



ANALYTICAL STUDY OF YAVAKSHARADI ANJANA: AYURVEDIC FORMULATION

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ABSTRACT

^[1]*Yavksharadi Anjana* is Ayurvedic topical formulation mention in Sushrut Samhita. The formulation is helpful in curing various ocular diseases like Pterygium,^[2] Scleritis, Episcleritis, Corneal ulcer etc and also reduce length and thickness of mass growth, redness, watering in eye. It is best option in prevention of recurrence of *Arma*/ Pterygium when applied stat on excision site after *Arma Chhedana*. Keeping all these points in view the present study has been undertaken with aim to modify *Yavaksharadi Anjana* into ointment form and to develop the physiochemical profile of the final product.

KEYWORDS: *Yavaksharadi Anjana*, Analytical, Organoleptic, TLC profile.

INTRODUCTION

^[3]*Anjana* is potent topical formulation used in form of *Gutikaanjana* (tablet rubbed in appropriate solution), *Rasanjana* (ointment), *Churnanjana* (fine powder). *Yavaksharadi Anjana* (ointment form) an *Ayurvedic* formulation consist of *Yavkshara*, *Shunthi*, *Maricha*, *Pippali*, *Sandhav Lavan*. *Kshara* has pharmacological action *Ksharan*(corrosive)*lekhan* (scrapping), *vrana shodhan* (purification of wound) *Ropan* (healing).^[4] *Kshara* are classified into *Pratisaraniya* (external use) and *Paneeey* (internal use) *kshara* on the basis of their mode of application. *Pratisaraniya* has been further sub classified into *mridu*(mild) *Madhya* (moderate) and *Teekshan* (intense).^[5] *Yavkshar* is formulation which is alkaline and is prepared from whole plant of *Barley*(*Yava*) which is comprises of potassium carbonate. *Yavkshara* is predominant with *Agnibhuta* hence having *Teekshna* property, corrosive nature and presence of *Vavybhuta* gives quick action. *Shunthi*, *Maricha*, *Pippali* have *Lekhan*,

Chedana property and *Sandhav lavana* as *Chakshusya*. To provide an easy and effective way of application in the form of *Rasanjan (ointment)*, is purpose of modification of *Yavksharadi Anjana*.

The report on the standardization of *Yavaksharadi Anjana* and Present study is carried out to maintain the quality control of by proper identification of raw materials at the basic level with the help of organoleptic, physico-chemical, phyto -chemical parameters and TLC study.

MATERIALS AND METHODS

Aims and Objectives

- 1- To analyse the physical or organoleptic characters of drug.
- 2- To find out the sterility test and TLC profile of *Yavaksharadi Anjana* formulation prepared by classical and modified method.

Collection of raw materials- The raw drugs for the study were procured from the Hansa Pharmacy Premnagar Asram, Haridwar Uttarakhanda. The final product ie *Yavaksharadi Anjana* was prepared in Hansa Pharmacy Premnagar Asram, Haridwr Uttarakhanda.

Method of preparation of *Yavaksharadi Anjana*

^[6]*Yavksharadi Anjana* is prepared by classical method. Firstly *Yava* crops were removed along with roots after complete drying. The crops was further kept in shades till whole plants along with root completely dried.(image 1) 15 kg of whole *Yava* plant with seeds was spread in an open field 10x 10 feet area. Small quantity of dried plant was burned using fire and subsequently the remaining quantity was added slowly into fire to ensure complete burning Whole plant except seeds gets burned quickly and converts into white ash. The maximum temperature recorded during burning was 350 degree. Total 2 hour were required for burning. White ash (1.5 kg) was collected after self cooling. *Kshar jala* was prepared by using 8 times of water for dissolution of alkaline material from ash into the water. White ash was rubbed with water till the ph of water remain constant and allowed to settle for 12 hour. The *Ksharjala* was obtained after filtration by using three folded cotton cloth 21 times. *Yavakshar* was obtained by evaporating the water content from the filtrate by heating in open rotating pan. *Shunthi, Marich, Pippali Churna* were prepared by classical method of *Ghansatva* .For the Ghana satva all the herbal drugs *Shunthi, Marich, Pippali* were taken in equal amount (200 gm 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

Ghan satva was dried into tray drier at temperature 35-40 degree and then powdered. Now Yavkshar and Saindhav Lavan added in equal amount in dry Ghan satva powder of Shunthi, Marich, Pippali and mixed well. At the end Honey was taken as base ingredient and then whole powder was mixed in particular ratio 30:70 .The contents of *Yavksharadi Anjana* and there proportion is mentioned in Table 1.

Table-1

Drug	Latin name	Family	Part used	Ratio
<i>Yavakshara</i>	<i>Hordeum vulgare</i>	<i>Poaceae</i>	<i>Panchang</i> (whole)	60 gm
<i>Shunthi</i>	<i>Zingiber officinale</i>	<i>Zingiberaceae</i>	Root (Rhizome)	60gm
<i>Marich</i>	<i>Piper nigrum</i>	<i>Piperaceae</i>	Dried unripe fruit	60gm
<i>Pippali</i>	<i>Piper longum</i>	<i>Piperaceae</i>	Dried fruit	60gm
<i>Sandhav lavan</i>				60gm
Honey				700gm

Analytical study- Raw materials and prepared final product were analysed by employing various analytical parameters.

Organoleptic study- Organoleptic characteristics for various sensory characters like colour, taste, odour, etc. and was carefully noted down.(Table 2).

PH value

Physical characterization Description	A dark brown coloured semi solid mass
Appearance	Complies
Colour	Dark brown
Odour	Characterstic
Taste	Characterstic

PH was determined by using Digital PH meter. One gram of ointment was dissolved in 100 ml of distilled water and stored for 2 hours and the measurement of PH was 7.79 which weakly alkaline.

Yavaksharadi Anjana was further subjected to Thin Layer Chromatography (TLC) study.

Sterility Test

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

TLC profile

Instrument used was silica plate. The stationary phase used was silica gel G60F254 and mobile phase was Toluene, ethyl acetate, formic acid (6:3:1). The plate was visualized under iodine vapours, Rf value was recorded 0.34, 0.67, 0.91.

Microbial Analysis

Yavksharadi Anjana was evaluated for total aerobic microbial count and total yeast and mould count. Total aerobic microbial count was carried out by plate count method, which is mentioned in A.P.I, part 2, vol-1, Appendices-2.4.

Table -4

Microbial limit test		
Parameters	Specification	Result
Total Aerobic Microbial count	10^3	<10
Total yeast and mould count	10^3	<10

RESULT AND DISCUSSION

Pharmacognostical Analysis Organoleptic evaluation was performed at finish product (observation of organoleptic analysis are tabulated in figure 6. Thin layer Chromatography study (TLC) was carried out under 254 and 366 nm UV to establish finger printing profile. It showed Rf values 0.34, 0.67, 0.91 were recorded, which may be responsible for expression of its pharmacological and clinical action.



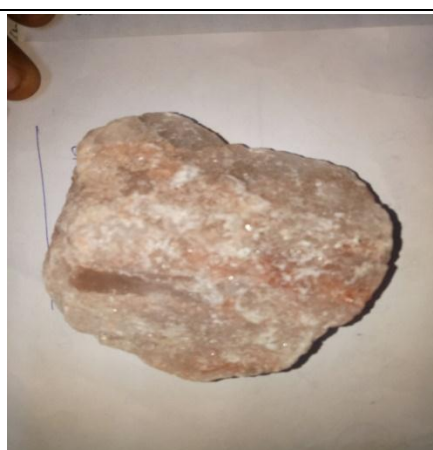
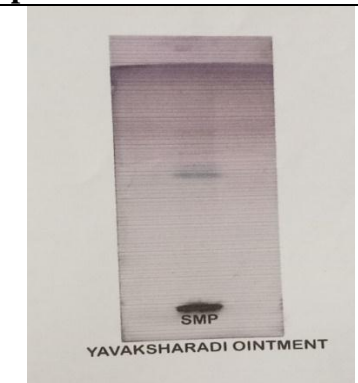
Fig. 1: *Hordeum vulgare*.



Fig. 2: *Zingiber officinalis*.



Fig. 3: *Piper nigrum*.

Fig. 4: *Piper longum*.Fig. 5: *Saindhav lavan*.Fig. 6: *Madhu*.Fig. 7: *Yavakshara*.Fig. 8: *Ghansatva powder*.Fig. 9: *Sandhav lavan powder*.Fig. 10: *Madhu*.Fig. 11: *Yavaksharadi ointment*.Fig. 12: *Thin layer chromatography*.

CONCLUSION

Pharmacognostical evaluation of *Yavaksharadi Anjana* illustrated the specific characters of this preparation. For the first time, pharmaceutical and analytical profile of *Yavaksharadi Anjana* was established. On the basis of microscopic features, TLC fingerprint profile and the physiochemical parameters dealt within this paper may be used for standardization and quality evaluation of *Yavaksharadi Anjana* compound formulation and may be useful in future for other scholars.

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