Herbs for Skin Care:
Aloe Vera

Aloe vera (Guarpatha)

- *It* is a cactus·like plant that grows in hot, dry climates.
- In India, it is found in Rajasthan, Andhra Pradesh, Gujarat, Maharashtra and Tamil Nadu.
- use as folk medicine,
- wound and burn healing properties, anti·inflammatory and immunomodulatory effects.
- two commonly used products are gel and the yellow sap.
- they differ in their chemical composition as well as in therapeutic abilities

Aloe vera (Guarpatha)

- It is perennial shrub 60- 100 cm tall belonging to the liliacea family,
- having green to grey·green triangular thick and fleshy leaves with serrated edges.
- flowers are produced in November
- Each leaf is composed of three layers: 1) an inner clear gel that contains polysaccharides, amino acids, lipids, sterols and vitamins, etc.; 2) the middle layer of latex which is the bitter yellow sap and contains anthraquinones and glycosides ; 3) the outer thick layer of 15·20 cells called rind which has protective function and synthesizes carbohydrates and pmteins.

Aloe vera (Guarpatha)

- contains more than 75 potential active constituents mainly present in the gel and in the yellow sap of the plant
- The gel consists primarily of water (> 98%) and polysaccharides

Aloe vera: Active Constituents

- **Sugars**: monosaccharides (mannose·6·phosphate)and polysaccharides

(glucomannans and acemannan). glycoprotein with antiallergic properties called alprogen and novel anti-inflammatory compound, C·glucosyl chromone, has been isolated

- **Anthraquinones**: Yellows sap provides 12 anthraquinones including aloin and emodin. These are phenolic compounds traditionally known as laxatives and act as analgesics, antibacterials and antivirals.

Sterols: Gel contains cholesterol, campesterol, a·sisosterol and lupern and they have anti·inflammatory, antiseptic and analgesic properties.

- **Enzymes:** Aloe gel contains 8 enzymes which include alkaline phosphatase, amylase, bradykinase, carboxypeptidase, catalase, cellulase, lipase, and peroxidase. Bradykinase helps to reduce excessive inflammation when applied to the skin topically. while others help in the breakdown of sugars and fats.

Aloe vera: Active Constituents

- **Minerals:** Calcium. chromium, copper, selenium, magnesium, manganese, potassium, sodium and zinc are the major minerals present in Aloe.
- **Hormones:** The hormones auxins *and* gibberelfins have been reported in Aloe. They help

in wound healing and have anti· inflammatory action.

- **Amino acids:** Aloe provides 20 of the 22 human required amino acids and 7 of the 8
- essential amino acids.
- **Vitamins:** Aloe contains vitamins A (~·carotene), C and E, which are antioxidants. It

also contains vitamin B " folic acid, and choline.

- **Others:** Aloe also contains salicylic acid, lignin, saponins. Salicylic acid possesses anti·
- inflammatory and antibacterial properties. Lignin, an inert substance, when included in
- topical preparations, enhances penetrative effect of the other ingredients into the skin.
- Saponins are the soapy substances and have cleansing and antiseptic properties.

Aloe vera: In Skin Care

- **Moisturizing and anti·aging effect**: Polysaccharides help in binding moisture into the skin. Aloe stimulates fibroblast which produces collagen and elastin fibers making the skin more elastic and less wrinkled. It also has cohesive effects on the superficial flaking epidermal cells by sticking them together, which softens the skin. The amino acids also soften hardened skin cells and zinc acts as an astringent to tighten pores.

Aloe vera: In Skin Care

- **Skin Protector** : Aloe gel has been reported to have a protective effect against radiation damage to the skin. On administration of aloe gel, an antioxidant protein, metallothionein, is generated in the skin, which scavenges hydroxyl radicals and prevents suppression of superoxide dismutase and glutathione peroxidase in the skin.

Aloe vera: In Skin Care

- A. vera improved fibroblast cell structure, as well as quickened the collagen creation process
- It forms the coat on the surface of skin and shields the skin from harmful UV radiations of the sun.
- It diminishes the wrinkles and aides in the lightning of the dark spots and imperfections.
- Dermatologists prescribe A. vera to cure sunburn, lighten stretch marks and sun tan
- have the healing property in the skin cells up to the epithelial level
- remarkably powerful moisturizer and recuperating operator for both animal and human skin

- Healing properties: Increases collagen synthesis which accelerates wound contraction and increases the breaking strength of scar tissue.
- Applied to wounds for over 5000 years by Egyptians, Romans, indigenous peoples of Africa Asia, and the Americas, *Aloe vera* continues to be a first-line treatment for burns, ulcers, and surgical wounds

- **Anti·inflammatory action**: *it* inhibits the cyclooxygenase pathway and reduces prostaglandin E2 production from arachidonic acid due to the anti·inflammatory compound called C·glucosyl chromone present in the gel.
- **Antiviral and antitumor activity**: These actions may be due to indirect or direct effects. Indirect effect is due to stimulation of the immune system and direct effect is due to anthraquinones.
- **Antiseptic effect:** The ingredients like Lupeol, salicylic acid, urea nitrogen, cinnamonic acid, phenols and sulfur have inhibitory action on fungi, bacteria and viruse