



**PRELIMINARY PHARMACEUTICAL-ANALYTICAL STUDY ON
*PIPPALI RASAYANA***

CHIGATERI CL¹, CHETAN M², KAMATAR SB³ AND PALLAVI KB⁴

^{1,3,4}PG Scholar; ²Professor; ^{1,2}Department of Ayurveda Samhita Siddhanta; ^{3,4}Department of Rasashastra and Bhaishajya Kalpana

Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital

*Corresponding Author: Dr. Chinmayi L Chigateri; E Mail: chinmayi.chigateri9@gmail.com

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ABSTRACT

Ayurveda is a system of medicine which defines the way of life. Among eight branches, *Rasayana* is one which promotes longevity, memory, intelligence. Acharya *Charaka* has mentioned many formulations of *Rasayana*, among which *Pippali Rasayana* is the one where fine powder of *Pippali* should be given *bhavana* with *Palasha kshra jala* (alkaline liquid obtained after processing ash of *Palasha* with water) and then the triturated product is fried in *Gritha* (ghee). The final product should be taken with honey to get *Rasayana* effect, particularly in order to alleviate cough, wasting, dyspnoea and other symptoms. Pharmaceutical study of *Pippali Rasayana* involves the preparation of *Palasha Kshara jala*, and *Pippali churna* was given 7 *bhavana* with *Palasha Kshara Jala* and after *bhavana* the product was fried in *ghrita*. The pH of the final product was found to be 6.10; loss on drying was 8.8%, total ash 10% and acid insoluble ash was 0.5%. These preliminary pharmaceutical standards can be taken as a reference for further research.

Keywords: *Pippali, Rasayana, Palasha kshara, Bhavana, pH*

INTRODUCTION

Ayurveda is a system of medicine which defines the way of life. By gaining the knowledge and following principles of *Ayurveda* helps in preventing and curing the

diseases. It has eight branches among which the branch of *Rasayana* has got more importance now a days. *Rasayana* is a therapeutic measure which promotes

strength and immunity. According to *Charaka* by promotive treatment, one can attain longevity, memory, intelligence, freedom from illness, youthfulness, and excellence of luster, complexion and voice, optimum strength of physique and sense organs, perfection in deliberation, respectability and brilliance. *Rasayana* is the means of attaining excellent qualities of *rasa* and other *dhatu* i.e., body cells and tissues. It is not only for promotive but also for curative purpose. Acharya *Charaka* has mentioned many formulations of *Rasayana* for different diseases in *Charaka samhitha Chikitsasthana Rasayana adhyaya*. One such is *Pippali Rasayana*. Where, it is mentioned that three-three *Pippali* fruits should be taken in the morning, before and after breakfast. The fine powder of *Pippali* should be given *bhavana* with *Palasha Kshara jala* (alkaline liquid obtained after processing ash of *Palasha* with water) and then the triturated product is fried in *Grita* (ghee). The final product should be taken

with honey to get *Rasayana* effect, particularly in order to alleviate cough, wasting, phthisis, dyspnea, hiccough, throat disorders, piles, *grahani* (IBS), paleness, and intermittent fever, disorders of voice, chronic rhinitis, swelling, *tumour* [1].

The present work has been undertaken to carry out preliminary pharmaceutical - analytical study on *Pippali Rasayana* which serves as a source for further research on the formulation.

MATERIALS AND METHODS

Pharmaceutical study

Collection and authentication of the raw

drugs: Herbal drug *palasha* was collected from local place in Davanagere and *pippali* was collected from local vendour Mysore. Ghee was collected from local market in Hassan. The herbal drugs were authenticated from the Department of *Dravyaguna vijnana*, Sri Dharmasthala Manjunatheshwara College of *Ayurveda* and Hospital, Hassan. The authentication was based on organoleptic and morphological characters.

Table 1: Ingredients of *Pippali Rasayana* [2]

SL No	Ingredients	Latin name/ English name	Parts used	Quantity taken
1	<i>Pippali</i>	<i>Piper longum</i>	Fruit	1 kg
2	<i>Palasha</i>	<i>Butea monosperma</i>	<i>Panchanga</i>	13 kg
3	<i>Ghrita</i>	Ghee		Quantity sufficient

Palasha Kshara preparation [3]

Panchanga of *Palasha* tree was taken and dried in sun, after drying it was burnt in an iron pan to ash. The obtained ash was dissolved in 6 parts of water, rubbed with

hand to mix it properly and kept undisturbed for one night. Next day the supernatant water portion is carefully decanted and filtered for 21 times in clean cotton cloth to

obtain *Kshara Jala*. The obtained *Kshara Jala* was kept under sun for reduction.

Processing of *Pippali churna* with *Kshara Jala* and *ghrita*

Pippali were dried and pulverized to a fine powder. *Pippali* powder was added with *Kshara Jala* and trituration was done till *subhavita lakshana*, 7 *bhavana* were given [3]. After trituration the mass was dried and pulverized into fine powder, the powder was fried with ghee.

Analytical Study

Prepared *Pippali Rasayana* was analysed with organoleptic characters and physico-chemical parameters for its quality at quality control lab, teaching pharmacy of Dept Rasashastra and Bhaishajya Kalpana, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan.

Organoleptic -characters:

Organoleptic characters like colour, odour and taste were examined by using sense organs.

Physico-chemical characters

Physico-chemical analysis was carried out according to the guidelines given in CCRAS protocol for testing Ayurveda and Siddha medicine.

pH [4]

Standard buffer solution: Dissolved one tablet of pH 4, and 9.2 in 100 ml of distilled water.

Determination of pH: 1 gm of sample was taken and mix up to 10 ml with distilled

water, stirred well and filtered. The filtrate was used for the experiment. Instrument was switched on. 30 minute's time was given for warming pH meter. The pH 4 solution was first introduced and the pH adjusted by using the knob to 4.02 for room temperature 30°C. Introduced the pH 9.2 solution and checked the pH reading without adjusting the knob. Then the sample solution was introduced and reading was noted. Repeated the test four times and the average reading were taken as result.

Loss on drying [5]

10 g of sample (*Pippali Rasayana*) was placed in tared evaporating dish. It was dried at 105°C for 5 hours in hot air oven and weighed. The drying was continued until difference between two successive weights was not more than 0.01 after cooling in desiccators. Percentage of moisture was calculated with reference to weight of the sample.

Total ash [6]

2gm of drug was accurately weighed in a tarred silica dish. The silica dish was kept in a muffle furnace at a temperature of 250-300 °C, for about 8 hours. Then silica dish was cooled in a vacuum and weighed. Percentage of ash was calculated.

Acid insoluble ash [6, 7]

The total ash obtained was boiled for 5 minutes with 25ml of dilute hydrochloric acid; the insoluble matter was collected on an ashless filter paper, washed with hot

water and ignited to constant weight. The percentage of acid-insoluble ash with reference to air dried drug was calculated.

Water soluble extractive [8]

Five gram of drug was taken in coarse powder form, along with 100ml of distilled water in a closed flask. The flask was subjected to shaking frequently for six hours, and then allowed to stand for eighteen hours. After completion of eighteen hour, the contents were filtered rapidly, and 25 ml of the filtrate was evaporated in a tarred flat bottom shallow dish at 105°C in a hot water bath and weighed. The percentage of water-soluble extractive was calculated with reference to air dried drug.

Alcohol soluble extractive [9]

Five gram of drug was taken in coarse powder form, along with 100ml of alcohol in a closed flask. The flask was subjected to shaking frequently for six hours, and then allowed to stand for eighteen hours. After completion of eighteen hour, the contents were filtered rapidly, and 25 ml of the filtrate was evaporated in a tarred flat bottom shallow dish at 105°C and weighed. The percentage of alcohol-soluble extractive was calculated with reference to air dried drug.

Observation and Results: It took 2 days to prepare *Palasha Kshara Jala* (20 litres). The obtained *Kshara Jala* was kept under sun for reducing it to 4.5 litres. It took 7 days to complete the *bhavana* process.

Table: 2 Results of pharmaceutical study

S. No.	Parameters	Quantity
1	<i>Palasha</i> (twak, patra, pushpa)	13 kg
2	Ash obtained	4.31kg
3	<i>Kshara Jala</i> obtained	20 litres
4	<i>Pippali</i> powder taken	1kg
5	End product (<i>Pippali churna</i> after 7 <i>bhavana</i> with <i>Kshara Jala</i> and <i>ghrita bharjana</i>)	895gms





Figure 1: Pictures showing the preparation of Palasha Kshara Jala



Figure 2: Pictures showing preparation of *Pippali Rasayana*

Table: 3 Results of Analytical Study

S. No.	Organoleptic characters	Results
1	Colour	Dark brown
2	Odour	Characteristic
3	Taste	Katu along with tingling sensation
4	Consistency	Solid

Table: 4 Physico-chemical parameters

S. No.	Parameters	Results
1	pH	6.10
2	Loss on drying	8.8%
3	Total ash	10%
4	Acid – insoluble ash	0.5%
5	Water soluble extractive	40.08%
6	Alcohol soluble extractive	8.8%

DISCUSSION

The ingredients used in *Pippali Rasayana* are *Pippali*, *Palasha Kshara* and *gritha*. *Pippali* has *katu rasa*, *laghu-teekshna guna*, *ushna veerya*, *madhura vipaka*. *Palasha* has *katu-tiktha- kashaya rasa*, *laghu-ruksha guna*, *ushna veerya*, *katu vipaka* and its *Kshara* is predominant with *agni* and *vayu mahabutha* hence it has *teekshna* and corrosive properties with quick action. *Kshara* has *lavana* and *tiktha rasa*, *ruksha* and *teekshna guna*, *ushna veerya* and *katu vipaka*. *Kshara* has possessed *chedana* and *bhedana* properties along with various other

therapeutic actions. Thus, they are used in different diseases.

In the preparation of medicine *samskara* plays an important role, here *bhavana samskara* is used to prepare the medicine it adds the following changes like *Guna-Karma* (qualities and action) of *Bhavana Drava* into *Bhavya Dravya*, *Gunantara* (change in Guna), *Gunadhana* (addition of new properties), *Gunotkarsha* (augmentation) improvised therapeutic action and palatability and many other benefits.

The pharmaceutical process of combination and elimination is done to enhance or

subdue any pharmacological activity, this principle for inducing change in properties of drug as acknowledged by *Acharya Charaka*, can also be effectively applied for changing therapeutic characteristics / potency of the drug by *Bhavana Churna Kriya*, the concept of potentiating the single or compound drug using their own *Swarasa / Kashaya* is recommended by *Charaka*. *Bhavana* ensures a reduced quantity of drug having broad spectrum activities. The potentiation of drugs is done with their own juices or the juices having similar potency. Thus, synergistic action of drugs can be ascertained. *Bhavana* fortifies the inherent properties of that particular substance. E.g. *Amalaki Rasayana, Chausastha Prahara Pippali*. The simple grinding or trituration during *Bhavana* process enhances the drug potency.

The pharmaceutical process resulted that by processing 4.31kg *Palasha* ash with 12 parts of water 20 litres of *Kshara Jala* was obtained, which again kept under sun for reducing it to 6 liters. The *Kshara Jala* was reduced and used completely for giving *bhavana* to 1kg of *Pippali churna*. The amount of final product of *Pippali churna* obtained after *bhavana* with *Kshara Jala* followed by *ghrita bharjana* with ghee was 895gms indicating 10.5% loss. The colour of the final product was dark brown with characteristic odour, powder consistency and taste were katu rasa, sharp tingling

sensation. pH of [10] *Pippali churna* is 4 and the pH of final product was found to be 6.10 indicating there is increase in the pH; this could be because *bhavana* with *Kshara Jala* (pH was 10.36), resulted in incorporation of the alkaline properties of the *kshara jala* into *pippali churna*. Loss on drying was 8.8% indicates loss of moisture and volatile principles present in it. Total ash of the sample was 10%; and acid insoluble ash was 0.5% which indicates no much siliceous matter in the sample. Water soluble extract was 40.08% and alcohol soluble extract was 8.8% indicating that the final product is more soluble in water than in alcohol.

CONCLUSION

Pippali Rasayana is a classical formulation which is not so common in practice, which is having only 2 ingredients and is easily available so this can be brought into practice. It is indicated for *Rasayana* purpose, *kasa, kshaya, shosha, shwasa, hikka*, throat disorders, *arshas*, and disorders of *grahani, pandutha, vishama jwara, vaiswarya, peenasa, shopha, gulma* and *vatabalasaka*. The preliminary analytical standards can be taken as a base for further researches.

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