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Analytical Study of *Triphala Churna*: An Ayurvedic Formulation

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ABSTRACT

Ayurvedic preventive and therapeutic concepts depend on keeping *Agni* strong and preservation of harmony between *Jatharagni* (Internal digestive fire) and *Kostha* (excretory system). *Triphala* which comprises three fruits powder in equal amounts, is the most well known Ayurvedic formulation. *Haritaki* (*Terminalia chebula*), *Vibhitaki* (*Terminalia bellirica*) and *Amalaki* (*Emblica officinalis*) a very powerful *Chakshushya Rasayana* (visual function rejuvenator). *Triphala Churna* act across all three *Doshas* (body humours) i.e. effect of *Haritaki*- on *Vata Dosha*, *Amalaki*-takes control of *Pitta Dosh*a and *Vibhitaki*- acts on *Kapha Dosh*a. The role of *Triphala Churna* in treating ocular disorders given by *Acharya Sushruta* in *Sutra Sthana*. The anti-oxidative and anti-inflammatory effect of *Triphala Churna* exhibit diverse beneficial properties in ocular disorders. *Shushkakshipaka* (Dry eye syndrome), is *Vatapitta* dominant ocular disorder in which the *Ashru* (Tears) has been depleted resulting in *Paka* (Inflammation) of eye. Present study has been undertaken with the aim to develop the physiochemical profile of *Triphala Churna*. Pharmaceutical analysis of *Triphala Churna* preparation was done according to API & protocol of drug testing of PLIM **Material and Method:** *Triphala Churna* was assessed for Physical characterization, physicochemical study, Microbiological Analysis and heavy metals analysis. **Result and Discussion:** *Triphala Churna* is safe for use as heavy metals were below the acceptable limit and free from any pathogenic microbes. **Conclusion:** The *Sushruta Samhita* method was used to prepare *Triphala Churna*. This paper presents the analytical study of *Triphala Churna*.

Key Words *Triphala Churna*, *Shushkakshipaka*, *Analytical study*

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INTRODUCTION

As per ayurvedic principles balance between *Tridoshas* (i.e. *Vata*, *Pitta* and *Kapha*), *Dhatu*s (*Rasa*, *Rakta* etc.) *Mala* (*Mutra*, *Purisha*, *Sweda*), *Agni* (*Jatharagni* and *Dhatwagni*) along with the pleasant state of *Aatma/Indriye/Mana* is homeostasis¹. The eye is regarded as the most crucial organ² which gets easily affected by the

imbalance between three *Doshas* and results in its decreased/disturbed function ie; *Drishtikriya* (vision). The eyes and visual system are the target of *Chakshushya* class of medication. One such combination is *Triphala*³ which bring *Doshas* to normal state as well as having vision promoting effect along with anti-inflammatory effect. *Haritaki*, *Vibhitaki* and *Amalaki* are very

ORIGINAL RESEARCH ARTICLE

powerful on their own, when properly combined⁴, synergy improves the effectiveness and healing property specially in ocular disorder⁵. *Triphala* also take over the properties as *Deepana*⁶, *Pachana* and *Anulomaka Aushad* in Ayurveda which stimulates the *Pachaka Agni* thereby nourishes all *Doshas*.

AIM AND OBJECTIVES

To analyse the physical, organoleptic character, heavy metal content and the microbiological study of the *Triphala Churna* prepared by the classical method.

Table 1 Ingredients and Composition of *Triphala Churna*

S.NO	NAME	LATIN NAME	FAMILY	VIRYA VIPAKA	PART USED	RATIO
1	<i>Amalaki</i>	<i>Embllica officinalis</i>	Euphorbiaceae	<i>Sheeta Madhura</i>	Fruit	1
2	<i>Haritaki</i>	<i>Terminalia chebula</i>	Combretaceae	<i>Ushana Madhura</i>	Fruit	1
3	<i>Vibhitaki</i>	<i>Terminalia bellirica</i>	Combretaceae	<i>Ushana Madhura</i>	Fruit	1



Embllica officinalis



Terminalia chebula



Terminalia bellirica

Figure 1 Raw drug for *Triphala Churna*

Method of preparation of *Triphala Churna*

The *Triphala Churna* was prepared as per standard operative procedures of the Ayurvedic Pharmacopeia of India for the *Churna* preparation in GMP-approved Hans Pharmacy, Sidcul, Haridwar, Uttarakhand. For the preparation of *Triphala Churna*, all the raw herbal drugs i.e *Amalaki*, *Haritaki*, *Vibhitaki* were

MATERIALS AND METHODS

Collection of raw materials

The raw drugs for the *Triphala Churna* were taken from the Hans Pharmacy Premnagar Ashram, Haridwar . The P.G. Department of Dravyaguna Rishikul Campus Haridwar identified the ingredients. *Triphala Churna* was prepared in the Hans Pharmacy Premnagar Ashram, Haridwar Uttarakhand. The contents of *Triphala Churna* and details of ingredients shown below in table 1 and figure 1.

taken in equal amount and all the drugs were converted into fine powder separately and passed through sieve number 80, weight individually in the required quantities. Fine powder of all the drugs was mixed together uniformly. Store and pack the *Triphala Churna* in an air-tight packets to protect them from

ORIGINAL RESEARCH ARTICLE

moisture and light. The prepared *Triphala Churna* shown below in figure 2.



Figure 2 *Triphala Churna*

Method of evaluation of *Triphala Churna*:

The *Triphala Churna* was evaluated by employing parameters mentioned in Ayurvedic Pharmacopeia of India & protocol of Ayurvedic drug testing of PLIM, Ghaziabad, UP, India⁷.

Physicochemical analysis :Sample was subjected for physicochemical analysis such as Loss on drying at 105°C. Loss on drying was calculated after placing the 10g of sample in the tared evaporating dish, drying at 105°C for 5 hours.

Heavy Metal Test: Spectrometry of the sample was done for the presence of heavy metals such as cadmium (Cd), lead (Pb), mercury (Hg), arsenic (As). All the metals were present in the *Churna* in safe range.

Microbial Analysis: *Triphala Churna* was evaluated for total bacterial count and total fungal count. Total bacterial count was carried

out by plate count method, which is mentioned in A.P.I, Part II, Vol-I, Appendices 2.4.

Table 2 Physical characterization Description

Appearance	Yellowish brown powder
Colour	Yellowish brown
Odour	Characteristic
Taste	Astringent

Table 3 Physicochemical properties

Parameters	<i>Triphala Churna</i>
Loss on Drying (% w/w)	6.37
Total Ash(% w/w)	4.34
Acid insoluble(% w/w)	0.78
Alcohol soluble extraction(% w/w)	49.22
Water soluble extraction(% w/w)	56.04

Table 4 Heavy Metals

Lead (Pb) ppm	2.58
Arsenic (As) ppm	<0.50
Cadmium (Cd) ppm	0.12
Mercury (Hg) ppm	<0.13

Table 5 Microbiological Analysis

Total Bacterial Count	65000 cfu/g
Yeast and Mould Count	400 cfu/g
E.coli	Absent
S. aureus	Absent
Salmonella sp.	Absent
P.aeruginosa	Absent

CONCLUSION

Physicochemical evaluation of *Triphala Churna* illustrated the specific characters of this preparation. The microscopic features, physio-chemical parameters, sterility, heavy metal testing and microbiological analysis are essential parameters for ensuring safety and quality of the drug. All the readings of the product came out to be within normal range, as shown above in table 2,3,4,5 and figure 3.

ORIGINAL RESEARCH ARTICLE

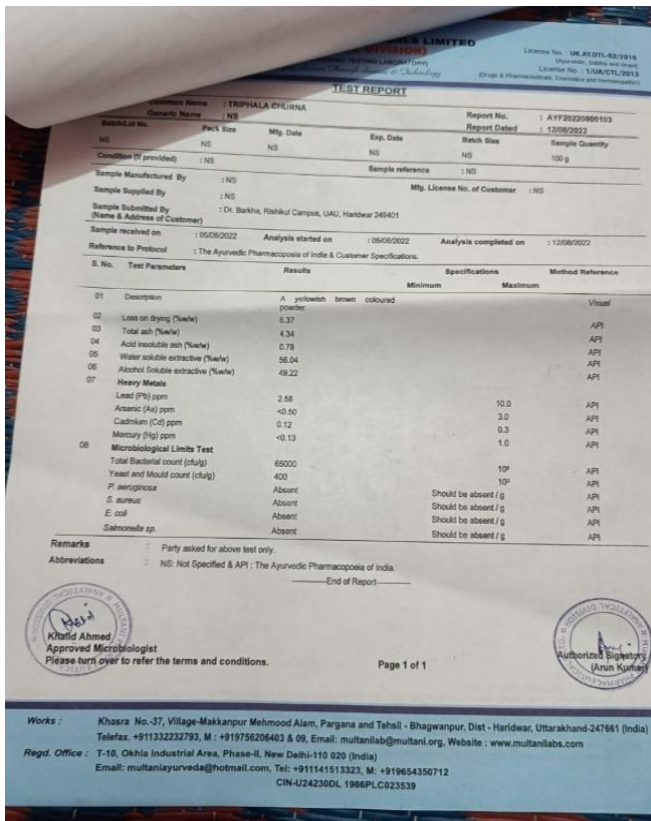


Figure 3 Analytical Report

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REFERENCES

1. Sushruta (2002) Sushruta Samhita Dalhana Comm - Nibandhasangraha, Chowkhambha Orientalia Varanasi, Sutrasthana 15/41: 75.
2. Sushruta (2002) Sushruta Samhita Dalhana Comm - Nibandhasangraha, Chowkhambha Orientalia Varanasi, Uttarantra1/10: 596.
3. Sushruta Samhita of Mahrishi Sushruta by Kaviraj Ambika data Shashtri part 1 Shloka (38/57), P.N 188 Reprint edition 2014, Chaukhambha Sanskrit Sansthan Varanashi.
4. Sushruta Samhita of Mahrishi Sushruta by Kaviraj Ambika data Shashtri part 1 Shloka (38/56), P.N 188 Reprint edition 2014, Chaukhambha Sanskrit Sansthan Varanashi.
5. Vagbhata, Ashtanga Hridaya - Sarvanga Sundari Comm (2000) Arunadatta, Choukhambha Krishna Das Academy, Varanasi Sutra Sthana 6/159: 118.
6. Sushruta Samhita of Mahrishi Sushruta by Kaviraj Ambika data Shashtri part 1 Shloka (38/57), P.N 188 Reprint edition 2014, Chaukhambha Sanskrit Sansthan Varanashi.
7. Anonymous, The Ayurvedic Pharmacopoeia of India. Government of India. Ministry of Health and family welfare. Department of Indian Systems of Medicine and Homoeopathy. Delhi. Part-1. Volume 9. p 136.