



## AIM:- A BRIEF REVIEW ON HERBAL PLANTS USED TO TREAT ECZEMA

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### **ABSTRACT: -**

*Eczema*, also known as atopic dermatitis, presents a significant challenge in clinical management due to its multifactorial etiologic and variable clinical manifestations.

Conventional treatments often focus on symptom relief and inflammation control, yet concerns regarding their long-term safety and efficacy persist. In recent years, there has been growing interest in exploring herbal therapies as adjunctive or alternative treatments for eczema management. This review aims to provide a comprehensive overview of the development and evaluation of topical herbal formulations specifically targeted at managing infectious eczema. Beginning with an introduction to eczema, encompassing its prevalence, underlying pathophysiology, and conventional treatment modalities, the review sets the stage for exploring the potential of herbal therapies. It delves into the significance of herbal treatments in eczema care, emphasizing their potential advantages such as efficacy, safety, and patient acceptability. The

review then outlines the systematic approach to formulation development, encompassing the selection of herbal ingredients, optimization of base formulations, and rigorous stability testing. Safety evaluation strategies, including toxicological assessments, skin irritation potential, and allergenicity testing, are discussed to ensure the safety and tolerability of the herbal formulations. Efficacy evaluation involves assessing anti-inflammatory properties, antimicrobial activity, and conducting well-controlled clinical trials to determine their clinical efficacy and impact on patient outcomes. Through a comprehensive discussion and analysis, this review aims to elucidate the potential of topical herbal formulations as promising therapeutic options for managing infectious eczema, while also identifying areas for further research and optimization.

**Keyword: -** *Eczema, atopic dermatitis, herbal therapies, topical formulations, infectious eczema, anti-inflammatory, anti-microbial, clinical efficacy.*

## 1. INTRODUCTION: -

The inflammatory system in our body is a defence response to harmful stimuli, including tissue injury and allergies. It typically happens when pathogenic microorganisms, including viruses, bacteria, or fungi, enter the body, settle in certain tissues, or enter the bloodstream. The process can also be triggered by ischemia, degeneration, cancer, tissue damage, or cell death. Several therapies are currently available to regulate and reduce inflammatory crises. These include steroids, nonsteroidal anti-inflammatory drugs (NSAIDs) agents, and immunosuppressants. However, it is important to note that these medications can have adverse effects. To reduce these side effects, we use the lowest effective dose that maximizes efficacy.

Herbal therapy, widely adopted by traditional medical practitioners, offers valuable insights into the potential uses of Various underexplored therapeutic plants. Herbal medicine is the most popular form of traditional medicine with a long history. The information is transmitted from one generation to another. Different herbs show variable therapeutic response. According to WHO reports, more than 80% people in Asia rely on traditional medicines for treatment of diseases. Such medicines are used for treating various chronic diseases including skin disorders and different infections.

### ***Glycyrrhiza glabra*: -**

*Glycyrrhiza glabra*, commonly known as liquorice, has been investigated for its potential in treating eczema due to its anti-inflammatory and antioxidant properties. The active compound in liquorice, glycyrrhizin, has demonstrated anti-inflammatory effects by inhibiting certain

inflammatory pathways. It can also help to soothe the skin and reduce redness and itching associated with eczema. However, the effectiveness of liquorice in treating eczema can vary among individuals, and more research is needed to fully understand its potential. *Glycyrrhiza glabra* having anti – inflammatory properties so they are reducing redness and swelling associated with eczema. Due to its antioxidant properties, they are protecting the skin from oxidative stress and promoting healing. They are also able to calming and soothing eczema-affected skin. Liquorice offers a natural, potentially effective way to manage and soothe eczema symptoms.

### ***Chamomilla recutita*: -**

*Chamomile* has been used to treat eczema due to its anti-inflammatory, antioxidant, and soothing properties. It contains compounds like flavonoids and terpenoids that may help reduce skin inflammation and irritation. Chamomile can be used in various forms, such as creams, lotions, or compresses. Some studies suggest that chamomile may improve eczema symptoms like itching, redness, and dryness. However, the effectiveness of chamomile can vary among individuals, and more research is needed to fully understand its potential. *Chamomilla recutita* having anti- inflammatory properties they are able to reducing redness and swelling associated with eczema. Due to its anti- oxidant properties, they are Protecting the skin from oxidative stress and promoting healing. They are also Calming and soothing eczema-affected skin. Chamomile offers a natural, potentially effective way to manage and soothe eczema symptoms. Its calming effects can also help reduce stress, which may contribute to eczema flare-ups.

**Golden shower: -**

The *Golden Shower*, or *Cassia fistula*, is a semi-wild Indian Laburnum that grows throughout Asia, South Africa, Mexico, China, and the West



Indies. Brazil and East Africa. It's a decorative tree with lovely clusters of yellow blossoms. This evergreen climber is extensively employed in the conventional Indian medical system, Ayurveda, to cure an extensive range of ailments. It is also applied to the management of persistent mucous diseases, leprosy, bronchitis, dropsy, goitre, and sight tumours, sore throats, skin conditions, and weakness. Scabies is treated with leaf juice twice a day for six days. One of the ingredients in "SULAK" (*the drug used to cure leprosy*) and its cream is origin powder. Native Americans make extensive use of this plant to treat a wide range of conditions, such as ringworm and other fungal skin illnesses. Significant antibacterial action was shown by *Cassia fistula*, and displayed characteristics that encourage the use of folklore in the healing of many illnesses as all-purpose antimicrobials. Because ripe apple pulp has a somewhat pleasant purgative effect. and also possesses antifungal qualities. In its whole, the plant is fruits, flowers, and seeds are utilized to alleviate diarrhoea. Address conditions of the skin.

**2. WHAT IS ECZEMA?**

- Eczema is a skin condition that causes dry and itchy patches of skin. It's a common condition that isn't contagious. Symptoms of eczema can flare up if you contact an irritant or an allergen. There are treatments available to help you manage symptoms, but there isn't a cure.
- Eczema, also known as atopic dermatitis, is a chronic skin condition that causes dry, itchy, and inflamed skin. It's a common condition, especially in children, but can affect people of all ages. The exact cause of eczema isn't fully understood, but it's believed to be a combination of genetic and environmental factors.
- According to WHO reports, more than 80% people in Asia rely on traditional medicines for treatment of diseases. Such medicines are used for treating various chronic diseases including skin disorders and different infections.
- Many medicinal plant species worldwide are used in traditional medicine for treating different diseases. The world health organization (WHO) has estimated that about 80% of the population living in the developing countries depends tremendously on traditional medicine for their primary health needs.
- Dermatitis was estimated to affect 245 million people globally in 2015 or 3.34% of the world population. Atopic dermatitis is the most common type and generally starts in childhood. In the United States, it affects about 10–30% of people. Contact dermatitis is twice as common in females as in males.

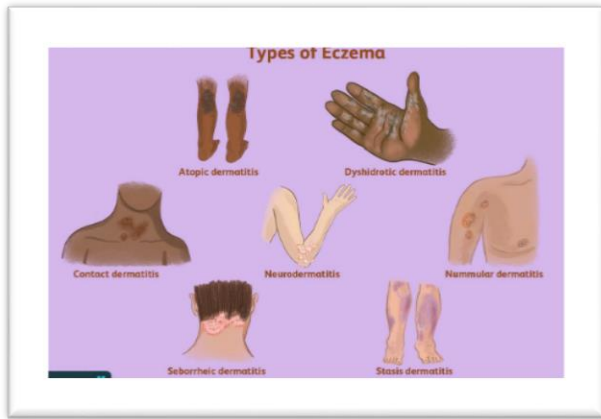


Fig no.1: Eczema

➤ **TYPES OF ECZEMA:** -

- Atopic dermatitis
- Contact dermatitis
- Dyshidrotic eczema
- Neurodermatitis
- Nummular eczema
- Seborrheic dermatitis

Fig no.2: Types of eczema

➤ **CAUSES OF ECZEMA:** -

- Genetic
- Immune system factor
- Scratching rubbing
- Stress
- Dry skin

➤ **SYMPTOMS OF ECZEMA:** -



Fig no.3: Symptoms of eczema

➤ **SKIN ANATOMY:** -

- The skin is the largest organ in the body, covering about 20 square feet in total surface area. Our epidermis allows us to feel touch, heat, and cold, as well as shields us from microbes and the surroundings. It also aids in regulating one's body temperature.
- It is composed of three main layers: The epidermis (outer protective layer), the dermis (middle layer with nerves, blood vessels, and hair follicles), and the hypodermis (deepest layer of fat and connective tissue). The epidermis is further divided into five strata, while the dermis contains structures like sweat and sebaceous glands. Together, these layers work together to protect the body, regulate temperature, and provide sensation.
- Other Important Structures of skin are: Hair Follicles (growth of hair connected to sebaceous glands), Sebaceous Glands (secrete oil to lubricate hair and skin), Sweat Glands (Help regulate body temperature and release waste products), Nerves (Sensory receptors that allow the

body to feel touch, pain, and temperature),  
Blood Vessels (supply nutrients to the skin  
and help remove waste).

➤ **HUMAN SKIN TYPES: -**

- Oily skin
- Combination skin
- Normal skin
- Dry skin
- Sensitive skin

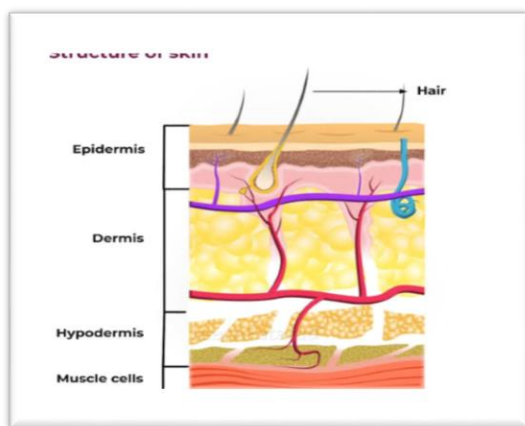


Fig.4: Structure of Skin

**3. LITERATURE SURVEY: -**

**1. Sophia A. Mense (2025)**

CHE is a multifactorial condition characterized by overlapping clinical subtypes and significant societal burdens. While patch testing remains a valuable diagnostic tool for identifying ACD, its universal application for CHE may not always be practical or beneficial. Many patients present with mixed or unclear etiologies, and real-world barriers including delays, cost, and impracticality of allergen avoidance can limit the practical impact of testing in clinical settings.

**2. Jason Valmy, *et al* (2025)**

In Summary, our meta-analysis confirmed that chamomile is an effective agent for pain relief, promoting better wound healing, and aiding recovery from iatrogenic conditions. Chamomile is significantly effective in reducing pain, maintaining mucosal integrity, and recovery from tissue injury. The exploration of chamomile's pharmacological properties continues to yield insights that enhance our understanding of its potential benefits and applications. Our findings show the significance of chamomiles in improving human health because it can potentially lead to novel therapeutic strategies. A future study with a larger sample size may provide clinical evidence of this effect.

**3. Aakash Babasaheb Chalge *et al* (2024)**

The conclusion begins by summarizing the key findings and insights generated from the review of the topical herbal formulation for managing infectious eczema. This recapitulation highlights the formulation's efficacy in addressing eczema symptoms, its safety profile, and its potential as an alternative or adjunctive therapy to conventional treatments. The key points serve to reinforce the significance of the study findings and their implications for eczema management.

**4. Muhammad Amjad Chishti *et al* (2024)**

The review that has been provided serves as a sort of showcase for medicinal plants that have particular therapeutic benefits for treating dermatitis. There is great potential for herbs to develop into powerful



therapeutic aids in the treatment of painful and debilitating chronic skin conditions in the future.

#### 5. Xiaoyu Ji, *et al* (2024)

This paper reviews the chemical composition and pharmacological properties of three liquorice species (*G. uralensis*, *G. glabra*, *G. inflata*). For centuries, liquorice has been used mainly in the medical industry. Currently, liquorice is recognized for its important uses in products including food, animal feed, and cosmetics. The applications and advantages of liquorice are mainly attributed to its rich bioactive components. The active ingredients in liquorice are mainly flavonoids, triterpenoid saponins, and polysaccharides.

#### 6. Sanjay K. Bais, *et al* (2023)

Herbs are widely used in India to treat various skin conditions, with around 80% of people relying on plant-based remedies due to their affordability and safety compared to allopathic medicines. These herbs contain active compounds effective against issues ranging from rashes to skin cancer. However, many medicinal plants are found in forests and face threats from deforestation and urbanization. Conservation and further research are essential to preserve these resources and enhance their potential in skincare.

#### 7. Yun-Lei Dai, *et al* (2023)

A lot of research has been carried out on chamomile in recent years. This article reviews the latest research progress on this

plant, including botanical characteristics, traditional uses, chemical constituents, pharmacological effects, and quality evaluation. A total of 301 compounds has been reported in Chamomile, including 26 organic acids, 50 flavonoids, 10 coumarins, 102 volatile oil constituents, 39 monoterpenes, 27 sesquiterpenes, 2 diterpenes, 3 triterpenes, 16 sterols, 6 polysaccharides, 3 guaiacolides, 7 trace elements and 10 other components. Flavonoids represented by apigenin have significant anti-inflammatory effects.

#### 8. Derek K. Chu, *et al* (2023)

This systematic review and NMA including 43,123 participants with primarily mild-to-moderate AD in 219 RCTs evaluating 68 interventions provides comprehensive comparative evidence addressing topical treatments for AD.

#### 9. Wasim Akram, *et al* (2023)

*Matricaria chamomilla* has been used as an herbal medication since ancient times. It is still popular today and probably will continue to be used in the future as it contains various bioactive phytochemicals with potent multimodal therapeutic activities. In light of this, therapies against the various human pathological conditions such as cancers, ulcers, inflammation, microbial infections, diabetes, and neurological illnesses may be suitably directed utilizing *Matricaria chamomilla* and its phytotherapeutics, either alone or in complementation of standard agents. However, there are certain concerns which must be addressed in order to establish

Chamomilla as a clinically relevant therapeutic agent.

#### 10. Sana Noreen, *et al* (2021)

liquorice (*Glycyrrhiza*) has gained attention due to the rising interest in plant-based medicines over allopathic drugs with more side effects. This review highlights its numerous pharmacological benefits, including antidiabetic, antioxidant, anti-inflammatory, anti-cancer, and liver-protective properties. liquorice chemical compounds show potential as leads for developing future therapeutic drugs.

#### 11. Ashima Ahuja, *et al* (2020)

The art of herbal remedial healing properties has deeply penetrated in the roots of the Indian system of medicine. With the emergence of science and technology and modern medical practice, people from all over the world are extensively dependent on the herbal remedial healing system for their primary health care.

#### 4. AIM AND OBJECTIVES: -

**AIM:** - “A brief review on herbal plants used to treat eczema.”

#### **OBJECTIVES:** -

1. To highlight the medicinal properties of herbal plant in the treatment of eczema.
2. To identify the potential benefits of herbal plant in treatment of eczema.
3. To provide concise overview for natural remedies for eczema management.

4. To discuss the potential benefits and limitations of herbal treatments.
5. To highlight any safety concerns or potential side effects associated with the use of herbal plants.

#### 5. PLANT PROFILE:

##### A) Liquorice

**Synonyms:** - Glycyrrhiza, Liquorice root, Glycyrrhizae radix, Mulhatti (Hindi), Mulhethi, Jethi Madh, Yashtimadhu

**Biological source:** - liquorice is the dried, peeled or unpeeled roots, rhizome and stolon of *glycyrrhiza glabra* Linn.

**Family:** - *Fabaceae*

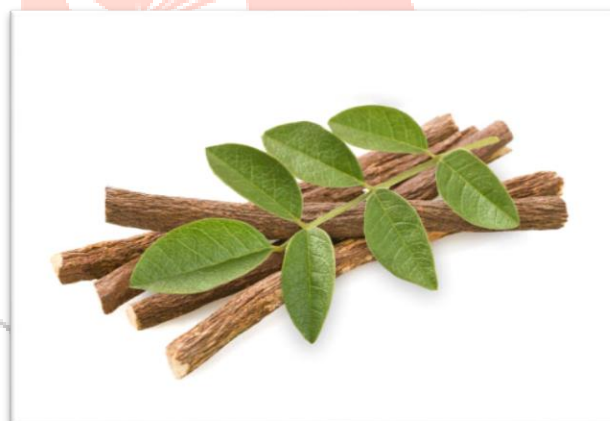


Fig no.5: Glycyrrhiza glabra

**Chemical constituents:** - liquorice root contains triterpenoids, polyphenols, and polysaccharides.

1. Glycyrrhizin/ glycyrrhizic acid (*major glycoside*)
2. Glycyrrhithic acid (*aglycone*)
3. Glucuronic acid
4. Liquiritoside, iso-Liquiritoside, liquiritin, isoliquiritin (*Flavonoid*/5. *Chalcone glycosides*)
5. Sugars-Glucose, mannitol

6. Resin, Volatile oil, Starch

**Uses:**

- Expectorant
- Demulcent
- Mouth ulcer
- Anti asthmatic

**Pharmacological activities of liquorice:**

- Anti-depressant
- Anti-diabetic
- Anti-cancerous
- Oral Health Disorders
- Anti-oxidant
- Anti-inflammatory
- Anti-asthma

**B) Chamomile:**

**Synonym:** Chamomilla recutita, Camomile, Matricaria chamomilla, Chamaemelum Nobile, Earth Apple

**Biological Source:** - The dried flower heads of Matricaria chamomilla

**Family:** - Asteraceae



Fig no.6: Matricaria chamomilla

**Chemical Constituents:**

1. Volatile oils: Such as bisabolol and chamazulene, which contribute to its anti-inflammatory and soothing effects.

2. Flavonoids: Such as apigenin and luteolin, which have antioxidant and anti-inflammatory properties.
3. Sesquiterpenes: Which also contribute to its anti-inflammatory and soothing effects.
4. Coumarins
5. Polysaccharides

**Uses:**

- Anti-inflammatory
- Antispasmodic
- Carminative (relieves gas)
- Wound healing
- Used in teas for relaxation and to aid sleep
- Topical applications for skin conditions

**Pharmacological activities of chamomile:**

- Antioxidant activity
- Anti-microbial activity
- Antiparasitic and insecticidal activities
- Anti-diabetic activity
- Anti-cancer and anti-inflammatory activities
- Analgesic and antipyretic activities
- Anti-anxiety and anti-depressant activities
- Anti-hypertensive
- Anti-allergic
- Gastroprotective effect

**C) Golden shower:**

**Synonyms:** - Amaltas (*Hindi*), Aragvadha, Indian laburnum, Purging cassia

**Biological source:** - The dried flowers of cassia fistula linn are used

**Family:** - Fabaceae (*Leguminosae*)





Fig no.7: Golden shower

#### Chemical constituent: -

1. Anthraquinones
2. Glycosides
3. Flavonoids
4. Lipids
5. Saponins
6. Terpenoids
7. Tannins
8. Sterols & triterpenes
9. Sugar
10. Mucilage

#### Uses:

- Flowers are considered cooling, soothing, and anti-inflammatory.
- Applied as flower paste or decoction to relieve itching, redness, and irritation in eczema.
- Helps in skin detoxification and wound healing.
- Acts as a mild antimicrobial, preventing secondary infections.
- Liver protection, Anti-bacterial and antioxidant qualities.
- To use Amaltas for skin issues.

#### Pharmacological activities of Golden shower:

- Anti-oxidant
- Anti-inflammatory
- Anti-bacterial
- Anti-fungal
- Laxative
- Hepatoprotective

#### 6. REFERENCES: -

1. Hattori M, Sakamoto T, Kobashi K, *et al.* Metabolism of glycyrrhizin by human intestinal flora. *Planta Med.* 1983; 48:38–42.
2. Yamamoto K, Kakegawa H, Ueda H, *et al.* Gastric cytoprotective anti-ulcerogenic actions of hydroxychalcones in rats. *Planta Med.* 1992; 58:389–393.
3. Chandler RF. Liquorice, more than just a flavour. *Can Pharm J.* 1985; 118:421–424.
4. Kumagai A, Nishino K, Shimomura A, *et al.* Effect of glycyrrhizin on estrogen action. *Endocrinol Jpn.* 1967; 14:34–38.
5. Kraus S, Kaminski A. The anti-estrogenic action of beta-glycyrrhizic acid. *Exp Med Surg.* 1969; 27:411–420.
6. Tamir S, Eizenberg M, Somjen D, *et al.* Estrogen-like activity of glabrene and other constituents isolated from liquorice root. *J Steroid Biochem Mol Biol.* 2001; 78:291–298.
7. Maggiolini M, Statti G, Vivacqua A, *et al.* Estrogenic and antiproliferative activities of isoliquiritigenin in MCF7 breast cancer cells. *J Steroid Biochem Mol Biol.* 2002; 82:315–322.
8. Farese Jr RV, Biglari EG, Shackleton CH, *et al.* Liquorice-induced hyper

- mineralocorticoidism. *N Engl J Med*. 1991; 325:1223–1227.
- 9. Stormer FC, Reistad R, Alexander J. Glycyrrhizic acid in liquorice—evaluation of health hazard. *Food Chem Toxicol*. 1993; 31:303–312.
  - 10. Takeda R, Morimoto S, Uchida K, *et al*. Prolonged pseudo aldosteronism induced by glycyrrhizin. *Endocrinol Jpn*. 1979; 26:541–547.
  - 11. Nassiff HA, Fajardo F, Velez F. Efecto del aloe sobre la hiperlipidaemia en pacientes refractarios a la dieta. *Rev Cuba Med Gen Integr* 1993; 9: 43-51.
  - 12. Vogler BK, Ernst E. Aloe vera: a systematic review of its clinical effectiveness. *Br J Gen Prac* 1999; 49: 823-8.
  - 13. Ferro VA, Bradbury F, Cameron P *et al*. In vitro susceptibilities of *Shigella flexneri* and *Streptococcus pyogenes* to inner gel of *Aloe barbadensis* Miller. *Antimicrobe Agents Chemother* 2003; 47: 1137-9.
  - 14. Rushforth K, editor. *Trees of Britain and Europe*. London: Collins; 1999.
  - 15. Syed TA, Ahmad SA, Holt AH. Management of psoriasis with Aloe vera extract in a hydrophilic cream: a placebo controlled, double- blind study. *Trop Med Int Health* 1996; 1: 505-9.
  - 16. Mill GP. Demonstration of the psychotropic effect of mother tincture of *Ziziphus jujube*. *Phytotherapy* 2009; 7: 31-6.
  - 17. Jiang JG, Huang XJ, Chen J, Lin QS. Comparison of the sedative and hypnotic effects of flavonoids, saponins, and polysaccharides extracted from semen *Ziziphus jujube*. *Nat Product Res* 2007; 21: 310-20.
  - 18. Mahajan RT, Chopra MZ. Phyto pharmacology of *Ziziphus jujuba* mill - A plant review. *Pharmacognosy Rev* 2009; 3: 320-9.
  - 19. Premila MS, editor. *Ayurvedic Herbs. A Clinical Guide to the Healing Plants of Traditional Indian Medicine*. Haworth Press; 2006. P. 208-15. Delhi:
  - 20. Winston D., Maimes S, editors. *Adaptogens: Herbs for Strength, Stamina, and Stress Relief*. Rochester: Healing Art Press; 2007.
  - 21. Shukla A, Rasik AM, Jain GK. In vitro and in vivo wound healing activity of asiaticoside isolated from *Centella asiatica*. *J Ethnopharmacol* 1999; 65: 1-11.
  - 22. Kartnig T. Clinical applications of *Centella asiatica* (L.) Urb. *Herbs Spices Med Plants* 1988; 3: 145-73.
  - 23. Arora *et al*. 7(5): 7126  
Phytopharmacologically importance of traditional healer tree: Golden shower, May, 2016: 5051- 5061 ISSN: 0976
  - 24. Indian herbal pharmacopoeia. Indian drug manufacturers association Mumbai. 2002;106
  - 25. Mohammad Asif Hanif *et al*. *Cassia fistula* (Golden shower): A multipurpose Ornamental tree. 20-26 2007 Golden science book.
  - 26. Priya Awasthi, Vipin Kesharwani *et al*. *Golden shower tree: Emerging medicinal properties composed of*

- phytochemistry IJP (2022), Vol.9,  
Issue11: 170-185.
- 27. Satyavati GV and Sharma M: In  
Medicinal plant in India, ICMR, New  
Delhi 1989.
  - 28. Biswas K and Ghosh AB: In Bhartiya  
Banawasadhi, Calcutta University,  
Advancement of learning, Calcutta, 2,  
1973:336.
  - 29. Chatterjee A and Pakrashi SC: The  
Treatise on Indian medicinal plants. Vol.  
II. Publication and Information  
Directorate, CSIR, New Delhi 1992;41-  
42.
  - 30. Anonymous, Medicinal plants of  
Gwalior Forest division. Survey of  
Medicinal Plants Unit, Aligarh, CCRUM  
1984;26.
  - 31. Thirumal M, Surya S and Kishore G:  
Cassia fistula Linn - pharmacogenetic  
phytochemical and pharmacological  
review. Crit Rev Pharmaceut Sci 2012;  
1:43-65.
  - 32. Gupta m, mazumdar UK, Rath N and  
Mukhopadhyay DK Anti-tumour activity  
of methanolic extract of cassia fistula L.  
seed against Ehrlich Ascites carcinoma.  
Journal of Ethnopharmacology  
2000;72;151-156

