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# Pharmaceutical preparation and stability study of *Netramritam* a herbal eye drop for Cataract

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## ABSTRACT

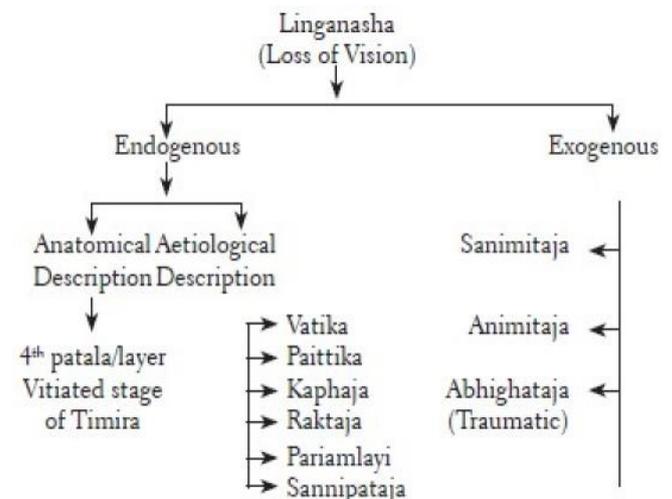
Ayurveda is science in which we study about not only *Atura Chikitsa* but also *Swasthasya Swasthya Rakshana*. In this study an eye drop which comes under *Arka Kalpana* of *Bhaishajya Kalpana*. This eye drop not only treat cataract but also prevent healthy eye from cataract. Cataract is a disease in which cloudy eye vision is the main symptom of acute patients. In *Ayurveda* we correlate cataract with *Linganasha*. This eye drop is made up of *Gulbakawali* flower *Arka* and this medicinal herb has a great potential to prevent and treat cataract. Also in this study light towards the pharmaceutical preparation of *Gulbakawali Arka* and it's analytical parameters like Ph value antimicrobial study to find out stability and shelf life of this eye drop has been studied.

**Key words:** Cataract, *Linganash*, *Gulbakawali Flower*, *Gulbakawali Arka*, *Arka Kalpana*

## INTRODUCTION

A cataract is a cloudy lens condition in which clouded, blurred or dim vision are the main symptoms. In *Ayurveda* cataract is correlated with *Linganasha*. *Linganasha* is a technical descriptive term in *Ayurvedic* literature, which means loss of vision.<sup>[1]</sup> Two varieties of *Linganasha* - loss of vision have been described i.e., reversible and irreversible or curable and in-curable. On the other hand *Linganasha* as a whole can be

classified<sup>[2]</sup> as follows:



Endogenous *Linganasha* is described vividly on anatomical and etiological grounds and is said to be the end stage of *Timira*, a serious disease of the visual apparatus. On anatomical descriptive grounds, when the vitiated body humors reach/invoke 4<sup>th</sup>/ last *Patal* /layer of the eye ball (nucleus of the lens), then patient's vision is obstructed, pupil is covered by vitiated body humors then patient perceives only

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bright illuminating objects that too when the eye (Posterior segment) is normal. This stage of *Timira*; invading 4<sup>th</sup> *Patal* (Lens) is labelled as *Linganasha* (Cataract). According to the etiological classification, *Linganasha* is again the 3<sup>rd</sup> stage of disease *Timira*, 2<sup>nd</sup> being *Kach* - (ISC).

The clinical picture is as per the vitiating / causative body humors. Among these pathologically classified *Linganasha* only *Kaphaja Linganasha* (KL) is surgically curable rest all being incurable<sup>[3,4]</sup> but a misconception about the surgical procedure is still prevailing. The western medical literature considers that surgical procedure depicted in ancient surgical treatise *Sushruta Samhita* is couching. *Gulbakawali* flower *Arka* is most commonly used medicine for treatment of cataract. This *Arka* not only treat cataract but also prevent our eyes so that we will not face cataract issue with our lens by regular using this *Arka* in eyes.

In this study stability study which is also going to be helpful to find to out shelf life or *Saviryata Avadhi* of this *Kalpana* has been done.

### AIM AND OBJECTIVES

1. To study about the pharmaceutical preparation method of *Netramritam* eye drop.
2. To ensure the safety and shelf life of *Netramritam* eye drop.

### MATERIALS AND METHODS

- Raw ingredients viz. *Gulbakawali* is procured from authentic market sources.
- Eye drop is going to be prepare at SBLD Ayurved *Viswabharati* Pharmacy, Sardarsahar, Churu.
- Stability test with special emphasis on antimicrobial study is performed by sending sample to *Ayushraj* Enterprises a NABL Certified lab at Jaipur.

### Drug Review

- Kingdom: *Planta*
- Species: *H. coronarium*
- Botanical name: *Hedychium coronarium*

*Gulbakawali* is of *Himalaya* habitat. this plant is available in tropical and subtropical region. It grows in moist tropical forest usually near stream, canals, water channels. The white garland-lily<sup>[4]</sup> or white ginger lily<sup>[5]</sup> is a perennial flowering plant in the ginger family *Zingiberaceae*, native to the forest under storey of Asia. Other common names include butterfly lily, fragrant garland flower, Indian garland flower, white butterfly ginger lily or white ginger.<sup>[6]</sup>

### Method of preparation

#### *Kalpana* - *Arka Kalpana*

Method - firstly raw *Gulbakawali* flower 1 kg was taken and soaked overnight in 10 liter water, next day its *Arka* is distilled with the help of distillation apparatus.





Initial weight - 1kg *Gulbakawali* flower

Final weight - 3 liter of *Arka*

**Analytical Study**

Stability test was performed by *Ayurshraj* enterprises

- Test start date - 03/08/2022
- Test end date - 08/11/2022
- Date of Exp.- 05/2023
- Parameters tested are mention in index below

S N	Particular	Test Method	Specific ations	UO M	0 Days	3 Month
1.	Descripti on	In House AD/STP/68/00	Colourless Liquid	-	Colourless Liquid	Colourless Liquid
2.	pH	API Part II Vol. IV	3.0-7.0	-	4.60	4.62
3.	Specific Gravity	API Part II Vol. IV	NLT 0.9	-	1.0225	1.0240
<b>Microbiological Analysis</b>						
4.	Total Aerobic	API Part II Vol. IV	>100000	Cfu /ml	7000	8000

	Microbial Count					
5.	Total Aerobic microbial Count	API Part II Vol. IV	>1000	Cfu /ml	400	450
6.	Escherich ia Coli	API Part II Vol. IV	Absent	Perl ml	Absent	Absent
7.	Salmonel la	API Part II Vol. IV	Absent	Perl ml	Absent	Absent
8.	Staphylo coccus aureus	API Part II Vol. IV	Absent	Perl ml	Absent	Absent
9.	Pseudom onas aerugino sa	API Part II Vol. IV	Absent	Perl ml	Absent	Absent

**DISCUSSION**

*Linganasha* is one of the major causes of blindness, experts have studied that *Gulbkawali Arka* has a great role in treating cataract.<sup>[7]</sup> It work as not only in treatment but also help in preventing cataract. In this study the *Arka* was prepared and its stability test to find out shelf life and other parameter of this *Arka* was performed.

**CONCLUSION**

In spite of great technological advances in the field of ophthalmic medicine and surgery, conservative therapy still continues to be mainstay for reversible ailments. Researchers are relentlessly in quest to identify plants metals and minerals with medicinal properties. Often, they are successful, proverbially, in turning over a new leaf. At the same time, there are numerous challenging problems, existing before modern ophthalmologists that require special attention to develop unexplored fields of medical knowledge hidden in ancient medical texts. In this study stability test was performed twice, first at zero month and 2<sup>nd</sup> at three months and then find out that this *Arka* is not stable more than 9 month of preparation.

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