

## **Fruits And Herbs Can Be Used as A Natural Health Supplement: A Review**

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### **ABSTRACT**

In all over the world, human beings swallow allopathic medicines frequently. Community consumes medicines with the help of pharmacist and not by taking concern of a doctor, which ultimately results in decreasing immunity and obliging life long diseases like diabetes, blood pressure, CVD, and the list continues. Due to the world's pandemic society had started thinking towards the healthy lifestyle. After this phase the demand of natural form of medicines including nutraceuticals and health supplements.

Many fruits and herbs like Apple, Kiwi, VALERIAN ROOT, holy basil, mint and so on help to cure various diseases like diabetes, CVDs, osteoporosis, atherosclerosis, cancer, cataract formation, autoimmunity diseases, blood pressure, depression, anxiety and so on. This review describes the functional component in above mentioned fruits and herbs and its ability to cure life long diseases. With the help of Food Safety and Standards (Health Supplements, Nutraceuticals, Food for Special Dietary Use,

Food for Special Medical Purpose, Functional Food and Novel Food) regulation it is also possible to design new product in the form of health supplement pills, powder, gummies, etc

**Key words:** health supplement, powder, life long disease, fruits, herbs

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### **INTRODUCTION**

The foremost concept of health supplement is before 3000 years by Hippocrates (460-377 BC), who is named as *father of medicine*. He avowed, "Let food be thy medicine and medicine be thy food." This notion is accustomed to anticipate the selection of the foods and its potential therapeutic benefits (Muredzi, 2015). Health supplements should not replace daily diet which in the form of balanced diet, though they benefit to human health in specific conditions as suggested by Scientists and health professionals (Valavanidis, 2016). According to FSSAI (India, 2006), 'Health supplements' are described as a food which are specially processed or formulated to satisfy particular dietary requirements which exist because of a particular physical or physiological condition or specific diseases and disorders and such products may be formulated in the form of powders, granules, tablets, capsules, liquids,

jelly or other dosage forms; and which are not represented for use as conventional foods. These supplements contain any plant, botanical extracts or vitamins and minerals or form of animal origins which will achieve the dietary requirements as well as to reduce the risk of diseases like cancer, cholesterol, CVDs, menopause symptoms, gastrointestinal problems and so on. In this review article, focus is on fruits i.e., apple and kiwi and herbs i.e., valerian root, holy basil, and mint.

### ***Apple***

In Apple, major constituents are water i.e., 85% and carbohydrate i.e., 14%, it is also potential source of minor components including vitamins (C and E), minerals (potassium) and polyphenols (flavonoids and phenolic acids) (Bondonno, *et al.*, 2017). According to Boyer & Liu, 2004, the potential health benefits due to consumption of apple is due to flavanoids and phytochemicals like phloridzin, quercetin, chlorogenic acid and catechin. Various authors like Raheema, 2020; Carrus, 2016; Ferretti, *et al.*, 2014 and Boyer & Liu, 2004 had proved by various clinical researches that daily consumption of apples reduces risk of various diseases like Alzheimer's disease, Cancer, Vascular Deaths, Diabetes, and Blood pressure. It also helps to increase metabolism, weight loss and so on, these all health benefits are due to presence of polyphenols present in it. Apple processing can be in the form of powder, juice or dried slices, though the fresh fruit will give wholesome nutrients. But processing is required for availability and convenience throughout year. Natural utilization of apple fruit can reduce side effects of allopathic medicines, which are taken on regular basis with potential health benefits.

### ***Kiwi***

Kiwi, having scientific name *Actinidia deliciosa* which is also known as Chinese Gooseberries as it was cultivated in China up to 19<sup>th</sup> Century. Now-a-days it is cultivated in New Zealand, USA and mid hills of India. Kiwi fruit has total 60 species, out of which 3 species are fundamental which are grown in New Zealand and Taiwan (Somawanshi and Pawar, 2022). Kiwi fruit comprises majorly moisture 83% and carbohydrates 14% out of which fibre is 3%. It contains minor constituents which fulfils most of the needs of daily value (DV) which includes vitamins like Vitamin C (83% of the DV), Vitamin E (9% of the DV) and Vitamin K (34% of the DV) and minerals like Folate (7% of the DV), Copper (15% of the DV), Potassium (4% of the DV) and Magnesium (4% of the DV) (Kubala 2022). Kiwi fruit encompasses of proteolytic enzyme viz., 'acidizing' which ease in protein digestion like bromelain and papain and hence improves health of digestive system (Kalsi *et al.*, 2022 & TYAGI, *et al.*, 2015). As seen from the above composition, kiwi fruit is rich in Vitamin C and Vitamin E and it also contains abundant of antioxidants like carotenoids,

phenols, flavones and flavanones which helps to avoid generation of free radicals (Richardson, *et al.* , 2018). It also possess anti inflammatory property and henceforth aids in curing long lasting diseases like CVD and cancer (Ragab, *et al.* , 2019). From the above researches by various author's, it can be extrapolated that kiwi fruit accustoms of important vitamins, antioxidants and phytochemicals which is required for normal and healthy lifestyle and also helps to heal dangerous diseases.

### **Valerian root**

Valerian belongs to “Valerianaceae” family, the word valerian is derived from latin word ‘*Valere*’ which means ‘*to be in good health*’ which was discovered by Greek Physicians (Limited, 2017). Valerian is endemic to Indian medicine from ancient times. Various part of valerian plant like root, flower, seed and rhizome shows different medicinal property like antispasmodic, antipsychotic, anti inflammatory, anti microbial, antioxidant and many more. As per the chemical analysis, the valerian plant are rich in flavonoids, saponins, tannins, alkaloids which when added in proper concentration confer the medicinal effect (Devi and Rao, 2014).

Root part of valerian plant is a medicinal plant which is of extreme economic importance and is widely used in food, drugs and cosmetic industries due to its unique flavour (Chen *et al.*, 2015). Valerian root has exceptional composition comprising of volatile oils, alkaloids, monoterpenes, sesquiterpenes, free amino acids and lignans. Valerian root possess various pharmacological properties like antidepressant as a sleeping pill or controlling anxiety, gastrointestinal carminative, stomach and intestine cramping and nervous headache (Valeriana officinalis Monograph, 2004; Pilerood & Prakash, 2013; Patočka & Jakl, 2010 and Tahvilian *et al.*, 2014). Utilization of this herb will help to release stress as well as common disease like headache, *etc.*

### **Holy basil**

Holy basil is a member of “Lamiaceae” family whose scientific name is *Ocimum sanctum*. Holy basil is called as “Vishnupriya” by virtue of wife of lord “Vishnu.” From the herbs specie's it is known as “Queen of herbs” which is mainly of two types green Tulsi and black Tulsi and used widely in Hindu puja because of spirituality that increases ultimate goal of getting closer to God. In the view of medicinal and nutraceutical benefits, it is used since 1000 BC as an ayurvedic medicine for treating cough and asthma (Bhooshitha *et al.*, 2020). Different parts of Holy basil like seeds, roots and leaves possess therapeutic properties. Leaves is widely used for preparation of health supplement or ayurvedic medic medicine or nutraceutical due to presence of typical components like phenols, terpenes, alkaloids which are responsible of aroma of Tulsi (Bhateja and Arora, 2012). By using GC technique its typical chemical composition can be estimated, its volatile oil contains 45 compounds majorly

basilare rosmarinic acid, linalool, methyl chavicol, methyl cinnamate. Nutraceutical properties are due to rhythmol, eugenol, camphor, Vitamin A and Vitamin C (Chahar 2017). According to various authors including (Verma 2016, Sah *et al.*, 2016; Pandey *et al.*, 2021 and Kaur *et al.*, 2020), there is unique active component composition in *Ocimum sanctum* which helps for quick relief, as well as it can heal from the root of disease. It contains eugenol, urosolic acid, oleanic acid, ethanolic extract due to which it has anticancerogenic activities. Holy basil resists to form free radicals i.e., it acts as an antioxidant as well as anti-inflammatory due to presence of Polyphenol Rosmarinic acid.

Holy basil acts a quick relief for many diseases like cough, fever, wound healing, common cold, asthma by increasing immunity of the body as it possesses antimicrobial, antiviral, antibacterial and antiallergic properties. Food technologists tries to incorporate holy basil in to commonly consumable snacks including mathri and khakhra, which resulted into increase in macro and micronutrients and overall acceptability (Sharma,2019).

### **Mint**

Like holy basil, mint also belongs to “*Lamiaceae*” family. It has 15-20 plant species from which Spearmint (*Mentha spicata*) is comparable. Cultivation of mint is being done all over the world, chemical analysis of essential oil of Spearmint (*Mentha spicata*) is being done then it is concluded that as the country changes chemical composition in terms of active components also changes. In Indian mint’s major constituent is piperitone oxide (almost 70%) followed by carvone, carvacrol, trans-carveol, limonene, 1,8-cineole, camphene, p-cymene, dihydrocarvone, pulegone,  $\beta$ -caryophyllene, germacrene D, menthone,  $\alpha$ -pinene, and linalool are noticeable component (Menyiy *et al.*, 2022). From ancient times, mint is frequently used as a home remedy for medication of viral infections like cough, asthma, fever, obesity, jaundice, and digestive problems (Mahendran, *et al.*, 2021). Mint is used as a flavouring agent for preparation of many cuisines, commonly known are tea, cocktail, mayonnaise, soups, salads, ice-cream, lamb dishes, candies, and similar things. Besides flavouring agent due to its cool sensation, it is also widely used as a natural aromatic substance in cosmetics and pharmaceutical industry especially in toothpaste and mouth wash (Olsen 2023) (Naureen, et al. 2022). Absorption of sugars and flavonoids impedes due to presence of phytoconstituents like Alkaloids, steroids, and tannins owing to which possess nutraceutical and medicinal properties *viz.*, cardioprotective effects due to antioxidant, antiobesity, anticancer, antiparasitic, antimicrobial, and antidiabetic effects (Menyiy *et al.*, 2022; Abayechaw and Yoseph, 2021; Best 2022; Arshad *et al.*, 2023 and Naureen *et al.*, 2022). Mint contains abundant amount of phytonutrients and biologically active components which is declared as

'functional food' (Hutsol *et al.*, 2023), but limited literature is available on utilization of mint as health supplement or nutraceuticals.

**Conclusively**, as per study of different herbs and fruits, there is scope of manufacturing of different products by utilization of natural sources. These natural sources are rich in many functional components including flavonoids, phytochemicals, phenols, terpenes, alkaloids, saponins, tannins. Due to presence of active components, it possesses many medicinal properties due to which it can heal the body naturally without any adverse side effects.

This review paper focuses on the nutritional benefits of five fruits and herbs including apple, kiwi, valerian root, holy basil, and mint. According to legal standards, health supplements are those which contain the functional component and or combination of any fruit or herb and its any part including stem, root, leaf, seed, fruit as defined in the standards. These parts can be combined in the form of powder, pill, gummies, chewing gum, soft gel capsules to form health supplement or nutraceutical which can be utilized to treat or cure the disease from the root. Society is now becoming acquainted with the healthier option for them. Utilization of these fruits and herbs is irreplaceable. The products which are available in the market are in the form of either extracted active component or use of single herb or fruit, combination of these fruits or herbs will result in supplementing nutritional product to heal and increase the immunity of the body.

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