

Formulation and evaluation of fairness cream

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ABSTRACT

Herbal cosmetics are the preparations used to enhance each person's look. The cream is made with many crude drugs, such as Almond Oil, Steric Acid, Sesame Oil, Alovera Gel, Turmeric, Rose Water. A number of evaluation criteria are applied to the ingredient selection process, which is based on the various therapeutic qualities of the agent in the cream (1). The pH, viscosity, spreadability and stability of the prepared base were investigated. The base was found suitable for making cream. In the preparation of the herbal cream, extracts of turmeric, Sesame oil, aloe vera and almond oil were combined with the main ingredient. The herbal cream showed good spreadability, good composition, homogeneity, appearance, pH, ease of removal and no. signs of phase separation. All herbal creams made have been found to be safe for the skin (2).

KEY WORDS: Almond oil, Sesame oil

INTRODUCTION:

The market for cosmeceuticals is growing quickly. The availability of novel ingredients, the financial incentives for creating profitable products, and the requirement for consumer formulation to maintain quality standards are the reasons for this increase. A formulation's quality should meet the needs of the user in terms of functionality. A deeper comprehension of skin physiology should be required given the plant parts used in cosmetic preparation. Products designed for application on the body with the intention of cleaning, beautifying, or changing look and improving beauty are called cosmetics. Cosmetics are made to combat acne, lessen wrinkles, and regulate oil production.

The demand for cosmetic products is growing rapidly. This expansion is due to the availability of new ingredients, the financial rewards of developing successful products, the composition of consumers must be careful to maintain the quality standard. The quality of the product must satisfy the consumer's need for its performance. Plant parts used in cosmetic production must require a better understanding of skin physiology. Cosmetics are products designed to be applied to the body to clean, beautify or change the appearance and enhance beauty. Cosmetics are designed to reduce wrinkles, fight acne and control sebum production. For different types of skin diseases, formulations such as skin protection, sunscreen, acne, anti-wrinkle and anti-aging are used with different materials, natural or synthetic. The process of developing cosmetic products has various properties such as antioxidant, anti-inflammatory, antiseptic, emollient, anti-seborrheic, kerolytic and antibacterial effects, etc. These herbal products are said to have fewer side effects that are usually seen with products containing synthetic substances. Subjects Market research shows that the trade of medicinal plants with the herbal cosmetic industry plays an important role in increasing global demand for this herb. A review of the literature revealed that Aloe vera is used as a soothing skin protectant. It also acts as an antimicrobial agent. Curcuma longa has anti-inflammatory properties and is used in various lotions and creams. It contains curcuminoids as an antioxidant, curcumin as a bactericidal, antifungal and anti-inflammatory agent. Therefore, it is beneficial to normal human keratinocytes Almond oil contains vitamin C, which is considered important to prevent aging radicals. Vitamin C is a scavenger of free radicals that breaks them down. Curcuma longa is commonly known as Turmeric or haldi, which is said to have anti-carcinogenic, antiviral, antioxidant, antibacterial, anti-genotoxic, etc. The properties of these plant extracts support this in addition to being ingredients in cosmetic products. Thus, this study was conducted to formulate and evaluate an herbal fairness cream.

Benefits of fairness cream:

- 1) Shiny black spot.
- 2) Lightens skin.
- 3) Long lasting colour.
- 4) Glowing skin.

5)Does not irritate skin.

There are a number of medicinal plants. Herbal cosmetics "Natural cosmetics" is another term that refers to herbal cosmetics. Since the dawn of civilization, humans have been drawn to impress others with their appearance. There were no advanced smoothing creams or cosmetic methods available at the time. Their only resource was the natural knowledge contained in Ayurveda. Many plants and herbs have been used to create an effective Ayurvedic cosmetic formula using the science of Ayurveda. Ayurvedic makeup not only beautified the skin, but also protected the body from external influences. Ayurvedic cosmetics, also called herbal cosmetics, have excellent properties even today. Herbal cosmetics come in many forms and are often used in everyday life. The public is very fond of herbal cosmetics, including herbal cosmetics, conditioners, soaps, shampoos and many new products. The fact that herbal cosmetics are made entirely from herbs and shrubs is their best feature. The natural ingredients of herbs provide the body with nutrients and other beneficial minerals without any negative effects. Herbs like ashwagandha, sandalwood (chandan), saffron(kesar) and many others are used in herbal cosmetics and are enhanced with nutrient rich sand. Herbs are used in cosmetics either raw or in the following agreed forms. The basic principles of skin care cosmetics are deeply rooted in the medical systems of Rigveda, Yajurveda, Ayurveda, Unani and Homeopathy. Today, herbal knowledge and experience combines with cutting-edge cosmetic technology to create an improved and safe beauty product that is more acceptable to a wider range of people. Basically, beauty is created by nature and refined by technology. Herbs have the advantage of a wide range of consumer compliance with negligible or no negative effects. Out of about Rs 2,000 crore, the herbal cosmetics industry accounts for about Rs 200 crore of the country's total cosmetics business. The entire cosmetics market is growing 20-25 percent annually. About 60% of this growth comes from the herbal cosmetics market. Liquids and other herbal extracts have proven to be a panacea for several distresses such as heart problems, digestive problems and mental exhaustion. Plant extracts have sometimes proven to be more accurate than English medicines, which usually consist of complex chemicals. Compared to medicines, plant extracts have an incredibly low possibility of side effects. This is why it is believed that plant extracts are common as medicines and drugs. Plant extracts have also shown commercial potential. Global cultivation of plant extracts has made them well known in the horticultural industry. Today many people are attracted to nature and many cosmetics, trendy goods and other products are made from it. The liquid juice is then combined with other ingredients to produce herbal extracts.

.Herbal cosmetics are preserved in an effective manner with the following benefits.

- Natural, least harmful effect on skin or other part of the body
- Relatively safer
- More placebo effect for consumers because it is used in tradition and culture
- Flexibility of formulation
- Population shows effects since ancient times
- Current situation

The global market for cosmetics and hygiene products reached early 150 billion dollars (125 million euros) in 2004, which is more than 4 percent more than in 2003. The new study highlights key emerging markets for significant growth. In India alone, trade in medicinal herbs is around 5.5 billion rupees. The World Health Organization (WHO) has predicted that by 2050 the world market for herbal products will be worth a trillion. Global Out of about 2000 million, the herbal cosmetics industry accounts for about 200 billion of the country's entire cosmetics business. The entire cosmetics market is growing 20-25 percent annually. About 60% of this growth comes from the herbal cosmetics market. Liquids and other herbal extracts have proven to be a panacea for several ailments such as heart problems, digestive problems and mental exhaustion. Plant extracts have sometimes proven to be more accurate than English medicines, which usually consist of complex chemicals. Compared to medicines, plant extracts have an incredibly low possibility of side effects. This is why it is believed that plant extracts are common as medicines and drugs. Plant extracts have also shown commercial potential. In 2007, Europe and the United States are the two largest plant markets in the world, with a market share of 41 percent and the United States 20 percent.

According to the World Bank, the global market for medicinal plants and their products includes potential pharmaceutical, nutritional and cosmetic sectors, worth US\$1 billion, and offers people opportunities for Indian pharmaceutical and cosmetic companies. Today, the new hot topic in the cosmetics industry is 'cosmetics', the fastest

growing segment in the natural hygiene industry. Cosmeceuticals are topical cosmetic pharmaceutical hybrids designed to improve appearance with ingredients that provide additional health functional benefits. They are used topically as cosmetics, but they contain ingredients that affect the biological function of the skin. These cosmetics, which act as a bridge between personal care products and medicines, are specially developed for their medical and cosmetic benefits. . . To determine the origin of cosmetics, the first use of cosmetics is associated with the Egyptians, around 4000 BC. Ancient Sumerians, Babylonians and hebrews used cosmetics as well. Otherwise, as in European cosmetics, Ceruse was used from the second century to the 19th century. Cosmetically active ingredients are constantly being developed by companies large and small in the pharmaceutical, biotechnology, natural products and cosmetics industries, while advances in the field and knowledge of biology and pharmacology have facilitated cosmetic development. Compounds faster. These cosmetic substances act as a bridge between hygiene products, medicines and plants. Cosmetically active ingredients are now used by cosmetics, drugs, biotechnology and natural extracts large and small manufacturers in the production of cosmetics. An advantage in cosmetics and knowledge of skin biology and pharmacology facilitated the formulation of cosmetic products. Consumer trends Change the gender distribution of the male market share(4).

Materials and methods

The materials used in the present procedure from wild resources for further use. The below are the detail of the plant material study. The detail of the plant material used for the Formulation and evaluation of fairness cream are mentioned below.

1] Aloe vera:

Synonyms:

Aloe, Musabbar, Kumari

Biological source:

Aloes is the dried juice of the leaves of plants in the Liliaceae family, such as Aloe barbadensis Miller, also known as curacao aloes, Aloe perryi baker, also known as socotrine aloes, Aloe ferox Miller, and hybrids of these plants with Aloe africana Miller and Aloe spicata baker, also known as cape aloes.

Geographical source:

Aloes are native to the islands of Socotra, Zanzibar, and Cape Colony in Eastern and Southern Africa. Additionally, Carabbean Island, Europe, and other regions of India, especially the Northen West Himalaya region, cultivate it.

Chemical constituents:

Aloe-emodine , barbaloin, alooesin



Aloe vera

Importance Of skin:

1. Aloe is used as a cleanser. Its effect is mainly on the large intestine.
2. It has a stronger cleansing effect than all crude drugs containing anthracene glucoside.
3. It is given with carminatives to counteract the combined effect.
4. Aloin is now preferred over aloe, both of which are official.
5. Aloe has many other uses besides its cleansing properties.
6. It is an ingredient of benzoic compound tincture (Friar's Balm Aloe gel formed in the inner parenchyma cells of the leaf is a slightly viscous and clear liquid).
7. During collection, it must not be contaminated with aloe juice. Such gel is used in therapeutic applications and also in many cosmetic products, but the therapeutic value when used orally is due to the properties resulting from the chemical concentration, such as salicylates, carboxypeptidases (deactivates bradykinin) and magnesium lactate (dissolves with the conversion of histidine to histamine mast). -polysaccharide and sugar content play a role in hydrocolloid binding and also in osmotic bactericides).
- 8..Aloe gel also increases the removal of dead tissue due to its allantoin content, which stimulates the production of macrophages.

9. It is believed that only fresh gel is likely to play a role in the treatment of burns and wounds. It is also used to treat pain and itching, as well as to slow ulcers 20 keratosis

10. Aloe gel is used in skin cosmetics. due to its protective effect. anti-wrinkle properties. Aloe is also used externally for painful inflammation(5).

11. Itching and Blister

Aloe Vera also relieves itching and helps heal blisters. Aloe contains vitamin B1.

Vitamins B2, B6, B12 and C give the skin a soothing and pleasant feeling

12. Skin aging:

Aloe Vera triggers the synthesis of elastin and collagen. These proteins are important in preventing skin aging

13. Acne :Aloe Vera helps remove acne scars by acting as an immune booster and anti-inflammatory agent. Beauty products made with aloe vera can reduce the stiffness of acne.

14. Freshness:

It also consists of chemical ingredients that have the ability to save the skin when acne occurs Freshness Aloe Vera gives a feeling of freshness.

15. Sunburn:

It helps to increase the distribution of blood, which allows the exchange of oxygen between the cells and provides them with food Sunburns Aloe Vera.

is excellent for reducing the damage caused by sunburn. For this purpose, it is rubbed directly on the skin. In case of sunburn, you can use after-sun creams containing the fresh liquid of the plant, or Aloe vera .

16. softening:

There are so many aloe vera products on the market that you can use after showering to make your skin super soft. Aloe Vera gel, cream or emulsion applied to the face forms a delicious mask that helps protect the skin from dust and other natural elements that are harmful to the skin . 17. Pigmentation :

Melanin is the pigment responsible for the skin color of human skin. Hyperpigmentation is a condition where large amounts of melanin are synthesized. This is usually caused by overexposure of the skin to the sun. In response to the sun's UV rays, skin cells called melanocytes begin to synthesize melanin. This increased synthesis of melanin causes dark spots to form on the skin. Aloe vera has the ability to reduce pigmentation and dark spots on the face 18. Skin rashes: Ointments containing Aloe vera are useful in skin rashes. Aloe Vera gels have proven to be the best remedy for burns and wounds. In fact, aloe's cell regeneration, antibacterial and fungal properties make it useful in the treatment of skin rashes(6).

2] Almond oil:

Synonyms:Badam tail, Bitter Almond oil.

Biological Source:

It is a fixed oil obtained by expression of seeds of *Prunus amygdalus* (*Amygdalus communis* and/or *Prunus amygdalus* var. *amara* (bitter almond) or mixture of both belonging to fam Rosaceae containing not less than 0.95% benzaldehyde.

Commercially, bitter almonds are used as source of almond oil.

Geographical Source:

It is native to Persia and Asia Minor. Commercially, almond plants are cultivated and oil is produced on large scale in Mediterranean countries such as Italy, France, Spain and North Africa. In India, it is cultivated in some part of Panjab and Kashmir(8).



Almond oil

Importance of almond oil:

Help digestion :

A digestive aid, almonds are a great source of fiber, says Bonnie Taub-Dix, a Blue Diamond registered dietitian and author of the book *Read It Before You Eat It: Taking You From the Eat It: Taking You from the Eat It. : Taking You by the author of Edelt*". Eating a handful of almonds or drinking a glass of almond milk can move your digestive tract and prevent bloating (here are some more foods that can directly move). Almonds can also promote healthy bacteria in your gut. It can help you digest food and even prevent getting sick.²

Moisturizes skin : if you have dry, scaly skin, a lotion or cream containing almonds can be the solution. "Almonds provide healthy fats that help keep your skin supple," says Bonnie. Almonds also support glowing skin by providing vitamins A and E to your body. Make your own almond face oil by filling a small glass bottle of almond oil and then add up to five drops of an essential oil of your choice. It lasts up to a year.

Protects you from heart disease - Are almonds good for your heart? I bet! Besides giving you glowing skin, the vitamin E in them can also help your heart. A study published in the *Journal of Nutrition* concluded that a diet rich in vitamin E is associated with a lower incidence of heart disease. Try eating a handful of almonds instead of making a heart-healthy salad for lunch.

Suppress Cravings : If you ever find yourself reaching for chocolate cake during your afternoon slump, keep sweets on your desk. Their salty crunch can reduce cravings, says Bonnie. And if you have a sweet tooth, make candied nuts right in the slow cooker.

Add shine to dull hair : If the dry winter air has left your hair brittle, use almond oil in your hair products. Its healthy fatty acids help strengthen hair and add texture. When you use hair products with almond oil, the oils are absorbed into the hair, leaving each strand strong and shiny. **Promote healthy cells :** Almonds are full of healthy fats and protein, but are also rich in antioxidants. These plant compounds can protect your cells from oxidation and premature aging. Enjoy a bowl of almonds and berries for an antioxidant-rich snack. Or skip the fruit and decadence with this Almond Bacon Cheese Crostini.

Low Cholesterol - Almonds are the best-lowering foods. Studies show that eating almonds can lower LDL or "bad" cholesterol levels. They're so quick and convenient, so you'll never have to rely on grocery stores for a snack. Throw a packet in your car and have easy snacks on the go.

Reduce the risk of diabetes - start your day with a breakfast cereal sprinkled with almonds. Research shows that eating almonds with cereal slows down the absorption of the carbohydrates in the cereal, says Bonnie. The buffering

effect of the proteins and fats contained in it has been proven to reduce the risk of developing high blood sugar and diabetes

Low blood pressure - Almonds are high in magnesium, which can help lower blood pressure. Studies show that low levels of magnesium in the blood can contribute to high blood pressure. Adding magnesium-rich foods like almonds can protect you.

Almonds are high in vitamin E - Vitamin E is the fat-soluble sister of antioxidants, helps protect your cells from free radicals. An ounce of almonds, which are very rich in vitamins, is great to eat every day because it can help reduce the risk of cancer, heart disease and the risk of Alzheimer's disease. Almonds are rich in plant-based protein, so you'll be full and satiated all afternoon. According to Bonnie, they are also a healthy source of calcium, vitamin E, phosphorus and many other nutrients. 2 Almonds are antioxidants .

Almonds can help control blood sugar - Almonds are high in fiber, healthy fats and protein, and are low in carbohydrates. They are also high in magnesium, a mineral that is involved in about 300 body processes and helps control blood sugar.

Almonds do wonders for your blood pressure levels - Almonds are high in magnesium which not only helps control blood sugar but also keeps your blood pressure under control. This means, lack of magnesium can put a person at risk of heart attack or kidney failure .

Almonds lower calories - As mentioned earlier, almonds are low in carbohydrates, but they don't compromise on their high protein and fiber. The latter tends to increase the feeling of satiety, which makes you eat fewer calories. So, if you're somebody who loves snacking, a great option is to munch on almonds. They're very good for you, while they will fill you up sooner than you realize, reducing the hunger for other food

Almonds Are Nutrient-Rich - You heard it right! Native to the Middle East, almonds are wonder seeds of the *Prunus dulcis* (almond tree). What you commonly see in stores are almonds that have their shell removed, revealing the edible and juicy nut inside. They are commonly either sold raw or in a roasted form. They are also used to make almond oil, flour, milk, butter and paste, which is quite commonly known as marzipan. You'll be surprised to know the nutrient profile they contain. They contain moderate amounts of vitamin B2 (riboflavin), copper, and phosphorus. An ounce (28 grams) of almonds contains protein, magnesium, vitamin E, fat, manganese, fiber, and carbohydrates (9).

Sesame oil:

sesame oil.

Biological source:

Pedaliaceae family *Sesamum indicum* It is a fatty oil obtained from Synonym:

Merka oil, Gingelly oil, Benne oil are synonyms of the seeds

Geographical source:

The plant is native to India and is cultivated in the Caribbean, China, Japan, Africa and the United States. Production Method Sesame seeds contain about 50 percent solid oil. Only white-seeded varieties are used for pharmaceutical purposes. The seeds are very small in size. They are cleaned, washed if necessary, sun-dried and pressed to obtain oil at room temperature. After that, the temperature and pressure increase. The oil is purified by the refining method and used (7).



Sesame oil

Important of sesame oil:

1. Medicinal Uses Sesame oil has been used as a healing oil for thousands of years
2. As nasal drops that are sniffed back into the sinuses, sesame oil has been used to treat chronic sinusitis
3. Massaging the scalp controls dryness and flaking, which helps prevent hair loss.
4. Regular hot oil massage increases penetration, which improves circulation in the scalp and promotes hair growth
5. Stress is considered a major factor that causes hair loss and sesame oil's cooling properties help relieve stress when massaged into the scalp and neck and shoulders.
6. Rich sesame oil protects the hair from harmful harmful effects.
7. the UV radiation of the sun, which becomes a natural sun protection for the hair.
8. It not only protects the hair from the sun, but also prevents the harmful effects of pollution from sticking to the hair
9. Historically, people used sesame oil for many different purposes, from making massage oil, lotions, nasal drops, enemas is quickly absorbed and penetrates the bone marrow through the tissues keeps the skin elastic and soft(9).

Rosewater:

Rose water Rose water is especially moisturizing when combined with other moisturizing ingredients such as ceramides or glycerin.

"They help hydrate the skin, protect the skin barrier and prevent further water loss from the skin," Allawh says.

However, it should not replace your current moisturizer. Rose water has been used as a beauty product for thousands of years, so it's no surprise that it can improve skin and reduce skin redness.

Antibacterial properties can help reduce acne.

Anti-inflammatory properties can reduce skin redness and swelling.

Rose water maintains the skin's natural pH balance.

Chemically formulated soaps and cleansers disrupt the pH balance of our skin, making it susceptible to bacteria that cause various skin conditions such as rashes and acne. This property helps rose water restore the skin's normal pH level.



Rosewater

Turmeric: Turmeric (*Curcuma longa*, Zingiberaceae) is best known as a spice used primarily in Asian cuisine, particularly curry, and in prepared mustard. It is also used in some traditional Indian communities as a topical burn treatment. Curcumin (Diferuloylmethane), the key biologically active component of turmeric, has shown great potency against acute inflammation, and has been shown to exhibit significant wound healing and antioxidant properties. The paste of turmeric powder has been used as antiseptic and for skin nourishment. Curcumin the active compound of turmeric, is a polyphenol used in skin care preparations.



Turmeric

Turmeric [*Curcuma longa*, Zingiberaceae] is best known as a spice used particularly in curry and in prepared mustard. It is also used in some traditional Indian communities as a topical burn treatment. Curcumin (Diferuloylmethane), the key biologically active component of turmeric, has shown great potency against acute inflammation, and has been shown to exhibit significant wound healing and antioxidant properties. The paste of turmeric powder has been used as antiseptic and for skin nourishment. Curcumin, the active compound of turmeric, is a polyphenol used in skin care preparations. Turmeric, a spice that has long been recognized for its medicinal properties, has received interest from both the medical/scientific world and from culinary enthusiasts, as it is the major source of the polyphenol curcumin. It aids in the management of oxidative and inflammatory conditions, metabolic syndrome, arthritis, anxiety, and hyperlipidemia. It may also help in the management of exercise-induced inflammation and muscle soreness, thus enhancing recovery and performance in active people. In addition, a relatively low dose of the complex can provide health benefits for people that do not have diagnosed health conditions. Most of these benefits can be attributed to its antioxidant and anti-inflammatory effects. Ingesting curcumin by itself does not lead to the associated health benefits due to its poor bioavailability, which appears to be primarily due to poor absorption, rapid metabolism, and rapid elimination. There are several components that can increase bioavailability. For example, piperine is the major active component of black pepper and, when combined in a complex with curcumin, has been shown to increase bioavailability by 2000%. Curcumin combined with enhancing agents provides multiple health benefits. The purpose of this review is to provide a brief overview of the plethora of research regarding the health benefits of curcumin(10).

Formulation Table:

Sr.no	Ingredient	Quantity	Use
1	Steric Acid	5.2ml	Lubricating ,emollient
2	Cetyl Alcohol	0.8ml	Moisturising agent
3	Almond Oil	3ml	Hydrate the skin, Brightning the skin
	Seasame Oil	3ml	Anti tanning agent
5	Turmeric	3ml	Anti inflammentry , Colouring agent
6	Alo Vera gel	3ml	Fight skin aging , Moisturizing the skin
7	Glycerol	2ml	Smoothness

8	Methyl Paraben	q.s	Preservative, Antibacterial agent
9	Water	q.s	As a vehicle

Method of preparation:

Heat sterc acid and cetyl alcohol in borosilicate glass at 75 degree and maintain this heating temperature(oil phase). In another beaker, dissolve the , methylparaben, in distilled water and heat the beaker to 75 degree to dissolve the and methylparaben and make a clear solution. Slowly add this water phase to the heated oil phase. Add a small amount of Alo vera gel , turmeric, Almond oil, Sesame oil until a smooth cream is formed and add a few drops of rose water for aroma(11).

Evaluation parameter:

Sr.no	Parameter	Result
1	Colour	Faint yellow
2	Odour	Characteristics
3	State	Semisolid
4	Consistency	smooth
5	PH	6.7
6	Non irritancy test	Non irritant
7	Phase seperation	No
8	Anti microbial growth	No
9	Spredability	Easily spread
10	washibility	Easily Washable
11	After feel	Emollient

Conclusion:

From the previous discussion, it can be concluded that by combining aloe vera, turmeric, green tea and amal extracts in different proportions, a multi-purpose effect such as skin whitening, anti-wrinkle, anti-aging and sun protection cream is achieved. because we knew that it is not possible to increase the therapeutic and cosmetic properties of a single plant extract but it may be possible to combine plant extracts to strengthen the extract in this regard. we mix aloe vera turmeric amal green tea extract strengthens and synergizes the cosmetic properties of the finished product compared to individual extracts. Further research is being done to tease out the scientific performance of the chosen dosage form. research shows that the composition of the base cream extract is more stable and this can cause a synergistic effect(2).

REFERENCE

- <https://www.medwinpublishers.com/OAJPR/formulation-and-evaluation-of-herbal-face-cream.pdf>
- <https://ijarsct.co.in/Paper7884.pdf>
- https://www.researchgate.net/publication/294732551_Formulation_and_Evaluation_of_Herbal_Fairness_Cream_Comprising_Hydroalcoholic_Extracts_of_Pleurotus_ostreatus_Glycyrrhiza_glabra_and_Camellia_sinensis
- <https://www.medwinpublishers.com/article-description.php?artId=12204>
- A book of pharmacognosy, C. K. Kokate, A. P. Purohit, S. B. Gokhale 56 edition, september 2019, Nirali prakashan, page No:-9.9-9.16
- https://www.researchgate.net/publication/358662530_Formulation_and_Evaluation_of_Herbal_Face_Cream
- A book of pharmacognosy, C. K. Kokate, A. P. Purohit, S. B. Gokhale 56 edition, september 2019, Nirali prakashan, page No:-11.38-11.40

8. A book of pharmacognosy, C. K. Kokate, A. P. Purohit, S. B. Gokhale 56 edition, september2019,Nirali prakashan, page No:-11.42-11.43

9. <https://www.wjpls.org/download/article/21112017/1511954604.pdf>

10. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5664031/>

11. <https://www.jetir.org/papers/JETIR2206A10.pdf>

12. <https://ijcrt.org/papers/IJCRT2306141.pdf>

