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## Natural source play an important role in the field of cosmetics

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#### Abstract

Herbal cosmetics include the natural source and their parts which are being used as maquillage purpose. Herbal cosmetics are one of the oldest types of cosmetics in human history. It is very popular and widely practiced all over the world. Herbal cosmetic also known as "natural cosmetics". With the beginning of the civilization, mankind had the magnetic dip towards impressing others with their looks. In the present era, there were no fancy fairness creams or any cosmetic surgeries. The only thing they had was the knowledge of nature, compiled in the natural source. Avurvedic (natural) cosmetics not only beautified the skin but acted as the shield against any kind of external affects for the body. With the science of herbal, several herbs and floras were used to make natural cosmetics that really worked. Natural cosmetics also known as the herbal cosmetics have the same estimable assets in the modern era as well. There is a wide gamut of the herbal cosmetics that are manufactured and commonly used for daily purposes. Herbal cosmetics like herbal face wash, herbal conditioner, herbal soaps, herbal shampoo, and many more are highly acclaimed by the masses. The best thing of the herbal cosmetics is that it is purely made by the herbs and shrubs. The natural content in the herbs does not have any side effects on the human body, instead enrich the body with nutrients and other useful minerals. Herbal cosmetics are comprised of floras like henna/mehedi, sandal (Chandan), rose, Holud, neem, saffron (Kesar) and many more that is augmented with healthy nutrient sand all the other necessary components.

Keywords: Natural cosmetics, cosmetic surgeries, herbal conditioner, saffron

#### Introduction

Natural source of cosmetics, that's used from the ancient time. A huge number of cosmetic and toiletry formulations have been designed and developed based upon Bangladeshi and Indian Herbs recently. Other than traditionally documented applications, some modern trials have also been using the utility of Bangladeshi and Indian herbs in Personal Care products. Herbal Cosmetics, here in after referred as Products, are formulated, using various permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to provide defined cosmetic benefits only, shall be called as "Herbal Cosmetics" [2]. The history of the herbal cosmetics industry includes very dark chapters in European and Western countries from about six centuries back. Mixtures and pastes were then used to whiten the face, a practice which remained popular till over four hundred years later. The early mixtures that were used in Europe for this purpose were so potent that they often led to paralysis, strokes or death. In that era, the history of herbal cosmetics in the 1940s shows how the fashion or trend with respect to lipstick colors was changed annually, getting darker and closer to red every passing year. It was around this time that eyebrow shaping also became popular. Some of the pure herbs are extracted from the terrains of great Himalayas where numerous herbs are yet to be identified. With their unending health benefits, it is expected that Herbal extracts will soon revive the era of healthy mind and body1. In Bangladesh, Many herbal product companies try to supply effective cosmetics products launching to the market.

#### **Present Status**

In an estimate, the international market of medicinal plants related to trade stood at 60 billion US Dollar per year. The demand for medicinal plants based raw materials are growing at an approximate rate of 10-15% per year internationally. Medicinal plant sector has traditionally occupied an important position in the socio-cultural, spiritual and medicinal arena of rural and tribal lives of Bangladesh.

In recent years, the growing demand for herbal product has led to a quantum jumping in volume of plants materials trade within and across the country. Bangladesh there is no systematic cultivation process or conservation strategies about medicinal plants. The local people conserve traditional knowledge through their experience and practice, which is handed down orally without any documentation. This knowledge now under threat to extinction. This is a very alarming situation with regard to natural growth of medicinal plants in the wilderness in this country. In this scenario, the survey on "Traditional and industrial use and market Scenario of Medicinal plants in Bangladesh." has been conducted by the DEBTEC (Development of Biotechnology & Environmental Conservation Centre, Dhaka, Bangladesh) researchers at Chakbazar, Dhaka, Bangladesh [3]. We have found that there is worth of 11 million US dollars medicinal plant market in Bangladesh, which have been imported but not in the name of medicinal plants rather in the name of spices and other products. This research aimed at documenting the 'Present Status and Market Scenario of Medicinal Plants' in Bangladesh. Our research finding shows that 84.1% of the respondent use medicinal plants in health care. 18.3% of the villagers use Kabirazi in the disease in medium category.55.0% of our respondent's source of knowledge of using medicinal plant is family where 34.7% gained knowledge from neighbor. Only 14.3% of the respondents are involved with trading of medicinal plant. About 10.4% of the villagers are involved in cultivation, collection or business of medicinal plant. From the survey report it has been found that 46.6% industries are using above 60% of imported medicinal plants as their raw materials and 53.3% of the industries are using below 40%. The study revealed that 86.7% industries are importing Indian raw materials, 53.3% are importing the Pakistani one and very few of them are importing the raw materials from Nepal, Iran and Korea. According to the response of shop owners, the local raw materials of their products are mostly coming from 5 different areas of the country. Among those 90% are coming from Chittagong and again 76.6% from Tangail, 30% from Gazipur and another 30% from Khulna. In this scenario, appropriate steps must therefore be taken immediately in order to save this situation with regard to growth, conservation and supply of medicinal plants in the country. The best possible way of doing this is to bringing this more and more of these plants under planned cultivation. The cultivation of medicinal plants in Bangladesh will lead to the conservation and also protect the biodiversity. Ecological and biotic factors are suitable in Bangladesh for the cultivation of medicinal plants. We have been successful to sensitize the policy makers. In Bangladesh there is no facilities and skilled manpower for the processing of MPs. Our research is now aiming to develop processing unit and to train the garden owner for skilled manpower to value addition of MP, which will create the income generating women in rural areas.

#### Herbalism

According to the World Health Organization (WHO), herbalism is the use of crude plant material such as leaves, flowers, fruit, seed, stems, wood, bark, roots, rhizomes or other plant parts, which may be entire, fragmented or powdered. The term herbalism refers to the long historical use of these medicines to support the healing function of the body. Because of the long tradition of using botanicals to

promote health, the use of herbs is well established and widely acknowledged to be safe and effective.

WHO also recognizes that Traditional Medicine encompasses health practices, approaches, knowledge and beliefs that rely on plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being. Traditional Medicine modalities include Traditional Western Herbalism, Native American Medicine, Ayurveda, and Traditional Chinese Medicine as well as the traditional or folk medicine of other indigenous groups.

In addition to herbs and foods, herbalists frequently use other natural approaches to wellness including sunshine, detoxification practices, exercise, lifestyle changes, fresh air, hydration and hands on healing. While practitioners such as naturopaths may also employ these tools in their work with clients, when it comes to the nuances of recommending herbs, herbalists generally receive much more stringent and in-depth training than is received by traditional naturopaths or naturopathic physicians. In other words, herbalists are specialist in herbs but their techniques are not restricted to herbal use only.

At present demand of herbal products are rising worldwide. Herbs are generally defined as non-woody plants, which die after blooming. This definition has been expanded to any of the plants of which part or whole can be used in medicinal treatments, culinary preparations (as seasonings), nutritional supplementation, or used as a coloring or cosmetic agent. Fresh herbals and medicinal plants can be acquired by gathering them in wild conditions, growing them in your own personal garden, or buying them from other gardeners and health food stores from the germ theory of disease and the advent of antibiotics to combat various infections; it appeared as if infectious diseases were a thing of the past. With the realization that chemical medicines are not always "magic bullets" and may carry serious side effects, herbalism and ancient medicines are making a comeback. Our challenge now is to ensure that valued botanicals should remain abundant for future generations, prepared by steeping in boiling water to be drunk as a tea, they are known as an infusion. If these dried herbs get simmered in hot water, they are called as decoction. If gets incorporated in with other ingredients and made into cream, they are viewed as an herbal ointment. Sometimes used an Herbal compress where piece of cloth is soaked in an infusion or decoction and is wrapped and applied externally. If herbs are used to cleanse and heal externally, they are called herbal wash. Herbal infusions and decoctions can also be used as herbal bath for relaxation and healing. Always follow the recommended dosages on your preparations and recipes because over-use of herbs can defeat the purpose for which you are using them. Some of the most beneficial herbs can prove to be toxic if over used [4].

#### **Herbs for cosmetics**

There are many herbs that are used as cosmetics from ancient time to present time globally. Some of used in internally and some of externally. Amla (Embilica officinalis), Brahmi (Bacopa Monnoria), Shikaka (Acasia\_Cancina), Neem (Azadirachta Indica), Reetha Powder (Soap nut), Tulsi (Ocimum sanctum), Aloe Vera, Multani Mitts (Fullers Earth), Calendula, Lavender, Coconut oil, Sunflower oil, Golden Root, Carrot, Ginkgo,

Henna, Green Tea, Turmeric, Almond oil, Rose oil, Eucalyptus Oil, Citronella oil etc. are used worldwide as herbal or natural cosmetics.

#### **Dry Skin Treatment**

#### Aloe Vera

With anti-inflammatory and cooling properties, Aloe vera gel is the perfect remedy for sunburned skin. It provides a protective layer to the skin which helps retain moisture. Aloe is also rich in antioxidants and minerals which can help speed healing.

For a moisturizer that doesn't leave a greasy film on your face, look no further than Aloe Vera. It softens the skin without clogging pores. Aloe vera gel can also be used as an aftershave treatment as it will both hydrate the skin and help heal razor burn and small nicks.

Research has shown that Aloe Vera extract is an effective natural substance for improving skin hydration – making it a useful ingredient in cosmetic formulations and as a treatment for dry skin.

As it is rich in vitamins C and E and beta carotene (a precursor to vitamin A), Aloe may have some anti-ageing qualities. Its anti-inflammatory and antimicrobial properties, and its ability to lighten blemishes, also help it take years off your face. Furthermore, Aloe Vera can be taken in supplement form to fight aging, with some research finding that it increases the body's production of collagen and improves skin elasticity *in just 90 days*.

Those with acne may want to try Aloe Vera's gentle cleansing and antimicrobial properties to treat their pimples. This healing gel works on several levels.

Its antibacterial, antiseptic and anti-inflammatory properties protect the skin from bacteria and other pathogens which lead to infection and inflammation. It contains substances – gibberellins and polysaccharides – that stimulate the growth of new cells, while glycoproteins reduce the inflammation and redness.

As an astringent, Aloe Vera reduces pore size, which helps keep out excess sebum, dirt, and microbes.

#### Coconut oil

Coconut oil comes from the fruit or seed of the coconut palm tree *Cocos nucifera*, family Arecaceae. He melting point of coconut oil is 24 to 25 °C (75-76 °F) and thus it can be used easily in both liquid or solid forms and is often used in cooking and baking. Coconut oil is excellent as a skin moisturizer and softener <sup>[5]</sup>. A study shows that extra virgin coconut oil is effective and safe when used as a moisturizer, with absence of adverse reactions. A study found that coconut oil helped prevent protein loss from the wet combing of hair when used for fourteen hours <sup>[6]</sup>.

#### Sunflower oil

It is the non-volatile oil expressed from sunflower seeds obtained from *Helianthus annuus*, family Asteraceae. Sunflower oil contains lecithin, tocopherols, carotenoids and waxes. In cosmetics, it has smoothing properties and is considered non comedogenic <sup>[5]</sup>.

### **Anti-aging treatment Golden Root**

Rhodiola rosea (Roseroot, Aaron's rod), is a plant in the

Crassulaceae family that grows in cold regions of the world. The *Rhodiola* root has long been used in the traditional medical systems in Europe and Asia to increase an organism's resistance to physicalstress <sup>[7]</sup>, currently; it is widely thought to have antioxidative properties <sup>[8]</sup>.

#### Carrot

It is obtained from the plant *Daucus carota* belonging to family Apiaceae. It is a valuable herb since ages as it is rich natural source of Vitamin A along with other essential vitamins. Carrot seed oil is indicated for anti-aging, revitalizing and rejuvenating. As it promotes the formation of new cells and helps in reducing wrinkles. It acts as Natural toner and rejuvenator for the skin [9].

#### Ginkgo

Ginkgo comes from the ginkgo tree, *Ginkgo biloba* belongs to family Ginkgoaceae, which grows to a huge size. It is best known, as a circulatory tonic, in particular for strengthening the tiny little capillaries to all the organs, but especially to the brain. The capillaries become more flexible and as a result more oxygen is delivered to the brain and eyes (To protect against degenerative eye diseases like macular degeneration), so important as we age. Ginkgo also protects the nervous system and fights oxidation.

#### **Dandruff Treatment**

Ayurved has numerous natural medications wherein the most common herbs include Neem, Kapoor (naphthalene), and Henna, Hirda, Behada, and Amalaki, Magic nut, Bringaraj, Rosary Pea, Sweet Flag, Cashmere tree and Mandor.

#### Henna

Henna comes from the plant, *Lawsonia inermis* family Lythraceae, which contain a dye molecule called Lawsone, which when processed becomes Henna powder. Henna has a natural affinity with the proteins in our hair, making it able to "stain" the colour onto the hair shaft [10].

#### Neem

The herb, *Azadirachta indica*, family Meliaceae has been found to have the properties of a Blood purifier, beauty enhancer. It is used for a number of medicinal purposes. Some areas where it can be uses in the treatment of common cosmetic problems are skin cleanser [11].

#### Skin Protection Green Tea

Green tea is tea made solely with the leaves of *Camellia sinensis belonging* to family Theaceae. Whether applied topically or consumed as a beverage or dietary supplement, green tea is a premiere skin protectant. It protects against direct damage to the cell and moderates inflammation, according to research from the Department of Dermatology, Columbia University, New York. Studies suggest that the catechins in green tea are some 20 times stronger in their antioxidant powers than even vitamin E. Men, women and children need to position this super shield on their side against the ravaging effects of the sun [12].

Table 1: Herbal plant for Skin car

Latin name	Common name	Part used	Uses	
Acorus calamus	Sweet flag	Rhizome	Aromatic, Dusting powders, Skin lotions	
Allium sativum	Garlic	Bulb	Promotes skin healing, Antibacterial	
Aloe vera	Aloe	Leaf	Moisturizer, Sun screen, Emollient	
Alpinia galanga	Galanga	Rhizome	Aromatic, Dusting powders	
Avena sativa	Oat	Fruit	Moisturizer, Skin tonic	
Azadirachta indica	Neem	Leaf	Antiseptic, Reduce dark spots, Antibacterial	
Echinacea purpurea	Echinacea	roots, stem, and leaves	Skin regeneration	
Centella asiatica	Gotu kola	Plant	Wound healing, Reduce	
Symphytum officinale	Comfrey	leaves	cell regeneration, stimulates the growth of new cells, rejuvenate the skin	
Crocus sativus	Kesar	Flowering top	Skin cleansing lotion	

#### Calendula

Calendula, pot marigold, is a genus of about 12–20 species of annual or perennial herbacessential oilsus plants in the daisy family Asteraceae. Calendula in suspension or in tincture is used topically to treat acne, reducing inflammation, controlling bleeding and soothing irritated tissue [13]. There is "limited evidence" that calendula cream or ointment is effective in treating radiation dermatitis [14, 15]. In a randomized study of 254 radiation patients, topical application of 4% calendula ointment resulted in far fewer occurrences of Grade 2 or higher dermatitis than occurred in the group using trolamine. Calendula users also experienced less radiation-induced pain and fewer breaks in treatment [16]

#### Turmeric

Turmeric, Curcuma *longa* is a rhizomatous herbacessential oilsus perennial plant of the ginger family Zingiberaceae Turmeric is used in many celebrations of Hindus. Especially in Hindu wedding brides would rub with turmeric on their bodies for glowing look. New born babies also rubbed with turmeric on their forehead for good luck. Traditionally women rub turmeric on their cheeks to produce a natural

golden glow.

#### Hair Care Amla

Amla is obtained from the plant *Emblica Officinalis*, Family Euphorbiaceae. Amla is rich in vitamin C, tannins and minerals such as phosphorus, iron and calcium which provides nutrition to hair and also causes darkening of hair [17]. Hibiscus consists of calcium, phosphorus, iron, vitamin B1, riboflavin, niacin and vitamin C, used to stimulate thicker hair growth and prevents premature graying of hair [18].

#### Almond oil

The almond oil is obtained from *Prunus dulcis*. The almond oil basically contains about 78% of this fat. This oil contains very small amounts of super-unsaturated Omega-3 essential fatty acids.

It proves to be very nourishing, and softens and strengthens the hair. The almond oil also proves to be a very good cleansing agent. Almond oil has been used for many centuries, even before it's spread as a commercial agroproduct.

Table 2: Herbal plants used for Hair care

Latin name	Common name	Part used	Uses
Aloe vera	Aloe	Leaf	Moisturizer, Shampoos
Bacopa monneri	Brahmi	Entire herb	Hair growth, Good for sleep, Shampoos
Arctium lappa	Burdock root	Roots	Promots hair growth.
Cedrus dessential oilsdara	Dessential oilsdar	Wood	Soaps, Shampoos
Centella asiatica	Gotu kola	Plant	Hair care, Darkening of hair, Hair oil
Citrus aurantium	Orange	Peel	Soaps, Shampoos
Citrus limon	Lemon	Peel	Prevents hair loss
Eclipta alba	Bhringraj	Plant	Promoting hair growth, Shampoos, Hair oil
Acacia Concinna	Shikakai	pods	promots hair growth and preventing dandruff

#### **Essential Oils**

Essential oils are natural fragrances extracted from virtually every part of a plant. Essential oils are volatile and liquid aroma compounds from natural sources, usually plants. Essential oils are not oils in a strict sense, but often share with oils a poor solubility in water. Essential oils contain mainly volatiles as terpenoids, benzenoids, fatty acid derivatives and alcohols. The FDA and other authorities recognize essential oils generally as safe. Although essential oils are widely used in cosmetics their actual mode of action is not fully understood. The uses of essential oils are determined by their chemical, physical, and sensory properties, which differ greatly from oil to oil. Each of the individual chemical compounds that can be found in oil contributes to the overall character. Essential oils can be used in several ways for cosmetic purpose like Inhalation,

Baths, Massage, Compresses, Steam treatments, Room Fragrance etc  $^{[19]}$ .

#### Most often essential oils are used as

- Co-preservative: many essential oils have antibacterial activity and are added as supportive agents to synthetic preservatives.
- Fragrance: perfumery is the main use of essential oils in cosmetics although synthetic
  - fragrances are more stable and have better longevity.
- Hair care: essential oils are used as conditioning
- Anti-dandruff & permanent waving agents.
- Skin care: essential oils are the ideal to topical active ingredients for any skin care product since they can penetrate the skin and bind the

membranes of skin cells. Essential oils can thus have sustained effects in the skin.

#### Rose oil

The well-known essential oil is probably rose oil, produced from the petals of *Rosa damascena* and *Rosa centifolia*, family Rosaceae. Steam-distilled rose oil is known as "rose otto" while the solvent extracted product is known as "rose absolute". It is used more commonly in perfumery. The key flavor compounds that contribute to the distinctive scent of rose oil are beta-damascenone, beta-damascone, beta-ionone, and oxide.

#### **Eucalyptus Oil**

Eucalyptus oil is the generic name for distilled oil from the leaf of *Eucalyptus*, a genus of the plant family Myrtaceae. Eucalyptus oil can help to get rid of dandruff, which in turn can help to promote healthy growth of hair. Just mix about 9 to 10 drops of eucalyptus oil with shampoo and then gently massages scalp for a few minutes, after which rinse it off with water. Massaging scalp with eucalyptus oil can stimulate blood circulation and thereby, making hair healthy and beautiful [20].

#### Citronella oil

It is one of the essential oils obtained from the leaves and stems of different species of *Cymbopogon* family Cardiopteridaceae. The crisp, rich citrus or lemon like aroma of this oil drives away body odour and is used deodorants and body sprays, although in very small quantities, since it heavy doses it may give skin irritations. It can also be mixed with the bathing water to have a refreshing, body odour ending bath. Other essential oils which are used in cosmetics include anise oil, coriander oil, grapefruit oil, jasmine oil, palma rose oil, sandalwood oil.

#### Antioxidants

Antioxidants, either exogenous or endogenous, whether synthetic or natural, can be effective in preventing free radical formation by scavenging them or promoting their decomposition and suppressing such disorders [21-24]. Currently, there is a growing interest toward natural antioxidants of herbal resources [25-27]. Epidemiological and in vitro studies on medicinal plants and vegetables strongly supported this idea that plant constituents with antioxidant activity are capable of exerting protective effects against oxidative stress in biological systems [28-31]. Free radical formation is controlled naturally by various beneficial compounds known as antioxidants. In addition to fruits and vegetables, herbs of no particular nutritional value can also constitute an important source of antioxidants [32]. The leaves from black and green tea (Camellia sinensis), long used amongst western and Asian populations, respectively, constitute an important source of potentially healthprotecting antioxidants [33, 34] and world-wide represent the most popular form of daily herb consumption.

#### **Tamarind**

Tamarind or *Tamarindus indica*, family Fabaceae, is widely growth in tropical regions and has long been supplied as an *important* nutrition source and traditional medications. Tamarind seed has activity of radical scavenging <sup>[35]</sup>, lipid peroxidation reducing <sup>[36]</sup> and anti-microbial activitie <sup>[37]</sup>. Its antioxidant activity is appropriate for anti-wrinkle

cosmetics.

#### Vitamin C

It prevents free radical damage due to its property of donating free radicals. It is beneficial in boosting immune system. The main source of Vitamin-C is carrots, peaches, sweet potatoes, oranges, broccolis, etc [38].

#### Vitamin E

Both plants and animals serve as a source of vitamin E. It has been found beneficial against certain types of cancer & cardiac problems. It is known as 'scavenger of free radicals'. Vitamin E is mainly present in nuts, whole cereal grains, almonds, vegetable oils etc.

#### Conclusion

The knowledge of medicinal plants used by the people of seems to be well known to its culture and tradition. In the present study we identified many plants used by the people to cure dermatological disorders and as cosmetics. Some of the plants were found to have dual use, both as curative and cosmetic. Herbal cosmetics are in existence from when the men started to use the cosmetic products. So they are oldest products used by mankinds. Some common cosmetics include creams, face packs, scrubs, hair oils, hair colors, shampoos, hair conditioners, blush-on or rouge as it is sometimes known, eyeliners, mascaras, foundations and eye shadow, perfumes and fragrance, soaps, etc. The formulation of all these cosmetic products includes addition of various natural additives like oils, waxes, natural color, natural fragrances and parts of plants like leaves, flowers etc by specific formulation methods. Further extensive ethnobotanical and ethanopharmacological study may lead to the discovery of plant sand compounds for skin care and cure.

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