the present study is the combination of nine drugs which are given in *Raktaja* and *Medaja Jwara* in *Charaka Samhita Chikitsa Sthana Jwara Adhyaya*. According to *Ayurvedic* classics *Vrikka* is made up of *Sara Bhaga* of *Rakta* and *Medo Dhatu*[i]. So there should be a *Karya Karan* relation between *Rakta Dhatu*, *Meda Dhatu* and *Vrikka*. With the *Dushti* of *Rakta Dhatu* and *Meda Dhatu* there should be *Dushti* of *Vrikka* and with the *Prasadana* of these drugs changes should be reverse at least some extent with this hypothesis experimental study has been planned by using this combination of drugs which is having *Rakta* and *Medodoshahara* property. To full fill the aim of study standard analysis of drug is necessary through various pharmacognostical and physico-chemical parameters.

MATERIAL AND METHOD

Collection of drug: All the raw drugs of *Raktmedaprasadaka Churna* were collected from the Pharmacy of Gujarat Ayurved University, Jamnagar.

Preparation of drug:*Raktmedaprasadaka Churna* was prepared in Pharmacy of Gujarat Ayurved University, Jamnagar. Ingredients, part used and ratio of the drug are given in Table 1.

Table 1: Ingredients of *Raktmedaprasadaka Churna* [ii]:

S. No.	Content	Latin Name	Quantity	Part used
1	*Patola Patra*	Trichosanthes dioica Roxb.	2 part	*Patra*
2	*Sariva*	Hemidesmus indicus R.Br.	2 part	*Moola*
3	*Guduchi*	Tinospora cordifolia	2 part	*Kanda*
4	*Shunthi*	Zingiber officinale Rosc.	2 part	Rhizome
5	*Kirattikta*	Swertia chirayita	3 part	*Panchanga*
6	*Musta*	Cyperus rotundus Linn.	1 part	Tuber
7	*Patha*	Cissampelos pareira linn.	1 part	*Moola*
8	*Katuki*	Picrorhiza kurroa Rovle ex Benth	1 part	*Moola*
9	*Chandan*	Santalum album Linn.	1 part	Heartwood

Method of preparation: All these drugs were taken in according to their quantity in the form of *Churna* and mixed thoroughly.

Pharmacognostical Evaluation: All the Drugs were identified and authenticated by the Pharmacognosy laboratory, I.P.G.T. & R.A. Jamnagar. The identification was carried out based on the morphological features, organoleptic characters and powder microscopy of the drug. Drugs were studied and observed under the microscope attached with camera with stain. Microphotographs were taken by using Carl-Zeiss Trinocular microscope[iii].

Pharmaceutical Evaluation: The drug was analyzed by using qualitative and quantitative parameters at Pharmaceutical Chemistry Laboratory of I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar.

Physico-chemical Parameters[iv]: Physico-chemical parameters i.e. Loss on Drying at 110^0 C, Total Ash value, Water Soluble Extract, Methanol Soluble Extract and pH 5% v/w aqua solution carried out as per standard procedures.

Results and Discussion

Organoleptic Findings

Table No: 2 Oragnoleptic findings of the *Raktamedaprasadaka Churna*

No.	Organoleptic parameter	Result
1	Texture	Smooth , fine
2	Colour	Dull green
3	Odour	Bitter
4	Taste	Bitter followed by *Kashaya*

Result of Physicochemical analysis of Drug:Table No: 3 (Physico-chemical parameter)

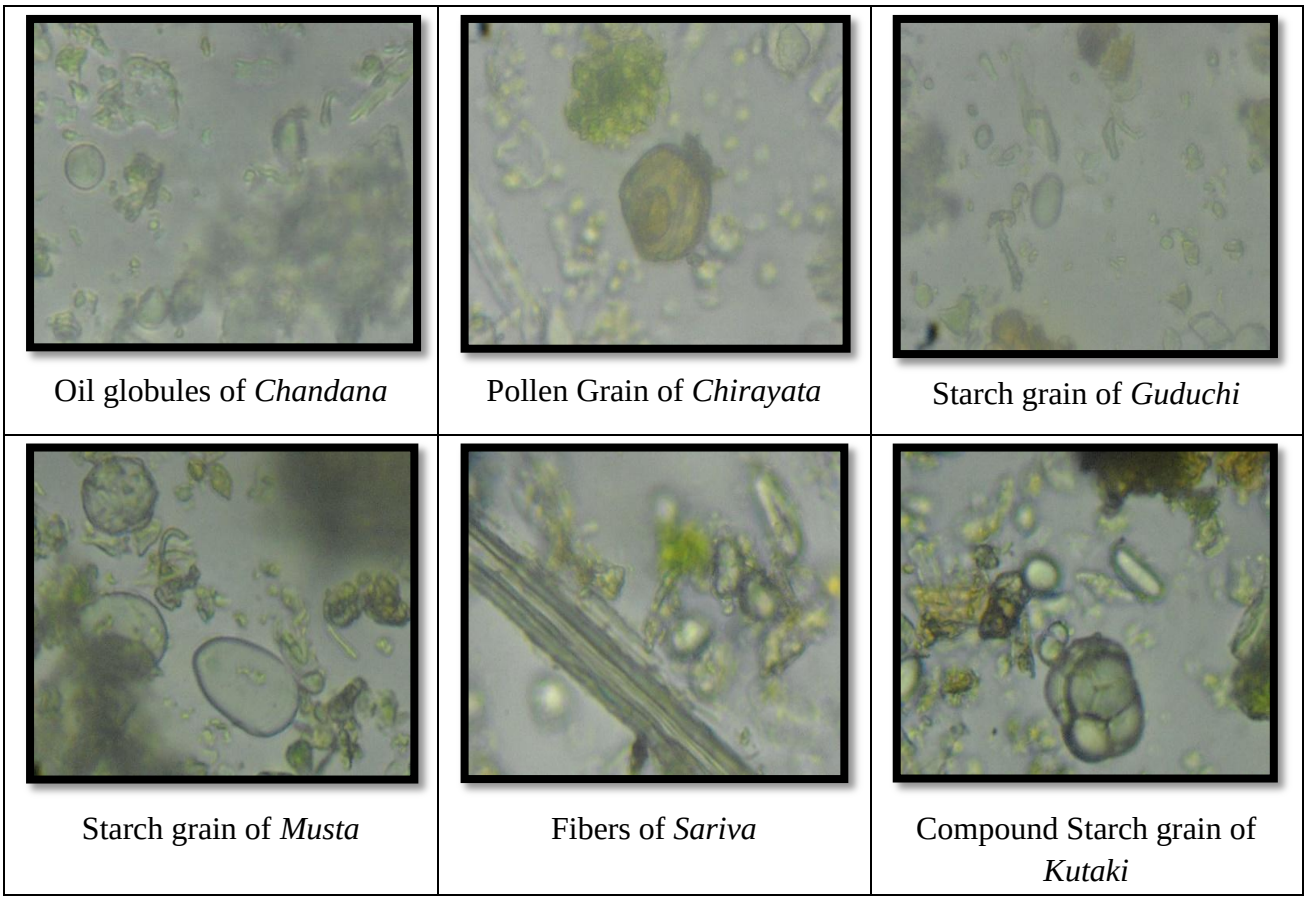
No.	Physico-chemical parameter	Result
1	Loss in drying	5.45% w/w
2	Ash value	7.95% w/w
3	Water soluble extract	11.6% w/w
4	Methanol soluble extract	6.8% w/w
5	pH value	6.5

Result of Pharmacognostical study: The outmost aim of the study was to confirm the authenticity of the raw drugs used in the preparation of *Raktmedaprasadaka*

Churna. For the same microscopy of the raw drugs were carried out. Diagnostic characteristics of powder of *Raktmedaprasadaka Churna* showed following characteristics dispersed throughout the powder oil globules of *Chandana*, pollen Grain of *Chirayata*, Starch grain of *Guduchi*, Starch grain of *Musta*, Fibers of *Sariva*, Compound Starch grain of *Kutaki*, Tennin content of *Sariva*, Pittete Vessels of *Patola*, Annular vessels of *Kiratikta*, Stone cells of *Sariva*, Acicular crystal of *Kiratikta*, Fragments of scalarly form vessels of *Shunthi*, Collenchyma cells of *Guduchi*, Fragment of trichome of *Kiratikata*, Fragment of Stroma of *Patola Patra*, Rhomboidal crystal of *Sariva*, Cork cell of *Sariva* along with tennin content, Lignified fiber of *Chandana*, Lignified Collenchyma cell of *Guduchi*, Simple trichome of *Patola*, Border pitted Vessels of *Guduchi*, Lignified Pitted vessels of *Patha* and Lignified Annular vessels of *Kutaki*. (Figure No.1) Results matched with the API and thus confirmed the genuineness of all the drugs used in the finished product.

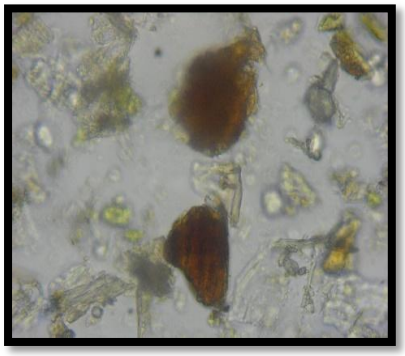
Result of Pharmaceutical Evaluation: Physico-Chemical parameters of drug like Total Ash value, Water soluble extract, Methanol soluble extract, pH 5% v/w aqua solution**,** Loss on drying all were found to be within the normal range. Details are given in Table No. 3. HPTLC was carried out after organizing appropriate solvent system in which maximum 13 and 8 spots were distinguished at 254 nm and 366 nm respectively in figure no. 2

Figure 1: Microscopic characters of *Raktmedaprasadaka Churna*

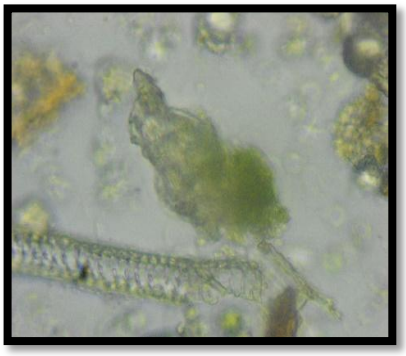


Oil globules of *Chandana* | Pollen Grain of *Chirayata* | Starch grain of *Guduchi*

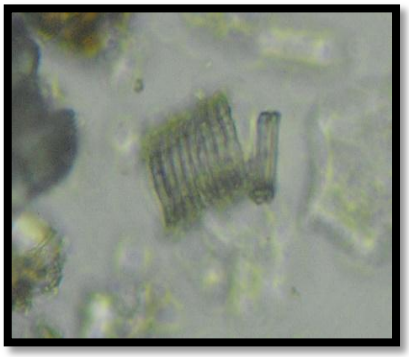
Starch grain of *Musta* | Fibers of *Sariva* | Compound Starch grain of *Kutaki*



Tennin content of *Sariva*

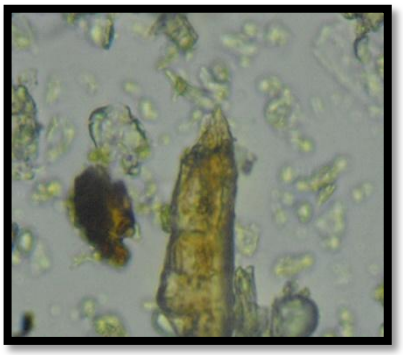


Pittete Vessels of *Patola*

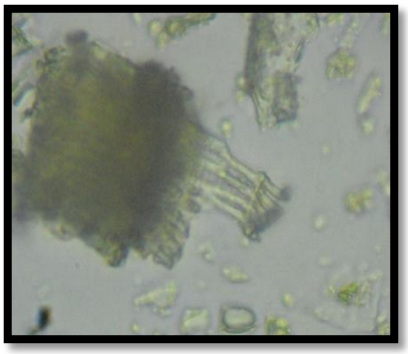


Annular vessels of *Kiratikta*

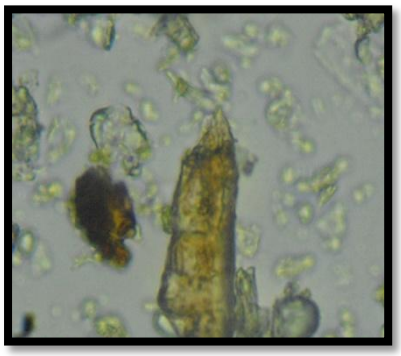
Stone cells of *Sariva*



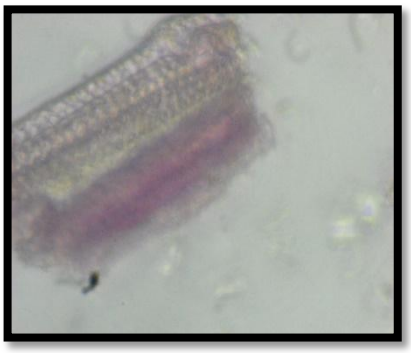
Collenchyma cells of *Guduchi*



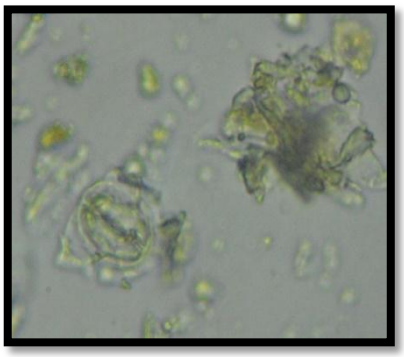
Fragments of scalarly form vessels of *Shunthi*



Collenchyma cells of *Guduchi*

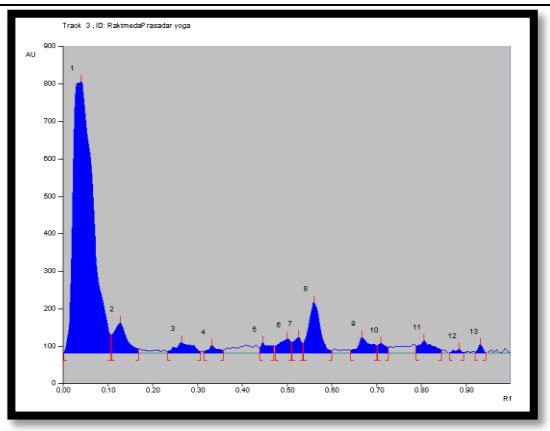


Lignified Pitted vessels of *Patha*

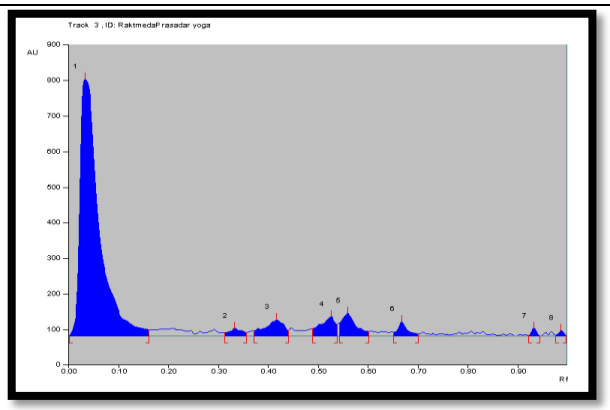


Fragment of Stroma of *Patola Patra*

Figure 2: HPTLC evaluation of *Raktmedaprasadaka Churna*



Peaks at 254 nm



Peaksat366 nm

Results obtained in physicochemical parameters of *Raktmedaprasadaka Churna* are within limit mentioned by Ayurvedic Pharmacopoeia of India. HPTLC profile of *Raktmedaprasadaka Churna* showed similar in number of spots. This is a preliminary analysis and meticulous nature along with the depiction is to be carried out. Pharmacognostical evaluation of raw drugs used in *Raktmedaprasadaka Churna* showed specific characteristic features, found in microscopy, which confirmed the same and showed that the genuinity of the drugs. Most of the drugs in the combination having *Laghu Ruksha Guna*, *Tridosha* or *Pittashamaka* property. *Kirattikta* is in maximum quantity because it is best in *Kaphanashana* and *Pittashaman*. *Sariva*, *Guduchi* and *Shunti* can be considered as *Dhatuvriddhikara* due to *Snigdha* property and rest of drug considered as *Aama Pachaka*. This combination could be good approach in *Vrikka Dushti* according to composition of *Vrikka*.

CONCLUSION: Pharmacognostical findings confirmed that the ingredients of *Raktmedaprasadaka Churna* and that there is no major change in the microscopic structure of the drug during the pharmaceutical processes of preparation of drug. The drug assumed as effective on *Vrikka Dosha* and considered to have *Raktamedoprasadaka* properties. The results of this study may be used as the reference standard in further research related to this area.

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