Aloe Vera Handbook Cultivation, Research Finding, Products, Formulations, Extraction & Processing

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Aloe Vera is a semi tropical plant. It is one of the oldest known medicinal plants gifted by nature, Aloe Vera often called Miracle plant known by many names. It contains more than two hundred tonic ingredients including essential amino acids, enzymes, glucose and more. Also contains the most essential components required by the human body. It is grown wild in hedge rows in dry soil conditions and almost all parts of India. It can be grown even under constant drought conditions. Commercial cultivation and utilization of this plant with the application of technology can be of great value. There are various benefits of this plant; it is used to support the natural healing of skin that has been damaged. A common usage is to sooth sunburned skin. Aloe Vera can also be made into juices, gels, powders and is often added to products. For example it can be found in cosmetics, shampoos, lotions and many other common household Aloe Vera products. The many benefits of Aloe Vera are not fully researched as of yet. Processing of Aloe Vera gel derived from the leaf pulp of the plant, has become a big industry worldwide due to the application in the food industry. It has been utilized as a resource of functional food, especially for the preparation of health drinks which contain Aloe Vera gel and which have no laxative effects. Given the exponentially growing demand for it in the international market, it presents the finest commercial opportunity among the various medicinal plants. Also, India is among the few countries gifted with the unique geographical features essential for cultivation of Aloe Vera and other high potential medicinal plants.

Some fundamentals of this book are chemical investigations of different parts of the leaf, agro technique: Aloe Vera, economics of cultivation per hectar, aloe (Aloe Vera) investment opportunity, specialty raw material market for cosmetics/toiletries, strategy for capacity creation and marketing, influence of Aloe Vera on the glycol amino glycans in the matrix of healing dermal wounds in rats, effects of low molecular constituents from Aloe Vera gel on oxidative metabolism and bactericidal activities of human neutrophils, Aloe Vera & aids research, anti diabetic activity of aloes: preliminary, aloe reduction in ulcers, erosions & hemorrhages, extraction process, processing steps, extraction process of aloe gel and powder etc.

This book highlights such technical details to guide and encourage new entrepreneurs. It is very useful book for consultants, farmers, students of Agricultural universities, libraries etc.
Advantages of wholeleaf cold process

Price

Global Scenario
International Aloe Science Council
Estimated global market for Aloe Vera Gel:
Speciality, cosmetics and toiletry market
Speciality raw material market for cosmetics/toiletries

Japanese Scenario
Scenario
Important Overseas Players
Forever living
Santrel international
Selected Indian Players
Emami
Siri Agritech

Driving Factor For Demand
Indian Skin Cream Market

Strategy for Capacity Creation and Marketing
6. Research Findings
Aloe vera and the inflamed synovial pouch model
Isolation of a stimulatory system in an Aloe extract
Aloe vera as a biologically active vehicle for hydrocortisone acetate.
The stimulation of postdermabrasion wound healing with stabilized aloe vera gel-polyethylene oxide dressing
Aloe-emodin effects on arylamine N-acetyltransferase activity in the bacterium Helicobacter pylori.
Influence of aloe vera on the healing of dermal wounds in diabetic rats.
Influence of Aloe vera on the glycosaminoglycans in the matrix of healing dermal wounds in rats.
Immunochemical distinction of Aloe vera, A. arborescens, and A. chinensis gels.
Aloe barbadensis extracts reduce the production of interleukin-10 after exposure to ultraviolet radiation.
Influence of Aloe vera on collagen characteristics in healing dermal wounds in rats.
Influence of Aloe vera on collagen turnover in healing of dermal wounds in rats.
Studies of aloe, VI. Cathartic effect of isobarbaloin.
[The action of an aqueous extract of Aloe barbadensis Miller in an in-vitro culture of Trichomonas vaginalis].
Biotherapy with the pineal inimunomodulating hormone melatonin versus melatonin plus aloe vera in untreatable advanced solid neoplasms.
Nitro chemopreventive effects of plant polysaccharides (Aloe barbadensis Miller, Lentinus edodes, Ganoderma lucidum and Coriolus versicolor).
The therapeutic potential of Aloe Vera in tumor-bearing rats.
In vitro angiogenic activity of Aloe vera gel on calf pulmonary artery endothelial (CPAE) cells
Isolation of cDNA for an NADP-malic enzyme from Aloe arborescens
Prevention of ultraviolet radiation-induced suppression of accessory cell function of Langerhans cells by Aloe vera gel components
Beneficial effect of Aloe on wound healing in an excisional wound model.
Acceleration of the alcohol oxidation rate in rats with aloin, a quinone derivative of Aloe.
Activation of a mouse macrophage cell line by acemannan: the major carbohydrate fraction from Aloe vera gel.
Isolation of a cDNA for a phosphoenolpyruvate carboxylase from a monocot CAM-plant, Aloe arborescens: structure and its gene expression.
A purgative action of barbaloin is induced by Eubacterium sp. strain BAR, a human intestinal anaerobe, capable of transforming barbaloin to aloe-emodin anthrone.
Studies of aloe. V. Mechanism of cathartic effect.
Studies of aloe. IV. Mechanism of cathartic effect.
Prevention of ultraviolet radiation-induced suppression of contact and delayed hypersensitivity by Aloe barbadensis gel extract.
Rhein and aloe-emodin kinetics from senna laxatives in man.
Pharmacokinetic-metabolic studies with 14C-aloe emodin after oral administration to male and female rats.
Some pharmacological actions of aloe extracts and Cassia abbreviata on rats and mice.
Effects of low molecular constituents from Aloe vera gel on oxidative metabolism and cytotoxic and bactericidal activities of human neutrophils
Studies of aloe. III. Mechanism of cathartic effect.
An anti-complementary polysaccharide with immunological adjuvant activity from the leaf parenchyma gel of Aloe vera.
[Effects of aloe extracts, aloctin A, on gastric secretion and on experimental gastric lesions in rats].
Effect of water extracts of aloe and some herbs in decreasing blood ethanol concentration in rats.
Aloe vera
Comparative evaluation of aloe vera in the management of burn wounds in guinea pigs.
The glucomannan system from Aloe vahombe (liliaceae).
The Aloe vera phenomenon: a review of the properties and modern uses of the leaf parenchyma gel
7. Clinical Trails
Heart Disease
Prevention of Atheromatous Heart Disease
Lowered Blood Pressure
Immunological Benefits: Cancer, Tumours, HIV & AIDS
A Study of 29 AIDS Patients
Cancer Research
Aloe Vera & AIDS Research
Aloe vera may mimic zidovudine without toxicity
Antimetastatic Properties of Aloe Juice
Aloe Mannan, Significant Antitumor Efficacy
Antimutagen of Aloe plants
Diabetes
Aloe vera & gibberellin, anti-inflammatory activity in diabetes
Normalized Blood Glucose Level
Antidiabetic activity of Aloes: preliminary clinical & experimental observations
Aloe vera-anti-edemic & analgesic activity in diabetes
Gastrointestinal Disorders
Colitis & Crohn’s Disease
Research - Gastric Ulcers
Research - Ulcers, Stress Related
A double-blind trial of a celandin, Aloe Vera & psyllium laxative preparation in adult patients with constipation
Studies of Aloe III. Mechanism of Cathartic Effect
Aloe Vera to treat gastrointestinal Problems
Research - Duodenal Ulcers
Aloe Reduction In Ulcers, Erosions & Hemorrhages in the Stomach
Radiation, Burns & Frostbite
Aloe vera gel hindered wound healing of experimental second-degree burns: a quantitative controlled study.
Experimental & clinical observations on frostbite
Alvagel as a therapeutic agent in the treating of radiation burns
Beneficial effects of aloe in wound healing
The external use of Aloes
Treatment of experimental frostbite with pentoxifylline & Aloe vera cream
Psoriasis
Management of psoriasis with Aloe vera extract in a hydrophilic cream: a placebo-controlled, double-blind study.
Skin Disorders/Inflammation
Anti-inflammatory activity of Aloe vera against a spectrum of irritants
Wound healing. Oral and topical activity of Aloe vera.
Processed Aloe vera administered and topically inhibits inflammation
Uses of Aloe in treating leg ulcers & dermatosis
Anti-inflammatory and wound healing activity of a growth substance in Aloe vera.
Anti-inflammatory & wound healing properties of Aloe vera
Effects of topical medications on the healing of open pad wounds in dogs
Antiinflammatory activity of extracts from Aloe vera gel.
Skin Disorders Virus: Bacteria, Fungi & Parasites
Dental Disorders
Aloe Vera Gel Toothpaste
Aloe in Dentistry
Why Aloe may work
Use of Whole-Leaf Aloe
8. Patent
Herbal Skin regeneration and method
A method for skin regeneration comprising
Description
Background of the Invention
Summary of the Invention
Detailed Description of the Invention
U.S. Pat. 6, 030, 622
Herbal Extract composition and method
(2000) with immune boosting capability
Background of the Invention
Field of the Invention
Description of the Background Art
Summary of the Invention
Detailed Description of the Preferred Embodiments
Extract Preparation
Preparation of Extract of ARUM ALOE
Preparation of Extract of POMEGRANATE.
Preparation of Extract of TEA.
Preparation of Extract of HIBISCUS.
Preparation of Combined Extracts of ARUM and POMEGRANATE
Preparation of Combined Extracts of ARUM, POMEGRANATE, TEA and HIBISCUS
In Vitro Blast Transformation of Lymphocytes
From Normal Patients
In Vitro Blastogenesis of Peripheral Blood Lymphocytes from Patients With Renal Failure
Stimulation of Cytokine Production in Normal Persons
In Vitro Inhibition of gp 120 Binding to MT-4 Cells Measured with OKT4A Monoclonal Antibody.
In Vitro Inhibition of gp 120 Binding to MT-4 Cells Measured with Anti-gp 120 Monoclonal Antibody.
Chemical Analysis of Combined Extracts
Aloe vera gel toothpaste
United States Patent 5, 294, 434 March 15, 1994
Summary of Invention
Detailed Description
United States Patent 5,989,560 November 23, 1999
Herbal intestinal tract cleanser
Field of the Invention
Background of the Invention
Summary of the Invention
Detailed Description of the Preferred Embodiments
Aloe vera ointment
United States Patent 4,725,438 February 16, 1988
Field of the Invention
Background of the Invention
Summary of the Invention
Objects of the Invention
Description of the Preferred Embodiment
Summary of the Achievements of the Objects of the Invention
Decongestant composition containing aloe vera
Background of the Invention
Field of the Invention
Description of the Prior Art
Summary of the Invention
United States Patent: 6,004,558
Technical Field
Background of the Invention
Summary of the Invention
Detailed Description of the Invention
Separation of primary isoflavones using chromatographic techniques
Method for extraction and removal of genistein, daidzein, formononetin and biochanin
Anti-cancer activity or isoflavone free cell extracts
Treatment of a sixty two year old male diagnosed with prostate cancer
Herbal Remedies
Summary of the Invention
Brief Description of the Drawings
Detailed Description of a Preferred Embodiment
Herbs and Preparation of Formulations
Patient Selection
Herbal Preparation and Dosage
Results of the Study
Effect of Discontinuing Usage of the Present Invention
Conclusion
United States Patent 5,904,924 May 18, 1999
Green nutritional powder composition
Summary of the Invention
Detailed Description of the Present Invention
National Composition extracted from Plants used in the treatment of Cancer
Background of the Invention
Objectives of the Invention
Summary of the Invention
Detailed Description of the Invention
Test Substances
Cell Culture
Cytotoxicity Assay
Fresh Tumor Specimens
Turmeric & Aloe Vera for treating health ailments
Summary of the Invention
U.S. Pat. 4591, 387 (1986)
Aloe Vera Leaf Processor
Brief Description of the Invention

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Detailed Description of the Invention
U.S. Pat. 5, 215, 760 (1993)
Detailed Description of the Preferred Embodiments
U.S. Pal 4,309,180 (1983)
Cosmetic facial preparation containing aloe vera
Detailed Description of the Preferred Embodiment
U.S. Pat. 6,013, 259 (2000)
Aloe Vera Ophthalmic Solution
Background of the Invention
Brief Summary of the Invention
Detailed Description of the Invention
Allantoin
Extract of Lavender
Topical Compositions
Pharmaceutical/Cosmetic Compositions
Cleaning Compositions
Weighing
Washing
Filleting
Grinding
Homogenization
pH Adjustment
Selective Precipitation
Centrifugation
Weighing/Storage
Tray loading
Drying
Milling
Blending
Storage and Exportation
Moderate or Medium Filtration
(Filtration Using A Medium Filter)
Fine Filtration (Filtration Using A Fine Filter)
Ultrafiltration/Concentration
Ultracentrifugation
Low Speed Centrifugation
Dialysis
Anion Exchange Chromatography
Size Exclusion Chromatography
Step-Wise Filtration
Preparation of Bulk Pharmaceutical
Mannan (â€œBPMâ€)
Pilot Scale Sizing of Bulk Pharmaceutical
Mannans by Ultra-filtration
Purification and Depyrogenation of FBA using
Chromatography with subsequent Molecular
Sizing (DFBA)
Anti Viral Effects of Different Factors Obtained by
Chromatographic Separation of FBA
Cells and Culture media:
Reagents and Preparation:
Protocol of Mouse Pulmonary Inflammation
Model
Myeloperoxidase (Mpo) Assessment of Lavage Fluid and Tissues
Lavage Fluid
Tissue MPO Assessment
MPO Reaction
Mouse Croton Oil Ear Inflammation Model
Protocol for Cytokine Analysis from Macrophages
Mouse TNF-α. Assay In Biological Fluids
Centrifugation of Suspension of Results Obtained from Bioassays used to Evaluate Different Factors
Results from Factors using Methods as Described
IL-6 Production:
IL-1 α. Productions:
Microparticulate Factor From FBA and No Production
Macrophage Activation and Anti-inflammatory Activities
Epitheleal Cells (EC) Proliferation
IL-6 Assay
RAW Cells Secreted Interleukin-6 in Response to FBA
ECMF Stimulated IL-6 Production
Anti-Inflammatory Activities of Soluble Factors
Filtration with 0.1 μm Filters of Microparticle Factors
Factors of FBA Sized Filtration through Syringe Filters of Various Pore Sizes
Carbohydrate Content in the Filtrate
Factors Sized and Isolated by 5 μm Filtration and No Assay
Topical Anti-Inflammatory Activity of Freeze-Dried Aloe Vera Extract and FBA
Other Related Applications
Summary of the Present Invention
Herbal Formulations
Basliqun Kabir
Preparation
Administration
Uses and indications
Sufuf Dama
Hab Hiltit
Hab Soranjan
Hab Shabyar
Halwa-i-ghaikwar
Qurs Tankar
Kuhl-ul-jawahar
Kuhl Roshania
Kushta Abrak Safaid
Kushta Busud
Kushta Khubs-ul-hadid
Kushta Khar Mohra
Kushta Tila Kalan
Kushta Faulad
Kushta Gaodanti
Kushta Nuqra
Majun Talkh
10. Cultivation Practices
   General details
   Origin and distribution
   Propagation
   Harvest
   Yield
   Cultivation Practices
   Soil
   Climate
   Land Preparation
   Propagation
   Planting
   Manuring
   Irrigation
   Weeding
   Diseases and Management
   Harvesting the Yield
11. Extraction Process
   Organ used for manufacture
   Timing of Leaf Harvest
   Leaf Harvesting and Handling
   General process outline for Herbal extract
   Cleaning and size reduction:
   Solvent extraction:
   Solvent recovery
   Spray dried extract
   Soft extract
   Phytochemicals:
   Effluent treatment:
   Aloe Vera Gel Process
   Highlights
   Guidelines for production
   Process outline
   Process conditions:
   Advantages of wholeleaf cold process
   Strategy for process control
   Patent details
   Extraction Process
   Processing Steps
   Extraction process of Aloe Gel and Powder
12. Patents and Know-how
   Description
   Background of the Invention
   Brief Summary of the Invention
   Detailed Description of the Invention
   Preparation of the Aloe Vera gel eye drops:
   Summary of the Invention
   Objects of the Invention
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