

# DEVELOPMENT OF FACE MASK USING GLYCYRRHIZA GLABRA

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**Abstract:** Melasma is caused because of stress, hormonal changes, or from sun exposure. Ultraviolet (UV) light from the sun stimulates the melanocytes cell. Which then begin producing increase melanin, resulting in patches of discoloration. The dark patches than your usual skin color. When compared to men, women are much more likely to develop this condition. It typically occurs on the cheeks, forehead and bridge of the nose, chin. Recently, attention has been focused on identifying natural herbs. Glycyrrhiza glabra compounds with high biological activity, especially antioxidative, Anti-inflammatory and antimicrobial properties, for preventing and controlling various skin conditions, including melasma, hyperpigmentation, are more common these days with people. This article aims to develop a face mask using Glycyrrhiza glabra commonly known as licorice root. This root is commonly known for its UV fighting super ingredient and hyperpigmentation. The usage of medical non-woven cotton material in Face masks is friendly to sensitive skin.

**keywords:** Melasma, licorice root, UV fighting, Natural herbs, Face mask, Glycyrrhiza glabra.

## INTRODUCTION

It has been the growing trend on organic and identifying natural herbal compounds with high biological activity. The Ayurvedic system has gained importance in which the plants as the primary source of cosmetics before the use of the synthetic substance with similar properties and effectiveness Than adverse reactions of natural ingredients such as flowers, herbs, root, leaves suggests Ana Sofia Ribeiro et al., (2015).

The word Natural was defined as the ingredient or substance produced by the nature or found in nature or extracted from plants or animal sources. The Ayurveda system manages several diseases with plants as they gained popularity globally. Glycyrrhiza glabra(licorice), also known as Yashtimadhu, was a Grandfather herb and most common Chinese herbal medicine with a very long history of use. As it has antioxidative and anti-inflammatory properties to treat many diseases such as acne and helps in skin aging says Monica (2016).

Glycyrrhiza glabra was a widespread herb found growing in southern Russia, central Asia, China, and America. The major compounds found in Glycyrrhiza glabra include other saponins, flavonoids such as flavanones, isoflavones, chalcones as well as coumarins, and other phenolics states Kowalska et al., (2019).

The use of bioactive extracts or phytochemicals from a variety of botanicals in cosmetics accomplishes two functions: care of the body and as ingredients to influence the biological functions of the skin, providing the nutrients for healthy skin. Generally, botanical products are a rich source of vitamins, antioxidants, essential oils and oils, hydrocolloids, proteins, terpenoids, and other bioactive compounds. According to their composition, these extracts can provide different properties says Ana Sofia Ribeiro et al., (2015).

The licorice extracts are high in anti-inflammatory and antioxidative properties, the process of production of free radicals which intensify the aging process of cells. and even skin pigmentations which are considered as uneven skin tone or alterations seen in the skin such as melasma are the brown patches, on cheeks and forehead. It is mainly found in higher skin types(III, IV, and V) and it is especially prominent among Asian and Hispanic people. The pigment deposition in melasma was epidermal or dermal based, in most cases showing both says Rajsekhar ( 2012).

The extract in which the bioactive or phytochemicals in cosmetics accomplishes the functions of body care ingredients to influence the biological functions of the skin provides the nutrients for healthy skin and bioactive is a rich source of vitamins, antioxidants, essential oils, and extracts. Proteins, hydrocolloids, terpenoids, and other bioactive compounds. Based on the extraction it can provide different properties suggests Ana Sofia Ribeiro et al., (2015).

Glycyrrhiza glabra or licorice was an effective extract with glabridin and hydrophobic fraction that inhibits tyrosinase activity and it was an effective pigment lightening agent. This was one of the herbs with the least side effects. Some other active compounds in licorice root extract disperse melanin, which inturns light the skin pigments that are Licochalcone A, Isoliquiritin, and glabrate states Cronin H et al., (2010)

The color of hair, skin, eyes are by the human are produced by melanin in the body. The process of produced and secreted, through a physiological method called melanogenesis, by the melanocytes, that are distributed in the basal

layer of the dermis. Eumelanin, black or brown, and pheomelanin, red or yellow are the two types of melanin pigment produced by melanocytes. And so the color of human hair and skin was determined by the type and distribution of melanin pigment. Thus the melanin produced was different for each individual of different racial groups, in general, the same number of melanocytes. Higher levels of melanin are produced by darker skin that was genetically programmed. Skin disorders such as melasma, freckles, and senile lentigo are accumulated in abnormal and biosynthesis of melanin pigment. To inhibit the catalytic activity of tyrosinase, and disrupt the synthesis or release of melanin pigment numerous approaches have need attempting to find chemicals. Many compounds have a tyrosinase inhibiting activity, leading to the decrease of melanin total production suggests Ana Sofia Ribeiro et al., (2015).

### **OBJECTIVES**

- ❖ To identify the Natural source for Finishing Face Mask.
- ❖ Extraction and finishing of *Glycyrrhiza glabra* Face Mask.
- ❖ To evaluate Qualitative and Quantitative analysis

### **MATERIALS AND METHODS**

#### **SELECTION OF PLANT**

*Glycyrrhiza glabra* commonly known as licorice root was selected as it has compounds with antioxidative, anti-inflammatory, and antimicrobial properties which make it suitable for many possible applications in dermatology and cosmetology for controlling various skin conditions. This is very rare to cause allergy as observed.

#### **COLLECTION OF PLANT**

The powder form of licorice root was collected from an organic store in Tirupur

#### **EXTRACTION OF GLYCYRRHIZA GLABRA**

The process of extraction of plant materials was important as the quality and quantity were determined by the extraction method. Here the extraction of *Glycyrrhiza glabra* was done by hot process herbal extract (Glycerin based) Preparing the extract

Measure out 10g of *Glycyrrhiza glabra* [powder]. Add at least 20g water to ensure the herb was covered completely. If the herb was very fibrous, you may need up to 50g water to cover the herb completely. Cover and heat to a gentle boil for 30 minutes or up to 2 hours (select your method and use the same method each time). Do not let your herb boil dry – add more water to cover it if needed. Pour off the liquid portion of the extract and record the weight. Makeup to 20g total with water. Add 80g glycerine. This makes a 1:10 extract ratio where 1 part herb creates 10 parts extract (a 1 in 10 dilutions). 100ml of herbal extract is equivalent to 10g of dry herb.

#### **FINISHING OF GLYCYRRHIZA GLABRA EXTRACT**

The finishing process was done by the dip and dry method. Non-woven cotton sheet material was soaked in the *Glycyrrhiza glabra* extract in the ratio of 1:1 for 5 to 10 minutes. Then the soaked non-woven cotton sheet mask was applied to the person with this condition and it was left on them for 20-30 minutes. Then it was removed from the face. The process was done for 8 to 10 weeks to check the results and changes observed were noted.

#### **IDENTIFICATION OF MICROBIAL GROWTH**

A shelf-life check was done to make sure the extracted product maintain it supposed physical, chemical, and microbiological quality, moreover as practicality once keep beneath acceptable conditions. It was done to see however long a product can keep safe and usable beneath traditional conditions. Intended use Nutrient agar was used as a general medium for the cultivation of less fastidious microorganisms, will be enriched with blood or alternative biological fluids. Plant samples were spread into the media. After that, the plates were incubated at 37°C for twenty-four hours. The colonies were measured and noted.

#### **PREPARATION OF THE BACTERIAL INOCULUM**

Preparation of agar: Intended use Nutrient Agar is employed as a general medium for the cultivation of less fastidious microorganisms, will be enriched with blood or alternative biological fluids.

Composition:

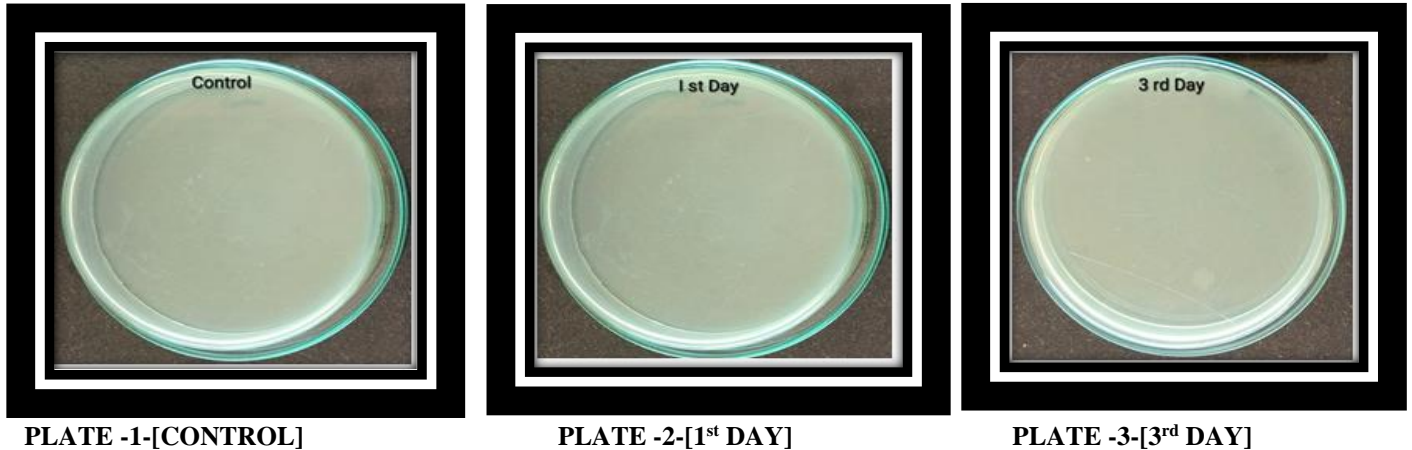
Ingredients Gms / Litre Peptone 5.0, Sodium chloride-5.0, Peptone 1.50, Yeast extract one.50, Agar 15.0 Final pH ( at 25°C) 7.4±0.2 Formula adjusted, standardized to suit performance parameters Directions Suspend 28.0 grams in a thousand millilitre purified/distilled water. It was boiled at medium heat. Sterilized by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Combine well and pour into sterile Petri plates.

Shelf Life Test:

Plant samples were unfolded into the media. After that, the plates were incubated at 37°C for twenty-four hours. The colonies were measured and noted.

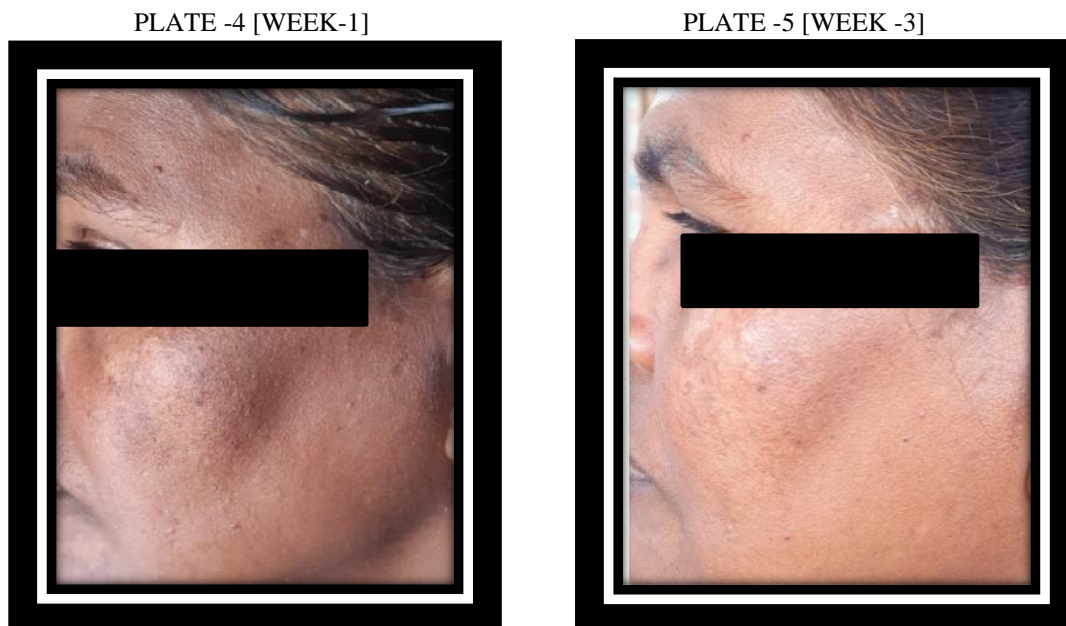
**RESULTS AND DISCUSSION**

The extraction of *Glycyrrhiza glabra* was done, and the concentrated solution is very much potential for application.



S.NO	SHELF LIFE TEST	NO OF COLONIES OBSERVED
1	Control	No colony
2	Extract -1 <sup>st</sup> Day	No colony
3	Extract -3 <sup>rd</sup> Day	1 colony

The self-life test observed, that the 1<sup>st</sup> day results was shows no bacterial colonies observed and 3<sup>rd</sup> days results show only one colony was observed when compared to the control plate. The given sample is more sensitive to microbial condemnation.



The results of the above images showed that there are changes observed from week -1 to week-3. The extraction of *Glycyrrhiza glabra* with non-oven sheet mask proofs that the longer the usage the longer the results.

**SUMMARY AND CONCLUSION**

The growing trend of natural cosmetics has resulted in the increasing use of naturally-derived substances. Glycyrrhetic acid is the major active, compound of a licorice root extract that helps to treat pigmentation. It has a wide range of biological properties and dermatological applications. Natural plant herbs especially help to treat various skin concerns. It was used to treat melasma which is pigmentations seen in brown patches. Whereas licorice root extract helps lighten the pigmentation. This study focused on the development of a sheet mask with Glycyrrhiza glabra extract.

**The Objectives**

- ❖ To identify the Natural source for Finishing Face Mask.
- ❖ Extraction and finishing of Glycyrrhiza glabra Face Mask.
- ❖ To evaluate Qualitative and Quantitative analysis.

**CONCLUSION**

The Natural plant (Glycyrrhiza glabra) was extracted. Melasma may go away, depending on the person under treatment for a few months. Licorice was also considered treating; it improves Melasma by dispersing the melanin. It can also be used for any skin type which can help to brighten skin, reduce pigmentations and spots. As the natural herbal plant which rarely causes allergy. Herbal extracts have been increased to many forms of development. It was clear that natural sources and extracts represent a repository of ingredients that can be used in topical treatments to achieve improvement of the overall appearance of the skin. The results of the study that natural plant extracts can be efficiently used to formulate such products, and they may be used in many forms of application.

**REFERENCES**

- Ana Sofia Ribeiro, Marilene Estanqueiro, M. Beatriz Oliveira and José Manuel Sousa Lobo, (2015), Main benefits and applicability of plant extracts in skin care products cosmetics, 2, pp. 48-65.
- Cronin H, Draeos ZD, (2010), Top 10 botanical ingredients and anti-aging creams. Journal of Cosmetic Dermatology, 9(3), pp 218-225
- Herbal extract- <https://youtu.be/DWZJEqv7kqY>.
- Kowalska and U. Kalinowska-Lis, (2019), 18b-Glycyrrhetic acid, its core biological properties and dermatological applications. International Journal of Cosmetic Science, 41 pp. 325-331.
- Monica Damle Joshi, (2016) Glycyrrhiza glabra (Licorice) - a potent medicinal herb, International Journal of Herbal Medicine 2014, 2(2), pp. 132-136.
- Rajsekhar Saha Saha, (2012), Cosmeceuticals And Herbal Drugs, Practical Uses, 3(1): pp. 59-65.