



A REVIEW ON HERBAL MEDICINE: CURRENT SCENARIO

Rupali Yevale^{*}, Nilofar Khan, Pravin Jagtap and Dr. Mohan Kale

K.G. Rahul Dharkar College of Pharmacy and Research Institute, Karjat. (M. S.) India.

***Author for Correspondence: Rupali Yevale**

K.G. Rahul Dharkar College of Pharmacy and Research Institute, Karjat. (M. S.) India.

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ABSTRACT

The history of medicine is a fascinating story of the transition from ancient healing techniques to brilliant scientific and technological advances. We have gone from using medicine men and plant-based remedies to creating pharmaceutical drugs and sophisticated surgical procedures. Herbal medicines make up a significant constituent of the tendency toward alternative medicine. Herbal medicine is becoming ever more popular in today's world as people seek out natural remedies. Herbal medicines have been used since the dawn of civilization to maintain health and to treat various diseases. To compete with the growing pharmaceutical market, there is an importance to use and scientifically authenticate more medicinally useful herbal products. With the increased use of herbal products, the future worldwide labeling practice should adequately address quality aspects. Medicinal herbs as potential source of therapeutics aids has attained a significant role in health care system all over the world for human beings not only in the diseased condition but also as potential material for maintaining proper health.

KEYWORDS: Herbal medicines, Natural products, Applications, Patent herbal composition.

INTRODUCTION

The history of medicine is a fascinating story of the transition from ancient healing techniques to brilliant scientific and technological advances. We have gone from using medicine men and plant-based remedies to creating pharmaceutical drugs and sophisticated surgical procedures.

For thousands of year's natural products have played a very important role in health care and prevention of diseases. The ancient civilizations of the Chinese, Indians and North Africans provide written evidence for the use of natural sources for curing various diseases.^[1] According to recent studies conducted by the World Health Organization (WHO), about 80% of the world's population relies on traditional medicine.^[2] About 121 drugs prescribed in USA today come from natural sources, 90 of which come either directly or indirectly from plant sources.^[3] Forty-seven percent of the anticancer drugs in the market come from natural products or natural product mimics.^[4] Herbal drugs referred as plants materials or herbalism, involves the use of whole plants or parts of plants, to treat injuries or illness.^[5] Herbal drugs are use of therapeutic herbs to prevent and treat diseases and ailments or to support health and healing.^[6]

A large number of cosmetic and toiletry formulations have been developed based on Indian Herbs recently. Apart from traditionally documented applications, some

modern trials have also established the utility of Indian herbs in Personal Care products. Herbal Cosmetics, 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". The demand of herbal medicines is increasing rapidly due to their lack of side effects.^[7]

HISTORY OF USE OF TRADITIONAL HERBAL MEDICINE

By definition, 'traditional' use of herbal medicines implies substantial historical use, and this is certainly true for many products that are available as 'traditional herbal medicines'. In many developing countries, a large proportion of the population relies on traditional practitioners and their armamentarium of medicinal plants in order to meet health care needs. Methods of folk healing throughout the world commonly used herbs as part of their tradition. Some of these traditions are briefly described below, providing some examples of the array of important healing practices around the world that used herbs for this purpose.

a) Traditional Chinese medicine

Traditional Chinese medicine has been used by Chinese people from ancient times. Although animal and mineral materials have been used, the primary source of remedies is botanical. Of the more than 12000 items used by traditional healers, about 500 are in common use (Li,

2000). Botanical products are used only after some kind of processing, which may include, for example, stir-frying or soaking in vinegar or wine. In clinical practice, traditional diagnosis may be followed by the prescription of a complex and often individualized remedy.

b) Japanese traditional medicine

Many herbal remedies found their way from China into the Japanese systems of traditional healing. Herbs native to Japan were classified in the first pharmacopoeia of Japanese traditional medicine in the ninth century (Saito, 2000).

c) Indian traditional medicine

Ayurveda is a medical system primarily practised in India that has been known for nearly 5000 years. It includes diet and herbal remedies, while emphasizing the body, mind and spirit in disease prevention and treatment (Morgan, 2002).

INDIAN HERBAL TRADE IN WORLD SCENARIO

The utilization of herbal drugs is on the flow and the market is growing step by step.^[8] The annual turnover of the Indian herbal medicinal industry is about Rs. 2,300 crore as against the pharmaceutical industry's turnover of Rs. 14,500 crores with a growth rate of 15 percent.^[9]

Advantages of Herbal Drugs

- Low/Minimum cost
- Potency and efficiency
- Enhanced tolerance
- More protection
- Fewer side-effects
- Complete accessibility
- Recyclable

Disadvantages of Herbal Drugs

- Not able to cure rapid sickness and accidents
- Risk with self dosing
- Complexity in standardizations.

Usage and Preparation of Herbal Drugs

The use of herbal drugs in the correct way provides effectual and safe treatment for many ailments. The efficiency of the herbal drugs is typically subjective to the patient.^[10] The strength of the herbal drugs varies based on the genetic distinction, growing conditions, timing and method of harvesting, revelation of the herbs to air, light and dampness, and type of conservation of the herbs. Some of the plants that make up herbal drugs

are cultured and processed in the country and others are imported from around the world. Raw materials for herbal drugs may be derived from carefully cultivated plants or collected in the wild.^[11] Herbal drugs are accessible in several forms and often require preparation before their use. They can be normally purchased in mass form as dried plants, plant parts or insecurely packed for herbal teas and decoctions. Decoctions are made by boiling the herb in water, then straining out of the plant material. More intense forms of herbal drugs are available in the form of hydro alcoholic tinctures and fluid extracts. Methods of preparation may differ because of the nature of the plants active chemical constituent.^[12]

PRESENT STATUS

Herbalists today, believe to help people build their good health with the help of natural sources. Herbs are considered to be food rather than medicine because they're complete, all-natural and pure, as nature intended. When herbs are taken, the body starts to get cleansed, it gets purifying itself. Unlike chemically synthesized, highly concentrated drugs that may produce many side effects, herbs can effectively realign the body's defenses. Herbs do not produce instant cures, but rather offer a way to put the body in propertune with nature. For thousands of years, humans have used herbs. Herbs have been used in the following ways - In cooking for flavoring foods, as perfumes, as disinfectants, to protect us against germs, as medicines to heal when we are sick.^[13]

RECENT PATENT GRANTED BY INDIAN PATENT ON HERBAL FORMULATION

A majority of the herbal patents applications and grants in India are with individual inventors or assigned R&Ds. Claim analysis indicates that these patents include novel multi-herb compositions with synergistic action. Indian research organizations are more active than companies in filing for patents. CSIR has maximum numbers of applications not only in India but also in the US and EU but most of the herbal patent is granted in India. Patents by research organizations and herbal companies are on development of new processes for active compound isolation and standardization of such components in addition to new compositions for therapeutic use. Pharmaceutical companies such as Ranbaxy, Lupin and Panacea Biotec are increasingly patenting on herbal drugs. There is increased patenting activity related to diabetes, cancer, cardiovascular diseases, asthma and arthritis in India and abroad.

Table.1- The following list of patent granted by Indian patent office on herbal composition from 2007- 2013.

Sr No	Patent Application No.	Patent No.	Date of Grant	Title	Applicant
1.	487/MAS/2001	204225	12-02-2007	A NOVEL HERBAL DRUG COMPOSITION AND PROCESS PREPARATION	DR. POTHURAJU SURYA VENKATA SATYANARAYANA
2.	486/MAS/2001	204994	13-03-2007	AVALMIC-I HERBAL BASED DRUG CAPSULE	Dr. POTURAJU SURYA VENKATA

				PREPARATION	SATYANARAYANA
3.	668/BOM/1997s	208437	27-07-2007	HERBAL AYURVEDIC COMPOSITION FOR TREATMENT OF PSORIASIS	MAHENDRA KUMAR JHUNJHUNWALA
4.	667/BOM/1997	208438	27-07-2007	ORAL HERBAL AYURVEDIC COMPOSITION FOR TREATMENT OF PSORIASIS	MAHENDRA KUMAR JHUNJHUNWALA
5.	228/DEL/2003	208732	08-08-2007	WONDER HEALING AND VAT ROG HERBAL DRUG	DR. SHYAMJI TRIPATHI
6.	574/DEL/2001	209451	30-08-2007	HERBAL COMPOSITION FOR TREATMENT OF BONE METABELIC DISORDERS	DABUR RESEARCH FOUNDATION
7.	142/DEL/2004	209457	30-08-2007	A HERBAL COMPOSITION USEFUL FOR THE TREATMENT OF PILES.	YOGENDRA SINGH
8.	195/DEL/2004	209853	07-09-2007	A NOVEL DENTAL AND GUM CARE HERBAL COMPOSITION	YOGENDRA SINGH
9.	196/DEL/2004	209859	07-09-2007	A HERBAL COMPOSITION USEFUL FOR THE TREATMENT OF WHOOPING COUGH, REDUCING CHOLESTROL & BODY FAT	YOGENDRA SINGH
10.	460/CAL/2002	212137	20-11-2007	A HERBAL PHARMACEUTICAL PREPARATION FOR THE TREATMENT OF LEUCODERMA	DR. SWAPAN KUMAR CHATTERJEE
11.	18/DEL/2003	213005	19-12-2007	HERBAL COMPOSITION FOR TREATING DISORDERS ASSOCIATED WITH MENOPAUSE	SYEDA AAMENA NAAZ
12.	869/MUM/2004	213142	20-12-2007	A HERBAL COMPOSITION FOR THE TREATMENT OF DAMAGED AND FRACTURED BONE	AJAY BHAGWANDAS BAROT
13.	478/DEL/2000	213348	27-12-2007	A NOVEL HERBAL COMPOSITION FOR DIABETIC PATIENTS AND A PROCESS FOR PRODUCING THE SAME	DABUR RESEARCH FOUNDATION
14.	1333/MUM/2003	213402	01-01-2008	HERBAL PHARMACEUTICAL COMPOSITIONS IN JELLY FORMULATIONS	LYKA LABS LIMITED
15.	680/MUMNP/2003	214166	05-02-2008	HERBAL COMPOSITION FOR ANGINA PECTORIS, METHOD TO PREPARE SAME AND USES THEREOF	TIANJIN TASLY PHARMACEUTICAL CO.,LTD
16.	672/DEL/2003	214744	15-02-2008	HERBAL COMPOSITION	PRASAD VAIDYA BANKE

				FOR THE TREATMENT OF ANIMAL BITES ESPECIALLY SNAKE BITE AND EARLY STAGES OF HYDROPHOBIA, AND A PROCESS OF PREPARING THE SAME	
17.	1039/mum/2004	216577	17-03-2008	HERBAL COMPOSITION FOR ANGINA PECTORIS	TIANJIN TASLY PHARMACEUTICAL CO.,LTD
18.	475/DEL/2000	216784	19-03-2008	AN HERBAL THERAPEUTIC PRODUCT	INDIAN COUNCIL OF MEDICAL RESEARCH
19.	418/DEL/2002	217878	29-03-2008	A HERBAL OPHTHALMIC FORMULATION OF OCIMUM SANCTUM FOR DELAYING THE ONSET AND PROGRESSION OF CATARACT	ALL INDIA INSTITUTE OF MEDICAL SCIENCES
20.	731/KOL/2005	218675	09-04-2008	A HERBAL COMPOSITION FOR CONTROLLING BLOOD SUGAR LEVEL,AND PROCESS FOR PREPARING THE SAME	CHOUDHARY GIRISH PRASAD
21.	713/DEL/2002	220683	02-06-2008	A HERBAL FORMULATION FOR THE MANAGEMENT OF OSTEO-ARTHRITIS AND A PROCESS FOR THE PREPARATION THEREOF	RAVI PATODIA
22.	665/DEL/2002	220688	02-06-2008	A HERBAL COMPOSITION HAVING ANTISTRESS AND ADAPTOGENIC PROPERTIES AND A PROCESS FOR THE PREPARATION THEREOF	RAVI PATODIA
23.	664/DEL/2002	220749	04-06-2008	A HERBAL COMPOSITION FOR THE PREVENTION AND MANAGEMENT OF POTENTIAL DIABETES AND A PROCESS FOR THE PREPARATION THEREOF	RAVI PATODIA
24.	666/DEL/2002	220786	05-06-2008	A HERBAL FORMULATION FOR PREVENTION AND MANAGEMENT OF CORYZA AND A PROCESS THEREOF	RAVI PATODIA
25.	663/DEL/2002	220806	05-06-2008	A HERBAL PREPARATION AND A PROCESS FOR THE PREVENTION OF LIVER CIRRHOSIS OF VARYING ETIOLOGY	RAVI PATODIA
26.	997/CHE/2004	221311	20-06-2008	HERBAL ANT REPELLENT COMPOSITION	PSG COLLEGE OF PHARMACY
27.	1340/DEL/2003	221610	27-06-2008	NOVEL HERBAL COMPOSITION FOR THE TREATMENT OF GASTRIC ULCER	COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

28.	592/MUMNP/2004	221614	27-06-2008	A HERBAL INJECTION AND A METHOD TO PRODUCE THE SAME	MAOXIANG WANG
29.	515/MUM/2003	222821	25-08-2008	A PHARMACEUTICALLY HERBAL SEED EXTRACT WITH BROAD-SPECTRUM MEDICINAL APPLICATION	GOVIND MARUTI WAGLE
30.	1176/MUM/2006	222965	28-08-2008	HERBAL COMPOSITION FOR PREVENTING HAIRFALL & DANDRUFF AND PROCESS FOR PRODUCING THE SAME	SAXENA ASHISH KUMAR
31.	441/KOL/2005	223765	23-09-2008	A THERAPEUTIC HERBAL COMPOSITION EFFECTIVE AGAINST TUMOURS AND PROCESS FOR PREPARING THE SAME	SARKAR NEAMATULLAH
32.	1469/CHE/2005	224688	21-10-2008	ANTI-STRESS HERBAL FORMULATION AND PROCESS FOR THE PREPARATION THEREOF	VENKATESWARA AYURVEDA NILAYAM LIMITED
33.	00584/DELNP/2004	225350	11-11-2008	ANTI-COUGH, ANTI-TUSSIVE AND THROAT SOOTHING SYNERGISTIC HERBAL FORMULATION	COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH
34.	53/MUM/2007	225690	20/11/2008	A HERBAL COMPOSITION FOR TREATMENT OF ORAL SUB MUCOUS FIBROSIS(OSMF)	BAKSHI KANDARPKUMAR JANUBHAI
35.	03/DEL/2002	226231	12-12-2008	A SYNERGISTIC HERBAL COMPOSITION	DABUR RESEARCH FOUNDATION
36.	662/DEL/2002	226242	15-12-2008	A HERBAL PREPARATION AND A PROCESS FOR THE PREVENTION AND TREATMENT OF HYPERCHOLESTEROLEMIA AND HYPERTRIGLYCERDIEMIA	RAVI PATODIA
37.	816/MAS/1998	226999	31-12-2008	A HERBAL ANTIMICROBIAL DERMATOLOGICAL DRUG	NATURAL REMEDIES PVT. LTD
38.	146/MUM/2005	227476	09-01-2009	AN AYURVEDIC HERBAL HAIR OIL COMPOSITION AND PREPARATION THEREOFF	KEDARNATH MOHANLAL LOHE
39.	811/MUM/2006	227492	09-01-2009	HERBAL COMPOSITION FOR TREATMENT OF OLIGOSPERMIA AND TO INCREASE SPERMOTILITY	SHARAD PAWAR COLLEGE OF PHARMACY
40.	1062/DEL/2003	227532	13-01-2009	NOVEL BIOACTIVE FRACTIONS FROM A NOVEL HERBAL EXTRACT OF SALICORNIA SPECIES HAVING ANTITUBERCULAR	COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

41.	1831/MUM/2006	227558	13-01-2009	HERBAL COMPOSITION TO RELIEVE OXIDATIVE STRESS	CHOPDA, CHETAN ASHOK
42.	1348/CHE/2004	230242	25-02-2009	AN ANTI DIABETIC HERBAL FORMULATION AND THE PROCESS OF PREPARING THE SAME	RANGASAMY VEERAMANI
43.	838/DEL/2003	230753	27-02-2009	A HERBAL HYPOGLYCEMIC COMPOUND FOR CONTROLLING DIABETES MELLITUS	INDIAN COUNCIL OF MEDICAL RESEARCH
44.	699/MUM/2005	234048	01-05-2009	A NOVEL HERBAL PRODUCT FOR TREATING ABNORMAL CONDITIONS OF BONES AND A PROCESS FOR MAKING THE SAME	KARANDE
45.	2191/DEL/1996	234274	15-05-2009	AN ANTI-INFLAMMATORY, ANTIARTHRITIC AND A VASODILATOR HERBAL OIL FROM MOMORDICA CHARANTIA L. (BITTER GOURD)	DR. PUSHPA KHANNA
46.	158/MAS/2000	234888	19-06-2009	A HERBAL COMPOSITION HAVING ANTI ALLERGIC PROPERTIES AND A PROCESS FOR THE PREPARATION THEREOF	NATURAL REMEDIES PRIVATE LTD
47.	262/KOL/2006	235813	02-09-2009	A POTABLE HERBAL COMPOSITION AND VALUE ADDED PRODUCTS FROM BETEL LEAVES, AND PROCESS FOR PREPARING THE SAME	DATTA PROF., DR. SIDDHARTHA
48.	1261/DELNP/2005	236752	19-11-2009	NOVEL HERBAL COMPOSITION AS MEMORY ENHANCER IN ALZHEIMERS CONDITION	COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH
49.	923/MUM/2006	237191	09-12-2009	HERBAL COMPOSITION FOR TREATMENT OF PSORIASIS	BABULAL BHAWARLAL JAIN
50.	924/MUM/2006	237192	09-12-2009	HERBAL COMPOSITION FOR TREATMENT OF DIABETES	BABULAL BHAWARLAL JAIN
51.	222/CAL/1999	237569	29-12-2009	A HERBAL COMPOSITION FOR THE TREATMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE, BRONCHITIS AND RESPIRATORY DISORDERS	DALMIA CENTRE FOR BIOTECHNOLOGY
52.	377/DELNP/2004	238309	28-01-2010	NOVEL SYNERGISTIC HERBAL COMPOSITION AS BRAIN TONIC AND METHOD FOR	COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

				PREPARATION THEREOF	
53.	122/CHE/2004	239060	04-03-2010	A NOVEL SYNERGISTIC HERBAL FORMULATION FOR DIABETES CURE	LANSON BIO TECH PRIVATE LIMITED
54.	57/MUM/2005	239572	25-03-2010	HERBAL CONTRACEPTIVE FORMULATIONS	SINGH KAMALINDER KAUR
55.	2507/DEL/2004	248784	24-08-2011	DEVELOPMENT OF HERBAL NUTRITIOUS CHOCAEATE AND ITS PROCESSING	COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

PHARMACOVIGILANCE OF HERBAL DRUGS

Pharmacovigilance is the science and activities relating to the detection, assessment, understanding and prevention of adverse effects of drugs or any other possible drug-related problems. Recently, its concerns have been widened to include: herbals, traditional and complementary medicines, blood products, biological, medical devices and vaccines.^[14] The aims of pharmacovigilance is to protect patients from unnecessary harm by identifying previously unrecognized drug hazards, elucidating pre-disposing factors and quantifying risk in relation to benefits.^[15] The purpose of pharmacovigilance is to detect, assess and understand to prevent the adverse effects or any other possible drug-related problems, related to herbal, traditionally and complementary medicines.^[16]

STABILITY TESTING OF HERBAL DRUGS

The purpose of a stability testing is to provide proof on how the quality of the herbal products varies with the time under the influence of environmental factors such as temperature, light, oxygen, moisture, other ingredient or excipients in the dosage form, particle size of drug, microbial contamination, trace metal contamination, leaching from the container and to establish a recommended storage condition and shelf-life. Stability testing of herbal drugs is a challenging risk, because the entire herb or herbal product is regarded as the active matter, regardless of whether constituents with defined therapeutic activity are known.

VARIOUS APPLICATIONS OF HERBAL DRUGS

A) Herbal Cosmetics

Herbal Cosmetic products were once the sole domain of film personalities and stage actors. The use of cosmetics in those eras was restricted to the purpose of creating a dramatic effect. The hair care cosmetics which were an insignificant product until a few years back emerged as the most essential fashion accessory since the nineties.^[17] The hair colour market is dominated by cosmetic companies' mostly marketing chemical based colour. However, with the passage of time, women started using cosmetics to highlight their facial features as well. In India beetroot was used to redden the cheeks, while in Western countries, certain chemicals were used to darken the hair.^[18]

1) Herbal Skin Care Products

Lavender Silk Soaps, Lotions creams, Body powder, Lavender Herbal body powder, Skin Care Creams.

2) Herbal Hair Care Cosmetics

Henna (Lawsonia Inermis), Amla (Emblca Officinalis), Shikakai (Acacia Concinna), Brahmi (Bacopa Monnieri), Bhringraj (Eclipta Alba), Guar Gum (Cyamopsis tetragonolobus).^[18]

3) Herbal Lip Care Cosmetics

Herbal Lipsticks, Herbal Lip Gloss, Herbal Lip Balm, Herbal Lip plumper.

4) Herbal Eye Care Cosmetics

Eye Make Up, Eye Shadows, Eye Gloss, Liquid Eye Liners.

5) Herbal Creams

Aloe Moisturizing Hand Cream, Rich Face and Hand Cream, Herbal Moisturizers.

6) Herbal Oils

Herbal oils are Effective for Baldness, Falling of Hair, Thinning of Hair, Dandruff, and Irritation & Itching of Scalp, Patchy Baldness, and Maintenance of fine head of Hair.

7) Herbal Perfumes & fragrances

Citrus Fragrance: The light, fresh character of citrus notes (bergamot, orange, lemon, petitgrain, mandarin etc.) is often combined with more feminine scents (flowers, fruits and chypre).

B) Dry Skin Treatment

1. Coconut oil

Coconut oil comes from the fruit or seed of the coconut palm tree *Cocos nucifera*, family Areaceae. The 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. A study shows that extra virgin coconut oil is effective and safe when used as a moisturizer, with absence of adverse reactions.^[19] A study found that coconut oil helped prevent protein loss from the wet combing of hair when used for fourteen hours.^[20]

2. Aloe

A native of southern Africa, the aloe vera plant has fleshy spiny-toothed leaves and red or yellow flowers. It is an ingredient in many cosmetics because it heals, moisturizes, and softens skin. Simply cut one of the aloe vera leaves to easily extract the soothing gel.

C) Anti-Aging Treatment

1. 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 physical stress.^[21] Currently, it is widely thought to have antioxidative properties.^[22]

2. 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.^[23]

D) 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.

1. 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.^[24]

2. 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 used in the treatment of common cosmetic problems are skin cleanser.^[24]

E) Skin Protection

1. 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. 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.^[25]

2. Calendula

Calendula, pot marigold, is a genus of about 12–20 species of annual or perennial herbaceous 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.^[26] There is "limited evidence" that calendula cream or ointment is effective in treating radiation dermatitis.^[27,28]

F) Hair Care

1. Amla

It is obtained from the plant *Emblia 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.^[29] 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.^[30]

2. 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.

G) Anti-inflammatory

1. Turmeric

Research shows curcumin is a highly pleiotropic molecule capable of interacting with numerous molecular targets involved in inflammation. Curcumin modulates the inflammatory response by down-regulating the activity of cyclooxygenase-2 (COX-2), lipoxygenase, and inducible nitric oxide synthase (iNOS) enzymes; inhibits the production of the inflammatory cytokines tumor necrosis factor-alpha (TNF- α), interleukin (IL) -1, -2, -6, -8, and -12, monocyte chemoattractant protein (MCP), and migration inhibitory protein; and down-regulates mitogen-activated and Janus kinases.^[31,32] Turmeric is comprised of a group of three curcuminoids: curcumin (diferuloylmethane), demethoxycurcumin, and bisdemethoxycurcumin as well as volatile oils (tumerone, atlantone, and zingiberone), sugars, proteins, and resins. The curcuminoid complex is also known as Indian saffron.^[33] Curcumin is a lipophilic polyphenol that is nearly insoluble in water^[34] but is quite stable in the acidic pH of the stomach.^[35]

2. Niacinamide

A recent open-label, multicenter, prospective cohort study was conducted to assess the clinical utility of oral pharmacologic doses of nicotinamide and zinc in 198 patients with acne vulgaris and/or rosacea.^[36] The basis for this investigation was a variety of potential mechanisms of action of nicotinamide and zinc, including: (1) an antiinflammatory effect via inhibition of leukocyte chemotaxis, lysosomal enzyme release, lymphocytic transformation, and mast cell degranulation;

(2) bacteriostatic effect against *Propionibacterium acnes*; (3) inhibition of vasoactive amines; (4) preservation of intracellular coenzyme homeostasis; and (5) decreased sebum production.^[37] Niacinamide (also known as nicotinamide) is the amide of nicotinic acid (vitamin B3 or niacin), which is a water-soluble vitamin found in meat, fish, and wheat. Niacinamide acts as an antioxidant but also possesses biological activities, making it an important emerging cosmetic ingredient.^[38] Niacinamide has antiinflammatory action, skinlightening properties, and can decrease the production of sebum; thus, it may be of benefit to patients with inflammatory skin conditions.^[39]

3. Feverfew

Feverfew (*Tenacetum parthenium*), a member of the Asteraceae family and species-specific dried chrysanthemum leaves, is a medicinal herb used traditionally to reduce fever and treat headache, arthritis, and digestive problems.^[40,41] The perennial flowering plant has citrus-scented leaves and is reminiscent of daisies. It has potent antiinflammatory, antioxidant, and anti-irritant properties. Its main components are volatile oils (L-camphor, linalool, and terpenes), flavonoids, and sesquiterpene lactones (parthenolides). Feverfew inhibits 5-lipoxygenase and cyclooxygenase, resulting in a reduction in platelet aggregation and parthenolides inhibit serotonin release from platelets.^[42]

4. Licorice Extract

Licorice (*Glycyrrhiza glabra* and *Glycyrrhiza inflata*) plants have been long used in alternative medicine for the treatment of a variety of inflammatory conditions as the result of their presumptive healing powers. *Glycyrrhiza glabra* contains glabridin, and *Glycyrrhiza inflata* contains licochalcone A, both of which have anti-irritant and anti-inflammatory properties.^[43,44] Studies have shown that licorice reduces inflammation, promotes mucous secretion, soothes irritation, and stimulates adrenal gland activity.^[45] In addition, licorice appears to exert immunomodulatory effects by regulating cytokines and interferon and thus, may have antiviral and antimicrobial activity.^[46-48]

H) Breast Cancer

There is no direct evidence that the use of any herbal medicines can increase or decrease breast cancer risk. However, herbs that have estrogen-like actions raise concern. Several years ago, estrogen-like compounds from plants (phytoestrogens) were thought to have the potentially positive effect of acting like weak estrogens in the body. It was proposed that these weaker estrogens could block effect of estrogen in the body and possibly decrease breast cancer risk, as well as disease recurrence in breast cancer survivors. This idea changed when clinical studies showed proliferation (increased cell multiplication) in the breasts of women on diet high in soy phytoestrogens.

I) Anticancer agents

Cancer research is a very expensive area. As prevention is easier and cheaper than therapy and rehabilitation, scientists are more interested in this field. And a leading cause of death worldwide. One-third of the world's population suffers from cancer and it is responsible for one-fifth of all deaths.^[49] There are three stages in the development of cancer: initiation, promotion and progression.^[50] Taxol, a taxane diterpenoid isolated from *Taxus brevifolia* (Taxaceae), was first reported in 1971. At the time of its discovery taxol was only one of a promising natural product under pharmacological investigation. It showed significant, but modest in vivo activity in two leukemia cell lines. Interest in taxol received a significant boost with the finding of, that taxol is a mitotic inhibitor, showing the unique mechanism of stabilizing microtubules and inhibiting depolymerisation back to tubulin. This is in contrast to other antimetabolic agents binding to soluble tubulin and inhibiting the polymerization to tubulin. In 1992 Taxol® (paclitaxel) was approved for marketing as a new drug for treatment of refractory ovarian cancer. A crude extract of *Camptotheca acuminata* (Nyssaceae), a plant growing in China, exhibited anticancer activity. From the extract camptothecin was isolated and demonstrated significant anticancer activity in a leukemia and a carcinosarcoma cell line. Inhibition of topoisomerase I was identified as the mode of action of camptothecin. The camptothecin analogs topotecan (Hycamtin®) and irinotecan (Campto®) have been approved for human use in the treatment of metastatic ovarian carcinoma (topotecan) or metastatic colorectal cancer (irinotecan). Phytochemical and biological investigation of *Catharanthus roseus*, a traditional chinese medicinal plant, led to the isolation of the so-called vinca alkaloids vinblastine and vincristine, two important cancer chemotherapeutic agents in current use. These two dimeric indole-indoline alkaloids are used for the treatment of acute childhood leukemia (vincristine), hodgkin's disease (vinblastine) and metastatic testicular tumors (vinblastine).^[51,52]

J) Anti-HIV agents

Hypericin and pseudohypericin, two compounds isolated from *Hypericum perforatum* (Guttiferae), showed activity against a variety of retroviruses, including HIV, in vivo and in vitro. Hypericin and pseudohypericin showed no inhibitory activity on reverse transcriptase, but inhibited the release of reverse transcriptase by stabilizing the structure of the HIV capsid and so preventing the uncoating process.

K) Antifungal agents

Ficuseptine, an indolizidine alkaloid, was isolated together with antofine, a phenanthroindolizidine alkaloid, from *Ficus septica* (Moraceae), a traditional remedy used in papua new guinea. Both agents showed significant activity against the plant-pathogenic fungus *Penicillium oxalicum*.^[53]

L) Herbal Diuretics

Various herbs have a history of successful use for promoting a healthy balance of fluids in body tissues.

1. Dandelion Root Extract

Dandelion has enjoyed very favorable reputation with herbalists for centuries as a trusted liver tonic and diuretic. Dandelion is also a natural source of potassium and its use as a natural diuretic is highly encouraged since it maintains critical potassium levels.

2. Uva Ursi

Another such herb is Uva Ursi. Uva Ursi contains a group of compounds that were known as early as the 13th century to have diuretic action. Uva Ursi leaves have been included in many commercial diuretic preparations. This herb is thought to act directly on the kidneys to achieve its fluid balancing effect.

3. Buchu leaves

Regarding Buchu leaves, *The Physiomedical Dispensatory* states, "Their power is expended chiefly upon the bladder and its appendages." and "A cold

strong preparation increases the flow of urine; a weaker and warm preparation promotes gentle diaphoresis."^[54]

4. Couch Grass

The *Eclectic Materia Medica* identifies Couch Grass as "A mild diuretic with slightly aperients properties, and a demulcent of value in irritated conditions of the genito-urinary organs."^[55] Petersen also describes Couch grass as having demulcent and mildly diuretic properties.^[56]

For thousands of year's natural products have played a very important role in health care and prevention of diseases. The ancient civilizations of the Chinese, Indians and North Africans provide written evidence for the use of natural sources for curing various diseases. Endorsement of herbal drugs in most countries is based on traditional herbal references, provided they are not known to be unsafe when used to treat slight illnesses. But, now-a-days claims are being made to treat more serious illnesses with herbal drugs for which no traditional knowledge is present.

Here I emphasis on list various plant's used in daily life for various medicinal uses in Table 2.

Table 2: List of Plants with Medicinal uses.

Sr.No.	Name of plant	Common name	Medicinal uses
1.	<i>Aconitum ferox</i> (Ranunculaceae)	Vatsnabh	Cardiac stimulant ^[57] , Anti-rheumatic ^[58] , Anti-inflammatory. ^[58]
2.	<i>Aconitum heterophyllum</i> (Ranunculaceae)	Atis	For curing stomach ache and fever ^[59] , Tonic ^[60] , Febrifuge ^[60] , Anti-cough. ^[60]
3.	<i>Allium sativum</i> (Liliaceae)	Garlic	Anti-hypertensive ^[57] , Anti-hyperlipidemic ^[61] , Platelet aggregation Suppressant. ^[61]
4.	<i>Azadirachta indica</i> (Meliaceae)	Neem	Anthelmintic ^[57] , Astringent ^[60] , Anti-septic ^[60] , Purgative ^[60] , Emollient ^[60] , Anti-plaque. ^[62]
5.	<i>Andrographis paniculata</i> (Acanthaceae)	Kalmegh	Stomachic ^[57] , Hepatoprotective ^[57] , Dyspepsia ^[57] , Anthelmintic ^[57] , Bitter tonic ^[63] , Febrifuge. ^[63]
6.	<i>Asparagus recemosus</i> (Liliaceae)	Satavatri	Galactagogue ^[63] , Diurectic ^[63] , Anti-dysenteric ^[63] , Nervine disorder. ^[64]
7.	<i>Commiphora weightii</i> (Bursaraceae)	Guggul	Hypocholesteremic ^[60] , Hypolipidemic ^[65] , Anti-inflammatory ^[66] , Anti-rheumatic. ^[66]
8.	<i>Embelica officinalis</i> (Euphorbiaceae)	Amla	Anti inflammatory, Diuretic ^[63] , Laxative ^[63] , Hepatoprotective ^[60] , Anti-oxidant ^[66] , Anti-fungal ^[60]
9.	<i>Garcinia camboga</i> (Guttiferae)	Kokum	Anti-obesity ^[63] , Hypolipidemic ^[65] , Anti-fungal ^[63] , Anti-ulcer ^[66]
10.	<i>Ocimum teniflorum</i> (Labiatae)	Holi basil	Aromatic ^[60] , Stimulant ^[60] , Tonic ^[60] , Anti- oxidant ^[64] , Anti-inflammatory ^[64] , Anti-diabetic ^[64]
11.	<i>Plantago ovata</i>	Isabgol	Aphrodisiac ^[57] .

	(Plantaginaceae)		Anti-inflammatory ^[57] , Diarrhea ^[57] , Demulcent ^[60] , Laxative ^[63] , Emollient ^[63]
12.	<i>Saraca indica</i> (Leguminosae)	Ashoka	Gynecologic disorders ^[57] , Uterine tonic ^[66] , Sedative ^[66] , In menorrhagia ^[66]
13.	<i>Withania somnifera</i> (Solanaceae)	Ashwagandha	Sedative ^[63] , Anti-rheumatic ^[63] , Diuretic ^[63] , Anti- inflammatory ^[59] , Anti-stress ^[60] , Anti-tumor ^[61] , Immunomodulator ^[65] , Rejuvenator ^[62] , Hypotensive ^[62] , Hemopoetic ^[62]

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. The pharmacological treatment of disease began long ago with the use of herbs. For thousands of year's natural products have played a very important role in health care and prevention of diseases. People are using herbal medicines from centuries for safety, efficacy, cultural acceptability and lesser side effects. Plant and plant products have utilized with varying success to cure and prevent diseases throughout history. India is sitting on a gold mine of well-recorded and well-practiced knowledge of traditional herbal medicine. The basic requirements for gaining entry into developed countries include well-documented traditional use, Single-plant medicines, Medicinal plants free from pesticides, heavy metals etc.

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