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HERBANUTRACEUTICALS HEAL & REGAIN THE HUMAN HEALTH

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ABSTRACT

The universe healing power and regaining the health by natural product therapy while using the one concept that is herbanutraceuticals. It is a broad term which protect human being from diseases causing stage just like umbrella that protect from rain. It is a scientific discovery with growing consumer interest in health enhancing foods, it also follows ICH guidelines to harmonize the products to ensure the quality, safety, and efficacy. herbanutraceutical is the combination of three term herbal, nutrition and pharmaceutical means a formulation of natural product that used to benefited for study growth and awareness of the targeted marketing efforts and they have advantages over the medicine because they avoid side effects with normal nutritive value and in market they are available in medicinal form which prevent, heal and treat the acute and chronic diseases such as gout, diabetes, hypertension, osteoporosis, etc. The aim of the article is to provide the current knowledge about the application of various nutraceuticals in different diseases of the patient and also regain the body health and promote our immune system. herbanutraceutical is a natural medical approach oral dosage of food suppliments of standardized nutrient and blue print of regulating the normal body function.

KEYWORDS: Herbanutraceuticals, Heal, Regain, Acute, Chronic, Standardized.

INTRODUCTION

Herbanutraceutical is a new weapon of treatment from herbal drugs those includes nutrition in food or part of food that provide medical or health benefit while including normal nutritive value and prevention and treatment of diseases[1] the exploration and exploitation of diseases feighting properties of phytochemicals are in herbal plants with nutrition. based on assumptions like to avoid side effects associated with medicines, live longer and increases

health value of our diet, herbanutraceuticals are being preffered[2] with the recent advances in medicals and nutrition sciences, natural products and health-promoting foods have received extensive attention from both health professionals and the public. New concept have appeared with this trend, such as nutraceuticals, phytonutrients and phytotherapy.[3,4]

Categories of herbanutraceuticals: Herbanutraceuticals are non-specific biological therapies used to promote wellness, prevent malignant processes and control symptoms. Nature is always a golden sign to show the prominent phenomena of co-existence.[5] Without plant, humans and other living organisms cannot live. Anyway, herbs especially medicinal herbs have constantly acted as an overall indicator of ecosystem health.[6] They are categorized as follows based on their chemical constituents.[7]

(a) Nutrients

(b) Herbs

(c) Dietary supplements

The idea of herbanutraceuticals

The herbanutraceuticals idea is composed from three term

1. 'herbal' [it is extracted from natural sources],

2. 'nutrition' [nutrition is the science that interprets the interaction of nutrients and other substance in food in relation to maintenance of growth, reproduction etc.]

3. 'pharmaceutical' [it is a drug therapy used to diagnose, cure, treat or prevent diseases]

The herbanutraceuticals products are recognized for their health benefits like increase the health beneficial and natural dietary supplement, so do not have unpleasant side effect, improve medical condition and health value and economically affordable.[8] They also avoid the risk of side effects, effect to reduce the risk of cancer, heart diseases and other related ailments, arthritis, muscular degeneration, diabetes, arthritis etc. Beneficial of herbanutraceuticals from consumer's point of view.

- They promote the health.
- May help us live longer.
- May help us to avoid particular medical conditions and side effect of drugs which we used in ill condition and provide psychological benefit.
- They may easily available and economically affortable.
- Obtaind from natural resources so absence of side effect.

- New drug approval process is easy and cheap.
- There is no need of pre-clinical study.
- They have quality, safety and efficacy.

Herbanutraceuticals: Some common herbs.[9]

Herbs	Common name	Therapeutic activities
Musa paradisiacal L. (musaceae)	Kela	High starch content
Aegle marmelos (rutaceae)	Wood apple	Increase utilization of glucose uptake or via the medication of enhanced insuline secreation
Mucuna pruriens L. DC4 (fabaceae)	kaunch	Seeds is used for treating intestinal gas, diarrhea, cough, rheumatic, diabetes, menstrual pain, tuberclosis
Mentha piperata L. (labiatae)s	Pipermint	Oil and dried leaves are used to treat stomach complaints and as a stimulants
Ocimum sanctum L. (labiatae)	Tulsi	Leaves are used as a condiment.
Annana squamosa L (annonaceae)	Sugar apple	Lower blood sugar level
Artemisia pallens wall (compositae)	Davana	Inhibit glucose re-absorption or increase in peripheral glucose utilization
Azadirachta indica A (Meliaceae)	Neem	Inhibit action of epinephrine on glucose metabolism resulting in increased utilization of pheripheral glucose and exhibits hypoglycaemic activity without altering the serum cortisol concentration
Andrographis paniculata nees (acanthaceae)	king of bitter	Has antioxidant activity and hypotriglycaeridemic effect
Alstonia scholaris R.Br (apocynaceae)	Chitvan	Used as a tonic to treat intestinal complaints, including warms
Ficus bengalensis L. (moraceae)	Bargad	Latex is used to heal craks in the feet
Cannavis sativa L, (cannabidaceae)	Bhang	Seeds used in manufacture of paints, soap
Centella asiatica urb (umbelliferae)	Brahmi	Used for sharp memory
Cestrum nocturnum L. (Solanaceae)	Rat –ki-rani	Used to treat antispasmodic and epilepsy
Citrus limon burmann. (rutaceae)	Nimbu	It is used as vitamin C and B1
Crinum defixum L. (amaryllidaceae)	Sukhdarshan	Juice from leaves is used to relieve ear-achne
Elaeocarpus ganitrus Roxb. (elaeocarpaceae)	Rudraksh	Bark and leaved used to treat inflammation of the gums
Aegle marmelos Corr. (rutaceae)	Bael	Digestion, appetizer, dysentry

List of products Herbanutraceuticals[10,11]

Product from herbanutraceuticals	Category	Contents	Manufacturer
Calcirol D-3	Calcium supplement	Calcium and vitamins	Cadila healthcare limited, Ahmedabad, India.
Proteinex	Protein supplement	Predigested protein, vitamins, minerals and carbohydrates	Pfizer Ltd, Mumbai, India.
Chaywanprash	Immune booster	Amla, ashwagandha and pippali	Daburindia Ltd.
Omega woman	Immune supplement	Antioxidants, vitamins and phytochemicals (e.g. lycopene and resveratrol)	Wassen, Surrey, U.K.
GRD	Nutritional supplement	Proteins, vitamins, minerals and carbohydrates	Zydus Cadila Ltd. Ahmedabad, India
Coral calcium	Calcium supplement	Calcium and trace minerals	Nature's answer, Hauppauge, NY, USA
Celestial healthtone	Immune booster	Dry fruit extract	Celestial Biolabs Limited
Amiriprash (Gold)	Good immunomodulator	Chyawannprash Avaleha, Swarnabhasma and RasSindur	UapPharma. Pvt. Ltd.

Herbanutraceuticals used in diabetes management

Diabetes mellitus is a metabolic disorder characterised by hyperglycaemic or high blood sugar. The World Health Organisation (WHO) recognises three main forms of diabetes mellitus: Type 1, Type 2, and gestational diabetes (occurring during preganancy).

- **Acacia arabica (Babul):** Acacia arabica family Leguminosae and it has been used to treat high cholestrol, diabetes. The powdered seeds of Acacia arabica and roots of Caedralluma edulis were adjministered in doses of 2-3 and 4g/kg body-weight to normal rabbit induced hypoglycaemic effect by initiating release of insulin of pancreatic cells.[12,13]

- **Alove vera (aloe):** Aloe vera family Liliaceae and 15 ml of aloe gel twice a days 44% reductions in blood sugar and blood triglycerides, had been unchanged by glibenclamide experience 48% drop in blood sugar and 52% drop in triglycerides after treatment with Aloe vera juice.[14,15]

- **Allium cepa (onion):** Allium cepa famiy Liliaceae and it contain sulphur compound 100gm of red onion resulted in a 89mg/dl reduction in fasting glucose level (4 hours later), fasting blood glucose was lowered by 145mg/dl in response to administration of insulin 4hours later.[16,17]

- **Cucurbita maxima (pumpkin):** Cucurbita maxima family Cucurbitaceae and its juice at a dose of 300mg/kg reduced plasma glucose at the end of treatment.[18]

• **Stevia rebaudiana (Bertoni):** Stevia rebaudiana family Asteraceae. It is a nutrient rich natural sweetest plant and its leave contain diterpene glycosides steviode, rebaudiosides A-F, steviolbioside and dulcoside which are responsible for sweet taste it is 250-300 times sweeter than table sucrose, heat-stable and well tolerate low PH-value. Stevia possess the ability to increase the insulin on cell membrane, increase the insulin production and lower post-prandial blood sugar both animals and humans.[19]

• **Aegle marmelos (Holy Fruit Tree):** It is of Rutaceae family and the proposed mechanism of action is that it increases utilization of glucose; either by direct stimulation of glucose uptake or via the mediation of enhanced insulin secretion[20] and also decreases the elevated glucose and glycosylated hemoglobin levels.[21] antihyperglycemic activity of the leaves in glucose induced hyperglycemic rat at an oral dose equivalent tp 250 mg/kg.[22]

• **Momordica charantia (bitter gourd):** It is Cucurbitaceae family, it may act increasing hepatic glycogen[23] ethanolic extract of M. charantia (200 mg/kg) showed an antihyperglycemic and also hypoglycemic effect in normal and STZ diabetic rats.[24] 10-15ml of Fresh fruit juice recommended for diabetics.

• **Plantago ovata (Isabgul Seed Husk):** It is of Plantaginaceae family, it treat diabetes. The effect of psyllium husk was studied in 34 men with type 2 diabetes and hypercholesterolemia given either placebo or 5.1g psyllium twice daily for eight weeks. Total cholestrol was lowered by 8.9% and LDL by 1% and postprandial rise of glucose was also reduced.[25]

• **Trigonella foenum-graecum: (Fenugreek):** It is of Papilionaceae family, It increased glucose-induced insulin release through a direct effect on the isolated islets of Langerhans. It has hypoglycemic activity.[26] Trigonelline, exerted a mild hypoglycemic effect 3-5g of seed powder is uesd to treat diabetes.[27]

• **Tinospora cordifolia (guduchi):** It is of Menispermaceae family various extract leaves of this plant were investigated for their blood sugar lowering activity and the plant have potent hypoglycemic activity.[28-29] It is reported that daily administration of either alcoholic or aqueous extract of T.cordifolia decreases the blood glucose level and increases glucose tolerance in rodents.

• **Pterocarpus marsupium (vijaysar):** It is of Papilionaceae family; different parts of the plant like bark, latex, etc. were investigated and reported to have hypoglycemic activity[30] bark and heartwood pf the plant were also used to lowering blood sugar activity.[31-32] Stem bark 32-50g for decoction is used to control diabetes.

• **Phyllanthus amarus (Bhuiawala):** It is of Euphorbiaceae family, it has hypoglycaemic activity and anti-oxidant activity whole plant with a dose of 5g/day for 10 days reduced blood sugar in diabetic rats and in non-diabetic subjects[33], 3-6g of powder of root, stem and leaf is used as a dose of phyllanthus amarus.

• **Eugenia jambolana (jamun):** Eugenia jambolana family Myrtaceae and it enhances serum insulin release mechanism[34] it also show blood glucose lowering activity of aqueous seed extract. Along with increases in haemoglobin and antioxidant activity in diabetic rats.[35]

• **Coccinia indica (kundru):** It is of Cucurbitaceae family. It supress glucose synthesis, and also have insulin secretagogue effect.[36,37] 3-6g powder of whole plant and 5-10ml juice is used to treat diabetes.

• **Caesalpinia bonducella (fever nut):** It is of Caesalpiniaceae family and it shows hypoglycemic and antihyperglycemic activities.[38] 1-3g of seed kernel powder is used to control diabetes.

List of herbanutraceuticals used as a anti-diabetic.

Plant	Family	Plant part
Artocarpus integrifolia Linn	Moraceae	Root barks
Abelmoschus esculentus Linn	Malvaceae	Fruits
Acacia arabica	Leguminosae	Seeds
Acacia modesta Wall	Fabaceae	Leaves
Adhatoda zeylanica Nees	Acanthaceae	Leaves and fruits
Aegle marmelos	Rutaceae	Root bark, fruits and leaves
Allium cepa	Lilliaceae	Bulbs
Aloe vera Linn	Lilliaceae	Leaves
Alpinia calcarata Rosc	Zingiberaceae	Rhizomes
Alpinia galanga Willd	Zingiberaceae	Rhizomes
Hibiscus rosa	Malvaceae	Whole plant
Morus indica	Moraceae	Leaves
Piper betle	Piperaceae	Leaves
Mucuna pruriens	Leguminosae	Whole plant
Coccinia indica	Cucurbitaceae	Leaves

Herbanutraceutical used in the treatment of Rheumatoid Arthritis

Rheumatoid arthritis is a complex disease involving many types of cells including macrophages T cell, B cell, Fibroblasts, lymphocytes etc.

Natural drug treat Rheumatoid arthritis

- **Boswellia** Boswellia serrate family Bursaraceae. Boswellic acid had specific inhibition of leukotriene synthesis via 5, lipooxygenase and carbooxygenase activity by blocking its translocation.[39,40]

- **Turmeric** Curcuma longa family Zingiberaceae the activity constituent of turmeric is curcumin which inhibit the synthesis of inflammatory PG's thromboxane without affecting prostacyclin synthesis thus help in anti-inflammatory activity[41] curcumin also inhibits cox-2 enzyme which is actually a pro-inflammatory substances.[42,43]

- **Willow** willow salix purpurea family salicaceae the main constituent is salicin a natural source of acetyl salicyclic acid (Aspirin) inhibit the production of PG's in the nerve and thus relieves pain and discomfort.[44,45]

- **Aloe barbadensis** aloe family liliaceae it is commonly known as aloe vera that contains acid compounds like anthraquinone, anthracene, cinanamic acid & anthranilic acid. Accordinging to researches anthraquinone has showed anti-inflammatory activities against arthritis. Anthranilic acid and anthraquinone both have potential against arthritic & articular rheumatic problem both of them block the biosynthetic activitiy of bradykinin. Which is able to develop pain & inflammation in arthritic patients.[46,47]

- **Ficus bengalensis** it is commonly known as banyan tree. It contains flavonoids, tannis, saponins & steriods that are able to behave as anti-rheumatic agent. These activities were observed in methanolic extract of the bark of banyan tree.[46]

- **Bosewellia serrata:** it is commonly known as shallaki it contains beta-boswellic acid. In gummy-oleo resins which have anti-inflammatory activities.[46,47,48]

- **Withania somnifera:** it is commonly known as ashwagandha its roots extracts shows anti-inflammatory activities and effect of root extract which was equivalent with the effect of 5mg/kg of hydrocortisone sodium succinate. According to research oral administration of root powder ashwagandha is effective in reducing arthritic problem.[46,47]

• **Zingiber officinale:** it is most useful herb commonly known as ginger. It is rich starch, fat, fibres, volatile oil. Oil has monoterpine, hydrocarbons, oxygenated mono & sesquiterpenes in which sesquiterpene lactones has anti-inflammatory property.[46,47]

• **Camellia sinensis:** it is commonly known as green tea. Its pharmacologically active components are polyphenols catechins & flavonols. This plant has showed the effect in reducing the risk of collagen induced arthiritis in the model of rats by decreasing in the serum level of tumors necrosis factor- a (TNF-albha) PGE 2, Interleukin-1beta & Interleukin-6 as well as reduced level of inflammation cytokines, gamma-interferon & cox-2.[47,47]

• **Boerhaavia diffusa:** it contains alkaloids glycosis, steriods, flavonoids & teriterpenoids, so this plant shows anti-inflammatory vactivities which works in cases of arthritis.[49]

• **Terminalia chebula:** it is commonly as haritaki. It is one of the component of triphala churna. It contains tannins, alkaloids, flavonoids, terpenoids, steroids, saponins, proteins & carbohydrates. According to research it has proven that it contain anti-arthritic activities.[46,47]

• **Samilax officinalis** it is known as S.officinal the aqueous extract proven that to have anti-inflammatory &/ analgesic property.[46]

Some herbanutraceuticals are used in insomnia [sleep disorders]: Overall, it is estimated that over 50% of the population will suffer from sleep disorder so many of natural product manufactured and marketed for a variety of sleep symptoms. The natural way without used of sleep medication there are certain herbanutraceuticals with treat insomnia.

• **Valerian:** it is a perennial herb that has long been held to sedative properties and extracted from dried root and rhizomes and active constituent is valerenic acid and amino acids[50] an efficacious dose is considered to be one which has the equivalent of 2 to 3 grams of dried root material. The preparation available in tablets ranging in dose from 300 to 600 mg/day and lesser extent in 2 to 4 ml tinctures.[51]

• **Chamomile:** it has a reputation as a natural aid for insomnia as also used for millennia the common use, supplement is generally considered to be soporific, rather than hypnotic, chamomile contains several compounds that might have therapeutic effects.[52] In laboratory studies, Apigenin demonstrates anxiolytic properties and appears to be a candidate for chamomile's effectiveness as soporific[53,54] recently completed examining the effect of

chamomile on sleep.[55] A recent study, 34 subjects were randommized to placebo or 270 mg of chamomile extract.[53]

- **Marijuana:** The marijuana plant can contain over 60 cannabinoids, some of which appear to be more bioactive than others[56] the use marijuna in the sleep disorders.

- **Kava Kava:** It is commonly known as piper methysticum and it has sedative and antxiolytic effects of the root from various substrains of this plant have been known for millennia. In animal models, one kavalactone, kavain, appeared to change sleep micro- and macroarchitecture compared to other sedatives.[57]

- **Cherries and cherry juice:** It has following effect it has to supporting to decreases in oxidative stress levels of inflammatory markers and muscle damage following exercise while enhancing muscle recovery.[58,59] It also used in sleep disorder.

- **Caffeine:** Caffeine is a pharmaceutical product and based on sleep therapeutics there is a wide array of sources for naturally occuring caffeine[60,61] most of the side effects of caffeine and minor and self-limited.

- **Aloe vera:** The aloe vera plant may be best known for sooting a bad sunburn, but at night, aloe vera exhales oxygen, increasing the amount of oxygen in the room this act of emitting oxygen means you'll get better sleep.[62]

- **Jasmine:** The sweet scent of jasmine is more than welcome when it comes to getting a good night's rest. The assistant professor of psychology at wheeling jesuit university, found that the odor of jasmine may lead to better sleep.[62]

- **Almonds:** Low magnesium levels can result in poor sleep and disjointed sleep cycle. To get a boost of magnesium, eat a handful of almonds before you go to bed. The magnesium will relax your muscle and tell the brain it's time for sleep. Almonds act as sleeping aid.[62]

- **Bananas:** Bananas can give your body boost of melatonin that you might be lacking. Bananas are rich in vitamin B6,and also just act as a magnesium supplement.[62]

- **Bacopa Monniera:** It is also known as brahmi it has antioxidant effect and it inhibit cholinesterase enzyme and antidepresessant effect.[63]

• **California Poppy:** Eschscholzia californica bind the affinity with GABA receptors and anxiolysis in animal models.[64]

• **Roseroot (Rhodiola Rosea):** It has ability to treat insomnia by taking 6 week 340mg or 680mg of standarised Roseroot.

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