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### Herbal - Cosmetics

#### COSMETICS

According to D SCA Act 1946 -

Any article, intended to be rubbed, powdered, sprinkled or sprayed on or introduced or applied any part of human body for cleansing, beautifying, promoting attractiveness or altering the appearance and includes any article intended for use as component of cosmetics.

#### Herbal Cosmetics

Herbal cosmetics is defined as the beauty products, which possess desirable physiological activities, such as skin healing, smoothening, appearance, enhancing and conditioning properties with the help of herbal ingredients.

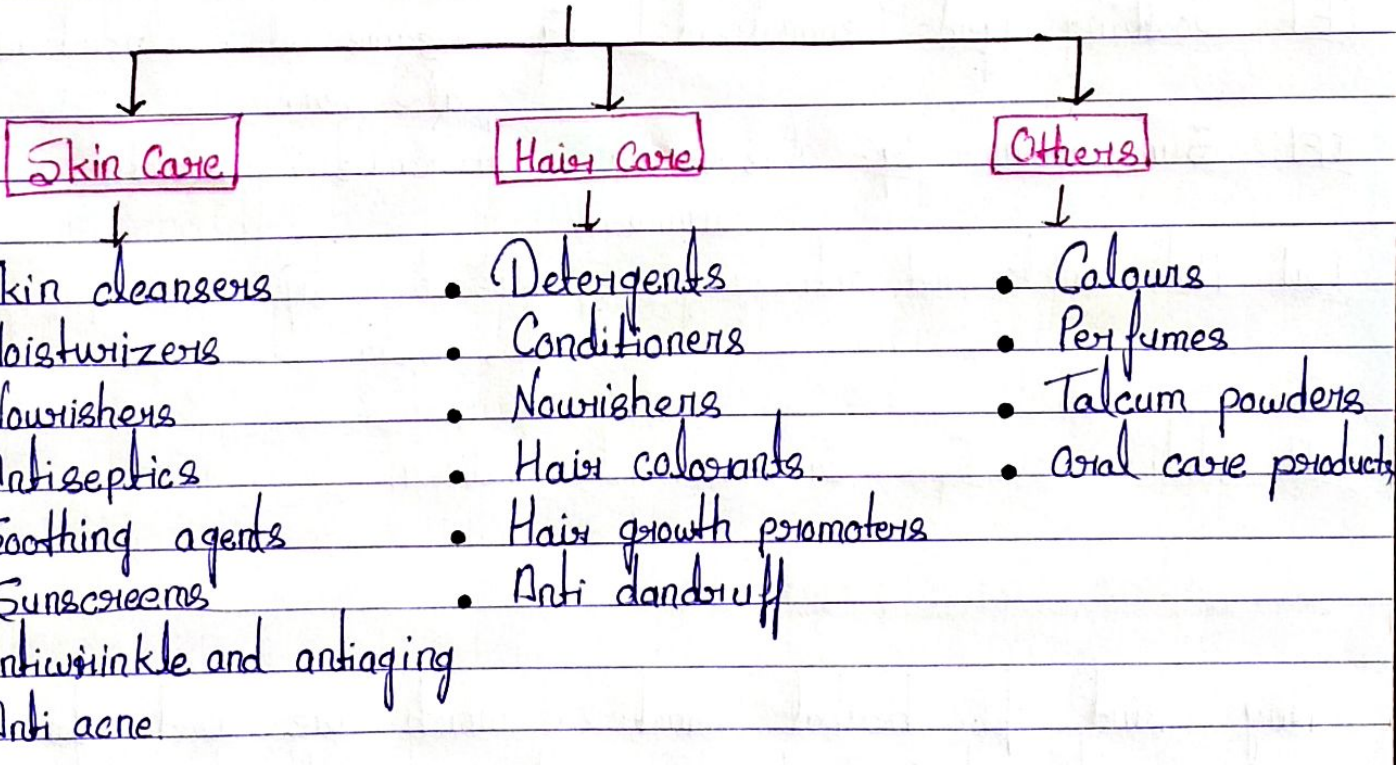
## Categories of herbal Cosmetics-

The herbal cosmetics can be grouped in following categories

- [1] For enhancing the appearance of the facial skin.
- [2] For hair growth and care.
- [3] For skin care (acne, pimples, sustaining)
- [4] Shampoo, soap, powders and perfumery etc.
- [5] Miscellaneous products.

## Types of Herbal Cosmetics

Herbal Cosmetics



## [1] Skin care Products-

Skin is constantly exposed to dirt, microbes, irritants, radiations and toxins which can affect the skin in many ways.

Hence to protect the skin, cleanse it and restore the tone, soothen it and prevent tanning, wrinkle and scar formation, various preparations are used which are enlisted as follows -

[A] Skin cleansers - Eg- Milk, cucumber, citrus peel, aloe.

[B] Moisturizers - Eg- Aloe vera, neem, almond oil, rose.

[C] Nourishers - Eg- Honey, carrot, peach, wheat germ oil.

[D] Antiseptics - Eg- Neem, turmeric, tulsi, lavender oil.

[E] Soothing agents (emollients) - Eg- Sesame oil, almond oil, aloe-vera.

[F] Sunscreens - Eg- aloe-vera, chamomile, calendula, cucumber.

[G] Antiwrinkle and anti-aging - Eg- Peach, liquorice, papaya, aloe-vera, apricot, turmeric.

[H] Anti acne - Eg- Cucumber gel, vetiver.

## [2] Hair Care products -

Any kind of herbal cosmetics which are used for the caring of hair, hair growth and hair fall problem they are called hair care products.

Hair care preparations are applied topically to the scalp and hair.

These contain ingredients which either clean, condition or nourish the hair or prevent dandruff formation.

The following are the various hair care preparations -

[A] Detergents - Eq. Soap nut, shikakai, aetha.

[B] Conditioners - Eq. Henna, amla, hibiscus, rosemary, tea.

[C] Nourishers - Eq. brahmi, bhringraj, eggs, coconut oil, sesame oil.

[D] Hair colorants - Eq. Henna.

[E] Hair growth promoters - Ex- brahmi, amla, hibiscus, coconut oil, sesame oil.

[F] Antidandruff - Ex- Soap nut, shikakai, lemon, thyme, aloe-vera.

### [3] Other Cosmetics

[A] Colours - These are used to prepare various cosmetic products like lipsticks, nail polishes, eye products.

Ex- Anthocyanins, saffron, turmeric, carotenoids, indigo, capsicum, chlorophyll.

[B] Perfumes - Ex- Volatile oil of plants like rose, lavender, jasmine, sandalwood.

[C] Talcum powders - It contains talc with added plants extracts to improve impart the

desired flavour and odours.

Ex- Sandalwood, rose, jasmine, lavender etc.

[10] Oral care products- Oral care products like tooth paste, powders, mouth washes, mouth fresheners etc.

Various herbs and their extracts are incorporated into these preparations in order to achieve antimicrobial, antiseptic, antiplaque, anti-inflammatory and mouth freshening properties.

Ex- Neem, mentha, chamomile, sage, myrrh, nutmeg, chitosan, calendula, rosemary etc.

## Study of Herbal Drugs used in Cosmetics

### [1] Soapnut [Reetha]

Source- It consists of pods of *Sapindus trifoliatus*, *Sapindus mukorossi*

Family- Sapindaceae.

Description- It is a shrub with linear pods, the dried powder of pods is brown in colour and have soap like properties.

Chemical Constituents- It contains saponins (10-11%), mucilage, gums, proteins.

Saponins contain Sapindosides A, B, and C, D, diosgenin, ginsenosides, stigmasterol and squalenol.

Uses- It is used as detergent, hair cleanser, hair growth promoter and antistatic agent.

## [2] Amla [Indian gooseberry]

Source- It consists of dried and fresh fruits of *Phyllanthus emblica*.

Family- Phyllanthaceae.

Description- It is a small tree with a number of globular fruits which is yellowish in color. They have sour and astringent taste.

Chemical Constituents- It is a rich source of ascorbic acid (vit C). Other constituents include tannins, minerals such as iron, calcium, phosphorus. It is also rich in pectin.

Uses- Amla is used as a hair growth promoter, hair nourisher, hair conditioner, and colorant.

## [3] Henna (Mehendi)

Source- It consists of fresh and dried leaves of *Lawsonia inermis*.

Family- Lythraceae.

Description- It is a flowering plant and its leaves are used to color and decorate the skin and hair.

Chemical Constituents- Henna contains a soluble component known as lawsone.

- It is responsible for the color.
- It also contains xanthenes, tannins, flavonoids and coumarins.

Uses- Henna is used as hair colorant, hair dye, hair conditioner and nourisher.

- It produces a cooling effect on the skin.
- It is also used to treat burns and wounds.

## [4] Hibiscus (Jagwand)

Source It consists of dried flowers and leaves of *Hibiscus rosa sinensis*.

Family- Malvaceae.

Description- Red and white varieties are generally used in some hair preparations.

Chemical Constituents- It contains vitamins, flavonoids, anthocyanins, quercetin, mucilage and albumin.

Uses- It is used as hair growth promoter, anti-greying agent, hair conditioner, hair rinses.

- It gives smoothness and shine to hair.

## [5] Tea (Chai)

Source - It consists of dried leaves of *thia sinensis* and *cimellia sinensis*.

Family - Theaceae.

Description - The leaves are collected, dried and made into the form of tea dust.

Chemical constituents - Tea contains polyphenols, catechin epicatechin, caffeine, theophylline, theobromine.

Uses - It is used as hair conditioner, colorant.  
It gives smoothness and shine to hair.

## [6] Aloe (Kumari)

Source - It consists of dried or fresh mucilage of *aloe vera*.

Family - Liliaceae.

Chemical constituents - It contains anthraquinones like schein, aloin, emodin, minerals and mucilage.

- Chemically mucilage is a polysaccharides consisting of salts of poly uronic acids.

Uses - Aloe has good wound healing properties.  
- It is used in skin care and hair care cosmetics.  
- It is used to treat radiation burns.  
- It is used as a hair conditioner, nourisher.



## [7] Liquorice (Glycyrrhiza)

Source- It consists of dried roots and stolons of *Glycyrrhiza glabra*.

Family- Leguminosae.

Chemical Constituents- Liquorice contains saponin glycosides, glycyrrhizin.

- It is also contains flavonoids, liquiritin and isoliquiritin.

Uses- The ammonium and sodium salts of glycyrrhizic acid are widely used in cosmetics.

- It has skin improving properties hence used in skin care cosmetics.

## [8] Turmeric (Curcuma)

Source- It consist of dried and fresh rhizomes of *curcuma longa*.

Family- Zingiberaceae.

Chemical Constituents- It consist volatile oils, resins, curcuminoids like curcumin.

Uses- Antiseptic and anti-inflammatory, skin conditioning and antioxidant properties.

- It is used in skin care cosmetics.

- It is incorporated in ointments and creams.

- It is also used as a colouring agent, antimicrobial and wound healing agent.

## [9] Sandalwood

Source- It consist of heart wood of santalum album.

Family- Santalaceae.

Description- The wood is obtained from main stem and branches.

It is collected from adult 25 years old trees.

Chemical constituents- It contains volatile oils, which contain 95% of two isomeric sesquiterpene alcohols namely a alpha and beta santalol.

- It is also contains santalol, santene, santone, santalene and santalene.

Uses- Sandalwood is used in perfumery, as skin conditioner, in creams, lotions soaps and powders.

## [10] Bhainraj

Source- It consists of the entire herb of Eclipta alba.

Family- Asteraceae.

Chemical Constituents- It contains alkaloids ecliptine, amyriin, wedelic acid and luteolin.

Uses- It is used as anti-inflammatory.

It is also used as a dentifrice.

It improve the skin complexion.

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## HERBAL - EXCIPIENTS

Introduction- Excipients / Pharmaceutical aids are the substances which are inert and have little or no therapeutic value, but are essential in the manufacture of various pharmaceutical dosage forms such as tablet, capsules, syrups etc.

Excipients are mixed with the active ingredients to make up the volume or improve the stability or mask the bitter taste or improve the appearance, odour and other characteristics of the dosage forms.

Binding agents, suspending agents, viscosity builders, disintegrating agents etc. also constitute pharmaceutical excipients / aids.

### Advantage of Herbal Excipients-

[A] Biodegradable- Naturally occurring polymer produced by all living organism.  
They show no adverse effects on the environment or human being.

[B] Biocompatible and nontoxic- Chemically nearly all of these plant materials are carbohydrates in nature and composed of repeating monosaccharites units.  
Hence they are non-toxic.

[C] Economic - They are cheaper and their production cost is less than synthetic material.

[D] Safe and devoid of side effect - They are from a natural source and hence, safe and without side effects.

[E] Easy availability - In many countries they are produced due to their application in man.

### Disadvantages of Herbal Excipients -

[A] Microbial Contamination - During production, they are exposed to external environment and hence, there are chances of microbial contamination.

[B] Variation - Synthetic manufacturing is controlled procedure with fixed quantities of ingredients while production of natural polymers is dependent on environment and various physical factors.

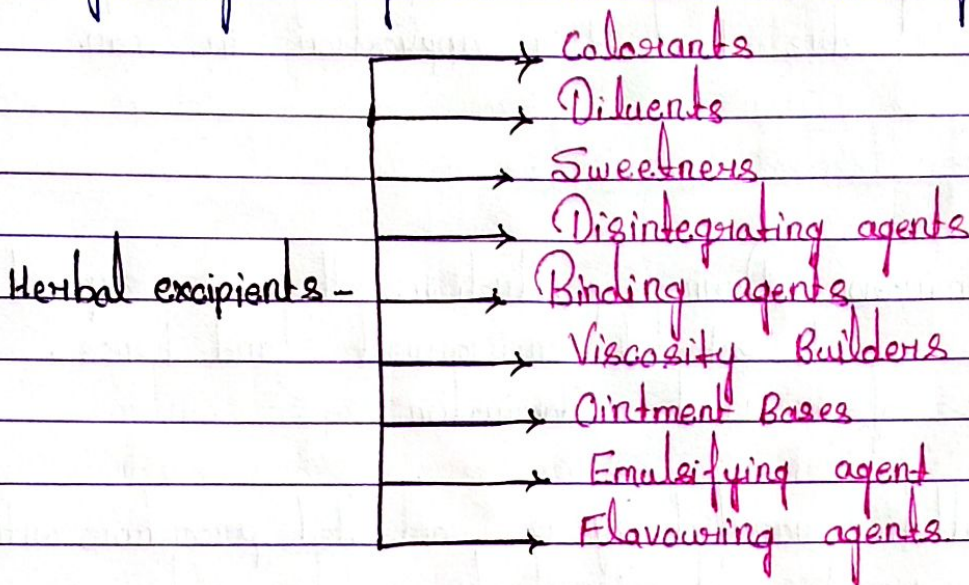
[C] The uncontrolled state of hydration - Due to differences in the collection of natural material at different times, as well as differences in region, species and climate conditions the percentage of chemical constituents present in a given material may vary.

[D] Slow process - As the production rate is dependent upon the environment and many other factors, it can't be changed, so natural polymers have a slow rate of production.

[E] Heavy metal contamination- There are chances of heavy metal contamination after associated with herbal excipients.

## Classification of Herbal excipients

Herbal excipients can be broadly classified into the following categories based on the functions-



[A] Colorants - Ex- henna, chlorophyll, caramel, amaranth indigo

[B] Sweeteners - Ex- glycyrrhiza, honey, stevia.

[C] Diluents - Ex- lactose, starch, mannitol, sucrose.

[D] Disintegrating agents - Ex- starch, isopropyl husk, carboxy methyl cellulose.

[E] Binding agents - Ex- starch, ~~isop~~ acacia, gelatin, tragacanth.

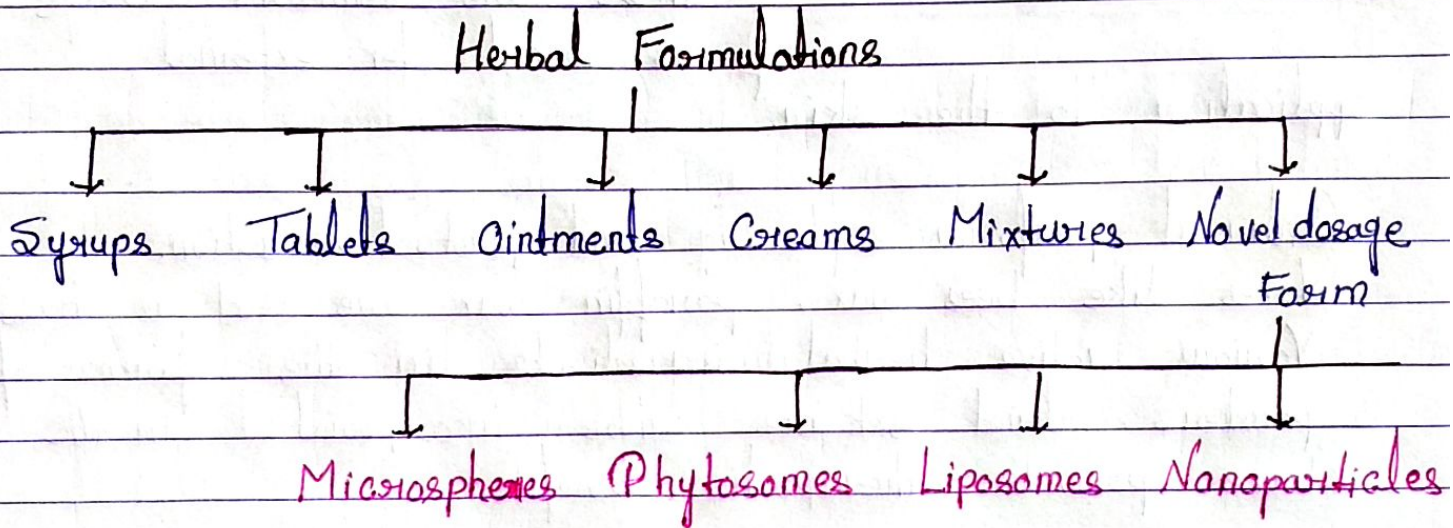
[F] Viscosity builders - Ex- Pectin, tragacanth, cellulose, guar gum, gelatin.

[6] Ointment Bases - Ex - lanolin, bees wax.

[4] Emulsifying agents - Ex - Acacia, agar, guar gum, methyl cellulose.

[1] Flavouring agents - Ex - Cardamom, vanilla, lemon oil, orange oil.

## HERBAL FORMULATIONS



[1] Herbal Syrup - These are preparations formulated by incorporating sugar solution with plant extracts such as infusion, decoction, juice, simple solution.

Honey or unrefined sugar is used to prepare syrup as they act as good preservatives.

Herbal syrup are made with equal proportions of herbal extracts with honey or sugar sol<sup>n</sup> of known concentration.

[2] Herbal Tablets- These are solid dosage forms of powdered herbs, herbal extracts or their constituents prepared by compression.

In addition to the active ingredients, these contain diluents like binding agents which provide strength colouring agents to improve appearance, sweetening and flavouring agents to mask bitter taste, disintegrating agents to facilitate the breakdown.

[3] Herbal Ointments- These are semisolid dosage forms meant for external application to the skin.

- Ointment perform softening and protective action.
- Waxes like bees wax, paraffin wax are used as base.
- Various active herbal ingredients in the form of powders, dried extracts can be incorporated in the base provide therapeutic benefits.

[4] Herbal Cream- These are viscous, semisolid preparation which may be oil in water type (aqueous) creams or water in oil type (oily) creams.

[5] Herbal Mixture- These are the preparations containing combination of two or more herbal ingredients which are formulated into various formulations like tablet, capsules, ointment, creams etc.

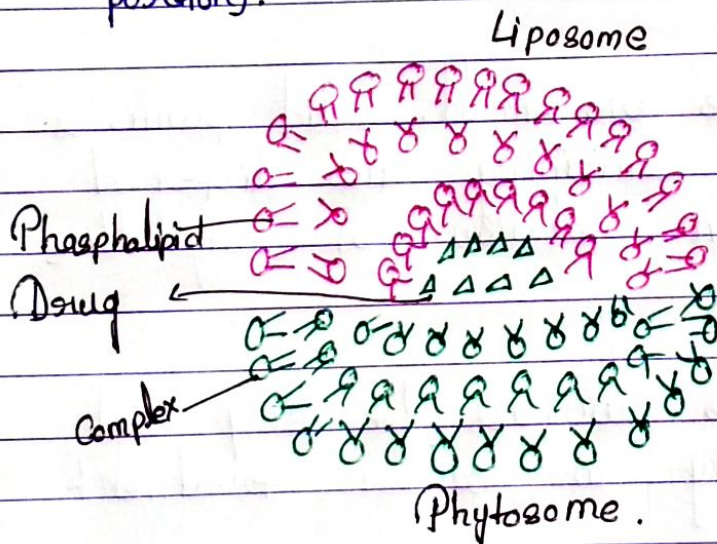
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# [6] Novel drug delivery Systems (NDDS) or Novel dosage form

[A] Phytosomes - The concept of Phytosomes is another break through for the development in herbal drug technology.

Phytosomes contain herbal active ingredients surrounded and bonded by phospholipids. They are produced by bonding phosphatidyl choline with the ingredients thereby producing a complex.

The phospholipid structure has a water soluble choline head and fat soluble body and tail (Phosphatidyl position).



[B] Liposomes - These are prepared by incorporating the active ingredients inside the microscopic double layered membranes which are made of phospholipids.

These vesicles are suspended in an aqueous solvent uniformly.



Drug incorporated in the liposomes can be delivered to the desired site in desired concentration.

This novel drug delivery system is especially targeted to liposomal delivery of drugs in cancer chemotherapy, arthritis, haemophilia and diseases of immune system.

**[C] Nanoparticles-** These are colloidal particles of the submicron size which act as carriers for drug molecules.

These are used to target various sites in the treatment of cancer, disease of the reticulo endothelial system and enzyme replacement therapy in liver.

**[D] Microspheres-** These are small, solid particles carriers containing the dispersed drug particles either in solution or crystalline form.

Microspheres are used as carriers for drug and therapeutic agents especially in cancer treatment and hormonal disorders.