



ANALYTICAL STUDY OF PIPPALYADI ANJANA: AN AYURVEDIC FORMULATION

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ABSTRACT

Pippalyadi Anjana is an *Ayurvedic* topical formulation mentioned in *Ayurvedic* classic. The formulation is believed to cure ocular ailments such as *Arma*, *Timira*, *Kaach*, *Arjuna*. According to *Acharya Yogratnakar* this *Anjana* can be used to eradicate all the ocular disorders if prepared appropriately. It can be the best option among all *Anjanas* from which the eye diseases can't be appeared. Keeping all these points in view this study has been undertaken with the aim to modify *Pippalayadi Anjana* into ointment form and to develop the physicochemical profile of the final product. *Anjana* was prepared in the form of *Ghan Satva Kalpana* and the *Laksha* and *Saindhav* was added then mixed with *Siktha* of cow ghee and emulsified bee wax for attaining the final product.

Materials and Method: The prepared drug was evaluated for organoleptic study, physiochemical study, pH value and the product were subjected for microbial contamination test, it was tested in analytical laboratory and results were documented.

Result: The result shows the organoleptic character and sterility.

Conclusion: *Pippalyadi Anjana* was prepared by following the method prescribed in *Yogratnakar*. This paper presents the analytical study of the formulation.

Keywords: *Pippalyadi Anjana*, Organoleptic study, Analytical study.

INTRODUCTION

In Ayurvedic classical texts administration of potent formulation in the form of *Anjana* is used in ocular disorders which are classified by *Acharya Shushruta* into *Churnanjanana* (fine powder), *Gutikanjanana* (tablet rubbed in appropriate solution) and *Rasanjanana* (semi solid form).⁽¹⁾ *Pippalyadi Anjana* is one of such formulation mentioned by *Yogratnakar* in his text which comprises of *Pippali*, *Triphala*, *Laksha*, *Lodhra*, *Saindhava* and *Bhringraja*. It is believed to have Pharmacological action over ocular disorders such as *Timira*, *Kaach*, *Arma*, *Kandu*, *Shukra Roga*, *Arjuna rog*.⁽²⁾ Almost all the drugs in the formulation are having either *Rasayana* or *Chakshushya* properties. *Triphala* acts as a best *Rasayana* and *Chakshushya*⁽³⁾ i.e. it relieves the eye strain and strengthen the visual functions. *Pippali* has been stated as “*Kaphaanilaghni*” and *Rasayana* by *Acharya Sushruta*⁽⁴⁾. *Acharya Bhavmishra* called *Bhringraj* as “*Netraartinut*”⁽⁵⁾ i.e. pacifies all ocular disorders. According to *Acharya Bhavmishra* *Lodhra* is having *Chakshushya* and “*Kaphapittaaghna*”⁽⁶⁾ properties. He also described *Laksha* as “*Kaphapittasranut*” and *Vranropaka*⁽⁷⁾. *Saindhava* reduces the vitiated *Tridoshas* and also acts as a *Chakshushya Rasayana*.⁽⁸⁾ The analytical study of this *Anjana* formulation may serve as a supporting literature for future studies for maintaining standard quality of formulation.

Aim and Objectives

1. To analyse the organoleptic character of the drug.

2. To find out the sterility test and physicochemical properties of *Pippalyadi Anjana* formulation prepared by classical methods.

Materials and Methods

Collection of Raw drug: The raw drugs for the study were acquired from the Hans Pharmacy Premnagar Ashram, Haridwar Uttarakhand Figure 1-8. The final product of *Pippalyadi Anjana* was prepared in the Hansa Pharmacy Premnagar Ashram, Haridwar Uttarakhand. Figure 9-12.

Method of preparation of Pippalyadi Anjana

The *Pippalyadi Anjana* was prepared by classical method of *Ghana satva*. For *Ghana satva* all six herbal drugs i.e *Pippali* (*Piper longum*), *Amalaki* (*Emblca officinalis*), *Haritiki* (*Terminalia chebula*), *Vibhitaki* (*Terminalia bellirica*), *Laksha* (*Laccifera lacca*), *Lodhra* (*Symplocos racemosa*), *Saindhava* (*Rock salt*), *Bhringraja* (*Eclipta alba*) were taken in equal amount (1 kg each) and decoction was made in eight times of water till it remain 1/4th of it, then that 1/4th part of decoction was filtered and again boiled till it become thicker. After that all that *Ghan satva* was dried into tray drier at temperature 35-40° C and then powdered.

Now, *Saindhav* and *Laksha* were added in 1/6th part of above powdered drug after filtered it in 120 No sieve mesh and mixed well. In the end *Go ghrut* and emulsified Bee wax were made by *Siktha Kalpana* in the ratio of 3:1 was taken as base ingredient and then the whole powder was mixed in *Siktha* in the ratio of 2:1.

Table 1: *Pippalyadi Anjana* and their proportion

Drug	Latin Name	Family	Part use	Ratio
<i>Pippali</i>	<i>Piper longum</i>	<i>Piperaceae</i>	Fruit	1000 gm
<i>Amalaki</i>	<i>Emblca officinalis</i>	<i>Euphorbiaceae</i>	Fruit	1000gm
<i>Haritaki</i>	<i>Terminalia chebula</i>	<i>Combretaceae</i>	Fruit	1000gm
<i>Vibhitaki</i>	<i>Terminalia bellerica</i>	<i>Combretaceae</i>	Fruit	1000gm
<i>Lodhra</i>	<i>Symplocos racemosa</i>	<i>Symplocaceae</i>	Bark	1000gm
<i>Bhringraj</i>	<i>Eclipta alba</i>	<i>Compositae</i>	Whole plant	1000gm
<i>Saindhav lavana</i>	-	-	-	1/6 th of all herbal Ghan
<i>Laksha</i>	<i>Laccifer lacca</i>	<i>Lacciferidae</i>	Resin	1/6 th of all herbal Ghan

Analytical Study: Prepared final product i.e. *Pippalyadi Anjana* was analyzed by applying various analytical parameters.

Organoleptic study or Physical characterization description: Organoleptic characteristics for various sensory characters like colour, taste, odour, etc. was carefully noted down.

Table 2: Physical characterization Description

Appearance	A Blackish coloured semisolid mass
Colour	Dark brown
Odour	Characteristic
Taste	Characteristic

Physicochemical Analysis

Physicochemical analysis such as Loss on drying at 105° was carried out. Loss on drying of final product was in normal range given in (Table 3). Along this the

microbial limit test and heavy metal test were carried out. Results of these tests were obtained within the normal range (table4-5)

Table 3: Physicochemical analysis of *Pippalyadi Anjana*

Parameters	<i>Pippalyadi Anjana</i>
Loss on drying	10.01

Table 4: Microbial Limit Test

Total bacterial count (cfu/g)	10
Total fungal count	10
E.coli	Absent
Salmonella sp.	Absent
P.aeruginosa	Absent
S. aureus	Absent

Table 5: Heavy Metals Test

Lead (Pb) ppm	4.6
Arsenic (As) ppm	0.78
Cadmium (Cd) ppm	0.14
Mercury (Hg) ppm	0.28

pH Value: pH was determined by using Digital pH meter. One gram of ointment was dissolved in 100 ml of distilled water and kept for 2 hours and the measurement of pH was 5.65 which is weakly acidic.

Sterility Test: Sterility test was done by the method mentioned under IP 2007, Vol-2, which shows that the drug was tested, was sterile.

RESULTS AND DISCUSSION

Pharmacognostical evaluation showed that organoleptic characters of the sample were dark brown in colour, blackish semi solid in appearance and characteristic odour and taste.

The physicochemical parameters play an important role in the standardization of formulation. According

to present study, the purity of *Anjana* is assessed by pH value, microbiological study, Heavy metal test and sterility test. The loss on drying at 105° C was 10.01 w/w. The pH from 10% w/v solution revealed that pH of formulation was comparable and slightly acidic. This may be because of acidic salts present in the crude drugs used for preparation of formulation. The microbiological study of *Pippalyadi Anjana* showed that the quality of *Anjana* in standard condition. The microorganisms (bacteria & fungal) found within normal limit. The quantity of Heavy metal is within normal limit came in heavy metal test. And the sterility test showed the *Pippalyadi Anjana* is sterile and the test for Aflatoxin was absent.



Figure 1: Piper longum



Figure 2: Emblica officinalis



Figure 3: Terminalia chebula



Figure 4: Terminalia bellirica



Figure 5: Symplocos racemosa



Figure 6: Eclipta alba



Figure 7: Saindhava



Figure 8.a: Lacciera lacca



Figure 8.b: Laccifera lacca (Powdered)



Figure 9: Cow Ghee



Figure 10: Emulsified Bee wax



Figure 11: Siktha



Figure 12: Final product (*Pippalyadi Anjana*)

CONCLUSION

Pharmacognostical and physicochemical evaluation of *Pippalyadi Anjana* illustrated the specific characteristics of this preparation. It is the first time when pharmaceutical and analytical profile of *Pippalyadi Anjana* was established. On the basis of microscopic features, the physicochemical profile and microbial limit tests are essential parameters for the quality of formulation. All parameters in this preparation were found within normal limits. On that basis, the present study on *Pippalyadi Anjana* may be used for standardisation and quality evaluation.

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