

Formulation Development and Evaluation of Polyherbal Lozenges

Prashant Chitale¹ Shraddha Khaladkar²

Samarth Institute of Pharmacy, Belhe (Bangarwadi)

Tal – Junnar, District- Pune

Guidance- MS. Khaladkar S.M

Abstract

The main objective of the study is to formulate and evaluate polyherbal lozenge remedy for suppressing cough for sore throat and cold the polyherbal extract based lozenge includes Tulsi (Osmium sanctum) Dashmola Powder, Honey, Jaggery Gokhru Powder. The herb in polyherbal lozenges is osmium sanctum is utilized in cough treatment in unanani and ayurvedic medicine. The Tulsi is beneficial in relieving cough and cold symptoms due to its antimicrobial, anti-inflammatory, antitussive and anti-inflammatory properties. Tulsi along with honey helps relieve cough and flu and improve immune health. The second ingredient used in polyherbal lozenges is dashmola powder is used that reducing different types of fever. It not only body temperature and treats intermittent and high fever but also effective against fever due to common cold and flu or influenza. Both the polyherbal lozenges were evaluated for their physicochemical parameters such as weight variation, thickness, hardness, moisture content, hardness friability, disintegration diameter was identified and their results were revealed as all the physicochemical parameter for both soft and hard lozenges were within the monograph standard which are mentioned in GMP Guidelines.

Key Words:- Polyherbal Lozenges, Tulsi, Dashmola Powder, Gokhru Powder, Honey

INTRODUCTION:

To study is formulated and evaluated polyherbal lozenges remedy suppressing cough for sore throat and cold the polyherbal extract based lozenge includes Jaggery, Dashmola powder, Turmeric, Gokhru powder, Honey, Tulsi which are traditionally used for cough suppressant. Which give nutritive effect and soothing effect on the mucus membrane of the respiratory tract. The dried powder of all the ingredients where study is to formulate and evaluate polyherbal lozenge remedy for used for the preparation of polyherbal lozenges. Herbal lozenges are similar in size, and sometimes in flavour, to hard candies but are intended to ease sore throats and help people recover from colds, influenza, and similar illnesses. There are a number of such lozenges on the market, but herbal lozenges are usually made with primarily natural ingredients such as Tulsi Gokharu Powder, Dashmola Powder, Jaggery, Turmeric and honey.

Herbal Medicine (Also Herbalism) Is The Study of Pharmacognosy And The Use Of Medicinal Plants, Which Are A Basis Of Traditional Medicine. There Is Limited Scientific Evidence For the Safety and Efficacy of Plants Used In 21st Century Herbalism, Which Generally Does Not Provide Standards for Purity or Dosage. The Scope of Herbal Medicine Commonly Includes Fungal and Bee Products, As Well As Minerals, Shells and Certain Animal Parts. Herbal Medicine Is Also Called Phytomedicine or Phototherapy. Herbal lozenges are similar in size, and sometimes in flavour, to hard candies but are intended to ease sore throats and help people recover from colds, influenza, and similar illnesses. There are a number of such lozenges on the market, but herbal

lozenges are usually made with primarily natural ingredients such as Dashmola powder gokharu, and honey.

TYPES OF LOZENGES

There are three basic types of lozenges:

- Hard,
- Soft

- Chewable.

Hard lozenges: hard lozenge is generally formed using sucrose or other sugars similar to the process for hard candy confections that produce a hardened amorphous glassy material. To slow the rate of dissolution, polymers such as PEGs and HPMC may be added. Another type of hard lozenge may be made of compressed powders. An example of this is clotrimazole troches (lozenges) made as a large compressed tablet that is slowly dissolved in the mouth. The tablet base material is made of dextrose, MCC, and povidone. Soft lozenges: soft lozenge is often made using PEGs of sufficient molecular weight to provide slow dissolution in the saliva. Additionally, hydrocolloids such as acacia may also be added as an adhesive agent. Soft clotrimazole troches can be made this way by adding drug and acacia to melted PEG 1450 base and pouring into troche moulded cavities. Chewable lozenges: Chewable are typically based on glycerinated gelatine a base of glycerine, gelatine, and water. This base can be mixed with drug, acacia, and suitable flavouring and sweetening agents

ADVANTAGES OF LOZEGES

1. Ease of paediatric and geriatric patients.
2. Local and systematic effect
3. Increase contact time of drug
4. Prolong drug action
5. Cost of production is less.

DISADVANTAGES OF LOZENGES

1. Gastrointestinal side effect may be brother some
2. Patient must use proper chewing technique to minimize adverse effect

MATERIALS AND INSTRUMENT

Materials:

SR.NO	INGRIENDIENTS	QUANTITY
1.	Dashmola Powder	30 gm
2.	Gokharu Powder	30gm
3.	Honey	30ml
4.	Tulsi Powder	4gm
5.	Jaggary	250gm
6.	Menthol	2gm

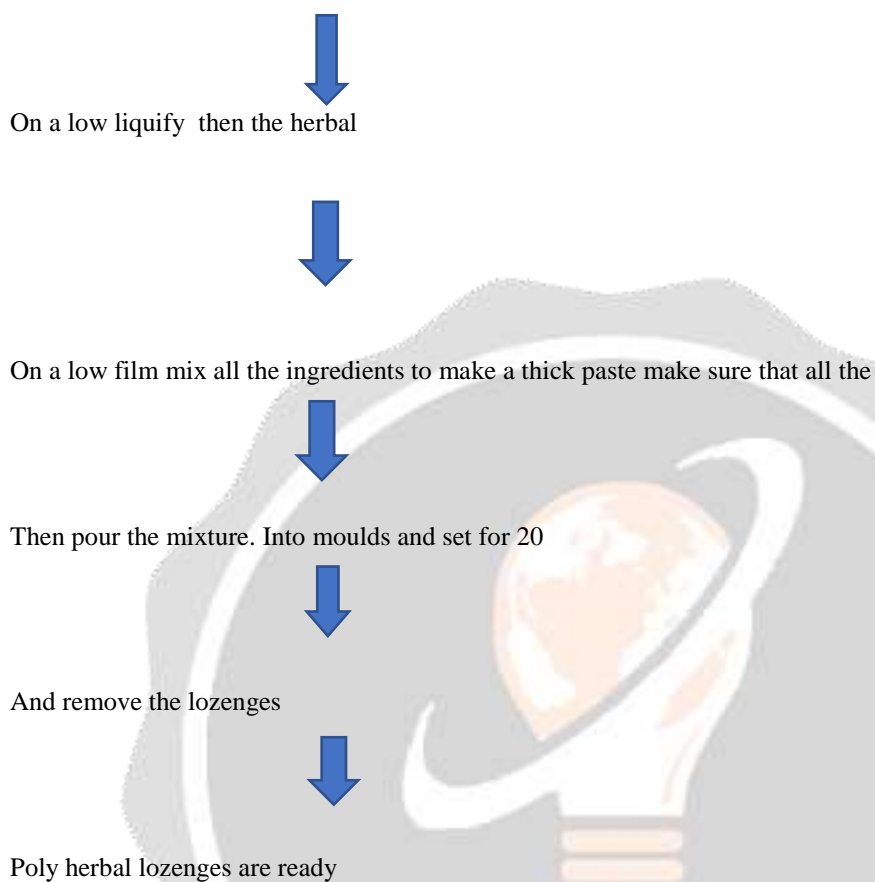
List of Materials

Instrument:

SR.NO	NAME OF INSTRUMENT/EQUIPMENT
1	Hardness Tester
2	Vernier Calliper
3	Friability Test Apparatus

4	Disintegration Test Apparatus
5	Ph Meter
6	Electronic Weighing Balance

The Procedure Of Preparing Lozenges Take a raw material hen mix all ingredients in mortar Pestle



Evaluation of Polyherbal Lozenges

Weight variation

Study weight variation ten tablets of the formulation were weighed using a digital balance and the test were performed according to the official method.

Five lozenges were randomly selected from each batch and individually weighed. To the average weight and standard deviation of 10 lozenges were calculated. The batch passes the test for weight variation test if not more than 2 of the individuals lozenges weight deviates from the average weight Calculation was done by using formula.

Average Weight = weight of lozenges

10

Weight Variation= $\frac{\text{Individual weight}-\text{Average weight}}{\text{Average weight}} \times 100$

Average weight

Disintegration time Studies

Disintegration time is the interval required for complete disappearance lozenges was performed according to USP30. By using a disintegration tester through the disintegration medium of phosphate buffer with pH 6.8 maintained at 37 ± 0.5 . The lozenge of optimized batch disintegrated in 90 Seconds which is acceptable for throat Lozenges. Disintegration time was also within acceptance criteria of 90 seconds to 1.5 minutes depending on type of lozenges.

Friability

Friability of tablet was determined using Roche Friabilator. It is expressed in percentage (%). Ten lozenges were initially weighed and transfer into friabilator. The friabilator was operated at 25 rpm for 4 minutes. The lozenges were weighed again after taking out tables and brushing the dust away. If lozenges are found broken or cracked and the final value exceed the limit test is consider failed. The value should be no more than 1% (0.5 -1.0%). If exceed repeat three time for overall estimation. The

% friability was then calculated with the help of formula.

Measurement of Ph

Friability = $(InitialWeight - FinalWeight) \times 100$

InitialWeight

Hardness

Hardness indicates the ability of the lozenges to withstand mechanical shocks while handling. The hardness of the lozenges was determined using Monsanto hardness tester. It is expressed in kg/cm². Three lozenges were randomly picked and hardness of the lozenges was determined.

Stability

The optimized formulations were subjected to stability studies at temperature i.e., 40°C

/75% RH for a period of one month.¹⁴

Application of Polyherbal Lozenges

1. It is used to medicate the mouth and throat for the slow administration in digestion or cough remedies.
2. Lozenges may contain an aesthetic, a demulcent, or an antiseptic.
3. Lozenges provide a pleasant dosage form for patients who are unable to swallow other types of solid dosage forms.

Conclusion

The present research work was performed on the development and evaluation of polyherbal lozenges. They are safe and effective with negligible side effect. Our work is based on the Polyherbal which are used to make polyherbal lozenges. We formulate polyherbal lozenges with herbs like Dashmola powder and Gokhru powder, which shows the anti-tussive activity. It also contains the other ingredients like Turmeric, Tulsi, Jaggery and Honey which use as sweeteners and give the soothing property. According to stability study there were no change in Organoleptic properties and taste of a Polyherbal Lozenges.

REFERANCE

1. H.N. More, A.A. Hajari, Practical Book of Physical Pharmacy Third Edition, December 2016 Page no.121-122.
2. Dr C K Kokate, Proff A P Purohit, Proff.S B Gokhale theory book of Pharmacognosy 56th edition by nirali prakashan, page no. 14.69,14.70,8.46,8.47,14.138,14.139
3. Raymond C R owne, Paul J Shekey and Marian E Quinn handbook of pharmaceutical excipients page no. 433
4. Sudip Das, Dr Shubhrajit Mantry, Ravi Shankar A practical book of physical pharmaceutics nirali prakashan page no. 145-146.
5. Panati C. Panati's extraordinary origins of everyday things. New York: Harper and Row. ISBN 0060964197. 1989;258 and 8211;260.
6. Aulton ME. Pharmaceutics: the science of dosage form design. Churchill Livingstone. 2000.

7. Purushotham RK, Venkateswarlu P, Shashikala P, Saran SV, Ravindranath A, Ashok KC. Medicated lollipops for the treatment of oral thrush in children. *Int J Life Sci Biotechnol Pharm Res* 2012;1:95-102
8. Dr.G.N. Pramodini, Marwa Riyaz, Syeda Shiza Fatima, Khan Matiur Rehman, Habibur Rehman and Mohd. Abul Hasan Khan, Formulation and Evaluation of Polyherbal Lozenges, *World Journal of Pharmacy and Pharmaceutical Science* 2022 July 11(9)1231.
9. DharmajitPattanayak and Saumya Das, *International journal of pharmaceutical science and research* (2011), Vol. 3, Pg. No.01-02.
10. Hina Rehman, *American Journal of Advanced Drug Delivery* (2017), Pg. No.011-018.
11. Vasudev Pai, *Indian Journal of Pharmaceutical Education and Research* (2019) Vol. 53. Pg. No. 01-02.
12. Dahiya J, Jaiswal P., Arora S., Singh B. formulation and evaluation of polyherbal lozenges *Pharma innove* (2015), 4:97
13. Umashankar M S, Dinesh S R, Rini R, Lakshmi K S, Damodharan *World Journal of Pharmacy and Pharmaceutical Sciences* (2016), 7(4).
14. Rao P, Zakaullah S. Formulation of Clotrimazole as lozenge tablet *JPBMS*, 2011, 12
15. Pundir S Varma AM Formulation development and evaluation of antiemetic lozenges of onantitussive. *Int J pharm Biol sci* 2014;1:365-72.
16. Controller of Publication. *Pharmacopoeia*. New Delhi, Indian: Controller of Publication, 2007; 1: 1576.
17. Rupali chanda, lavanya nallaguntla. formulation and evaluation of medicated lozenges for sore throats, 2020; 13: 10. [Online]. *Asian journal of pharmaceutical and clinical research*, 2020.

