

CHARKOKTA HARIT VARGA AND IMMUNITY

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ABSTRACT

Ayurveda, the Aryan science of life, is considered to form a part of the mighty Vedas. As a science of practical use, it solves the problems of life through maintenance of health, Lengthening of life, relief from painful inactivity in the day of disease, satisfactory enjoyments of the pleasure of life in childhood, youth and old age. *Vyadhikshamatva* is a resistance against the loss of the integrity, proportion, and interrelationship amongst the individual's *doshas* (bioenergies) and *dhatu*s (tissues). *Ahara* plays important role in maintaining the immunity of person. Spices and salad are considered as an integral part of Indian diet. Indians are using spices in their diet since ancient period, not because spices only enhance the taste of food but also helps in improving the immunity of person owing to their nutritional values.

Acharya Charka has described spices and salad in *Harita varga*. This article aims to elaborate role of *harita varga* in augmenting the immunity of person.

KEYWORDS: *Vyadhikshamatava*, *Harita Varga* and *Immunity*.

INTRODUCTION

Ayurveda, the Aryan science of life, is considered to form a part of the mighty Vedas. As a science of practical use, it solves the problems of life through maintenance of health, Lengthening of life, relief from painful inactivity in the day of disease, satisfactory enjoyments of the pleasure of life in childhood, youth and old age.

Vyadhikshamatva in Ayurveda is not simply immunity against a particular infectious agent or disease such as typhoid, measles or rubella for which modern medicine offers "immunizations". Rather, *Vyadhikshamatva* indicates a resistance against the loss of the integrity, proportion, and interrelationship amongst the individual's *doshas* (bioenergies) and *dhatu*s (tissues). There are 2 types of *Vyadhikshamatva*- 1. *Vyadhi-balavirodhitvam*-a resistance to disease or immunity against disease i.e. the one which mitigate the manifested diseases. 2. *Vyadhi-utpadakapratibandhaktva*- A counterattacking strength of body that prevents the manifestation of diseases or reoccurrence of disease. ^[1] *Ahara* plays important role in maintaining the immunity of person.

Ahara (food) is composed of *Panchmahabhuta* and is believed to be *Prana* (life), which means that the compatible diet is needed for maintaining homeostasis of our body and mind, i.e., our diet has a direct impact on our immune system. For keeping one's self healthy and live longer without any risk of diseases, a person should consume a balanced diet. *Ahara* (food) is the most significant aspect as food contributes to building of body cells and enables to fight off disease. *Yuktikrit Bala* (acquired immunity) is achieved with a proper diet. Consumption of proper food is one of best way to augment *Bala* and *Ojas* Wholesome food is one of the crucial measures for strength, longevity, happiness. The food that we consumed need to be *Pustivardhak* (nourishing), *Medhya* (increasing intellect) and *Balya* (increasing strength and immunity).

Nutritious food regimen supports the body throughout the life for healthy growth and development. The body requires proper food and nutrition for any cells to function and the same goes with cells of the immune system as well. A balanced diet containing all the essential nutrients helps to improve the immune system and recruit an effective response against pathogens. Nutrients have an impact on the immune system initiating changes in functions of immune cells and gut micro-biome. Lack of appropriate diet and nutrients weakens the immune cells and antibodies. Also, micronutrients deficiencies were identified in deterioration of immunity. ^[2]

Spices and salad are considered as an integral part of Indian diet. Indians are using spices in their diet since ancient period, not because spices enhance the taste of food but also helps in improving the immunity of person owing to their nutritional values. *Acharya Charka* has described spices and salad in *Harita Varga*. This article aims to elaborate role of *harita Varga* in augmenting the immunity of a person.

AIM AND OBJECTIVES

1. To study properties of *Aahara Dravya* mentioned in *Harita Varga*
2. To study benefits of *harita varga* in overall enhancement of immunity of person.

MATERIALS AND METHODS

Ayurvedic literature like various Samhita (*Charaka Samhita*, *Sushruta Samhita*, *Ashtang Hridaya* and *Astanga sangraha*) related to this topic are studied. Various articles and journals have also been searched.

DISCUSSION

Acharya *charaka* has describes 12 *ahara varga*, *Harita Varga* is one of them. It includes different green leafy vegetables and tubers. Health benefits of these vegetables are describes as follows.

Table no. 1^[3]

<i>Harit Varga Dravya</i>	Properties
<i>Adraka</i> /Ginger (<i>Zingiber officinale</i>)	Appetizer, digestive stimulant, aphrodisiac, cures constipation, vitiation of <i>vata</i> and <i>kapha</i>
<i>Jambira</i> (<i>citrus medica</i>)/ Lemon	Appetizer, digestive stimulant, sharp, fragrant, mouth cleanser, alleviator of <i>kapha</i> as well as <i>vata</i> and anti-infective.
<i>Mulaka</i> / Radish (<i>Raphanus raphanistrum</i>)	Tender radish alleviates vitiated <i>doshas</i> . [<i>Bala mulaka</i> is <i>laghu</i> , <i>ushna</i> , and useful in <i>gulma</i> , <i>kasa</i> , <i>kshaya</i> , <i>shwasa</i> , <i>vrana</i> , <i>netraroga</i> , <i>kantharoga</i> , <i>swarabheda</i> , <i>mandagni</i> , <i>udavarta</i> and <i>pratishay</i>] When overgrown, it provokes these <i>doshas</i> . [<i>Mahat mulaka</i> is <i>ruksha</i> , <i>ushna</i> , <i>katu</i> , <i>swadu vipaka</i> , <i>sarva doshakara</i> , <i>guru abhishyandi</i>] if overgrown <i>mulaka</i> fried with <i>ghrita</i> or oil, it alleviates <i>vata dosha</i> . When dried, it alleviates <i>kapha</i> and <i>vata</i> .
<i>Surasa</i> (<i>ocimum sanctum</i>) (<i>Tulasi</i>)	<i>Surasa</i> cures hiccough, cough, poisoning, dyspnea and pain in chest. It aggravates <i>pitta</i> and alleviates <i>kapha</i> as well as <i>vata</i> and removes foetid odours.
<i>Yavani</i> (<i>Trachyspermum ammi</i> Sprague), <i>Arjaka</i> (<i>ocimum gratissimum</i>), <i>sigru</i> (<i>Moringa oleifera</i>), <i>Saleya</i> (<i>Trigonella foenum-graecum</i>) and <i>Mrushtaka</i> (<i>Brassica nigra</i>)	Provoke <i>pitta</i>
<i>Gandira</i> (<i>Euphorbia antiquorum</i>), <i>Jalapippali</i> (<i>commelina salicifolia</i>),	Sharp, hot in potency, pungent in taste and unctuous. They alleviate <i>kapha</i> and <i>vata</i> .

<i>Tumburu (Xanthoxylum alatum) and Shringavera (zingiber officinale)</i>	
<i>Bhustruna (cymbopogon citratus)</i>	Unaphrodisiac, pungent ununctuous, hot in potency and cleanser of mouth.
<i>Kharahva (trachyspermum roxburghianum)</i>	Alleviates <i>kapha</i> , <i>vata</i> and disorders of urinary bladder.
<i>Dhanyaka (coriandrum sativum), Ajagandha (Gynandropsis gynandra) and Sumukha</i>	Appetizer and fragrant, not very pungent, do not provoke <i>doshas</i> . [<i>Dhanyaka</i> has diuretic properties]
<i>Grinjanaka/ Carrot (Daucus carota)</i>	Bowel binding and sharp. It is beneficial in piles and diseases due to the vitiation of <i>vata</i> and <i>kapha</i> . It is used as fomentation and as a food for such people who do not have pitta in excess.
<i>Palandu/Onion (allium cepa)</i>	Aggravates <i>kapha</i> and alleviates <i>vata</i> but it does not alleviate <i>pitta</i> . It is heavy and aphrodisiac. It promote strength and appetite.
<i>Lasuna/Garlic (allium sativum)</i>	It cures infection, obstinates skin diseases including leprosy, <i>kilasa</i> type of skin disease, disease due to the vitiation of <i>vata</i> and abdominal tumour. It is unctuous, hot in potency, aphrodisiac pungent and heavy. In dried form, it alleviates <i>kapha</i> and <i>vata</i> . [it also has <i>rasayana</i> properties]

Adraka/Ginger- Since childhood we have known to the fact that going natural is the key to good health. From Grandma's mysterious solutions for that exemplary *adrak wali chai* or to the *tulsi adrak kadha*, this marvelous ingredient was the ideal fix for most occasional ailments like cold, cough, fever and influenza. In addition to the truth that ginger helped in treating seasonal infections, it changed into a fantastic solution for similarly enhancing digestion and metabolism. Consumption of *adraka* with a *saindhava* before meal is beneficial for proper digestion of meal. Ginger enriched with various chemical constituents, including phenolic compounds, terpenes, polysaccharides, lipids, organic acids, and raw fibers. The ginger is mainly attributed to its phenolic compounds, such as gingerols and shogaols, which are beneficial for health. A gathered investigations have demonstrated that ginger retains multiple biological activities, including antioxidant, anti-inflammatory, antimicrobial, anticancer, neuroprotective, cardiovascular protective, respiratory protective, antiobesity, antidiabetic, antinausea, and antiemetic activities.^[4] The ginger is efficient in the prevention of nausea, dizziness, and vomiting as symptoms of motion sickness or travel sickness (kinetosis), as well as for postoperative vomiting and vomiting of pregnancy, which has been well documented and proved in numerous high-quality clinical studies.^[5]

Jambira- Vitamin C- Lemons are an excellent source of Vitamin C which is an antioxidant and important for immune function and skin health and also has antibacterial and antiviral qualities. Intake of fruits high in vitamin C is linked to reduced risk of heart disease. The isolated fibers from citrus fruits decreases blood cholesterol level, and the LDL (bad) cholesterol. Lemons contain small amounts of iron, but they are a great source of vitamin C and citric acid, which can increase the absorption of iron from other foods and prevent anemia. Lemon also contains potassium- A diet rich in potassium can lower blood pressure levels and have optimistic effects on health of heart. Lemon is also a source of Vitamin B6, which is responsible for producing white blood cell and T cells, which regulate immune response. It also helps in producing the protein interleukin-2 to direct white blood cell activity.^[6]

Mulaka /Radish- Radishes have high levels of vitamin C more than a fresh tomato. The peppery taste of radishes is evidence of the presence of glucosinolates/isothiocyanates. A red-skinned cultivar contains Anthocyanins. Cooking destroys the enzyme myrosinase, which converts the glucosinolates to isothiocyanates, so eating raw (as with radishes) is best. Glucotaphanin is converted into sulforaphane which is isothiocynate, is also being useful with regard to treating *Helicobacter pylori* infection and blocking gastric tumour formation.^[7] Radishes are rich in antioxidants and minerals like calcium and potassium which helps in lowering a high blood pressure and reduced the risks for heart disease. Radish is a good source for anthocyanins that keep our hearts functioning properly. It is also a good source of natural nitrates that improve blood flow. It is rich source of vitamin C, folic acid, and flavonoids, so helps in improving immunity. radish helps to cleanse our liver and stomach, thus helps in detoxification. Radish is also beneficial in hypothyroidism due to its sulphur content.^[8]

Tulasi – According to Ayurveda, *tulsi* is known as “The Incomparable One,” “Mother Medicine of Nature” and “The Queen of Herbs,” and is revered as an “elixir of life” that is without equal for both its medicinal and spiritual properties.^[9] Oil of *Tulsi* is a good source of calcium, vitamin C and volatile substances e.g. eugenol, tannins, flavonoids, ursolic acid, etc.^[10] Many studies reveal that tulsi has a unique combination of actions that include: Antimicrobial (including antibacterial, antiviral, antifungal, antiprotozoal, antimalarial, anthelmintic), mosquito repellent, anti-diarrheal, anti-oxidant, anti-cataract, anti-inflammatory, chemopreventive, radioprotective, hepato-protective, neuro-protective, cardio-protective, anti-diabetic, anti-hypercholesterolemia, anti-hypertensive, anti-carcinogenic,

analgesic, anti-pyretic, anti-allergic, immunomodulatory, central nervous system depressant, memory enhancement, anti-asthmatic, anti-tussive, diaphoretic, anti-thyroid, anti-fertility, anti-ulcer, anti-emetic, anti-spasmodic, anti-arthritis, adaptogenic, anti-stress, anti-cataract, anti-leukodermal and anti-coagulant activities. Hence, tulsi is recommended as a treatment for a range of conditions including anxiety, cough, asthma, diarrhea, fever, dysentery, arthritis, eye diseases, otalgia, indigestion, hiccups, vomiting, gastric, cardiac and genitourinary disorders, back pain, skin diseases, ringworm, insect, snake and scorpion bites and malaria.^[9]

Dhanyaka- Coriander leaves are rich in Vitamin C and Vitamin E and both these nutrients along with Vitamin A can help improve the immune system gradually. Vitamin C can make white blood cells work efficiently and also beneficial in the absorption of iron. Coriander leaves and seeds are full of vitamin K, which plays an important role in blood clotting, also prevent osteoporosis. Coriander is full of antioxidants and reduced the risk of cancer. it act as diuretics, also reduced the risk of atherosclerosis or heart diseases by lowering LDL Cholesterol. coriander helps activate the enzymes that help the body process blood glucose effectively.^[11]

Palandu/Onion – *Allium cepa* have been recognized for their medicinal value since ancient time period. Onion were stated to exhibit strong antiviral activity. Onion is a good source of flavonols and organosulfur compounds which impart medicinal property to these plants. It contains flavonoids such as anthocyanins and flavanols. It also contains flavanols like Isorhamnetin, Kaempferol Myricetin, and Quercetin, also Organosulfur compounds like quercetin and allicin which helps in inhibition of viral infection. Onion is enriched with Quercetin as compared to other flavanols. Quercetin and kaempferol as main flavanols and these are found to affect the growth of many viruses. Quercetin, a main flavanol compound in onion and garlic, have been reported to inhibit the translation and replication of RNA of many human viruses Quercetin derivatives can increase zinc uptake, which can inhibit RNA Polymerase. It was proved that Polio-virus, Rhinovirus, SARS-CoV, Hepatitis C virus, Ebola virus, Enterovirus were affected in the host cell by quercetin derivatives. These bioactive compounds can hamper virus attachment to the host cell. They can alter transcription and translation of viral genome inside the host cell and hence also affect the viral assembly. Inhibition of viral entry into the cell and inhibition of RNA polymerase have also been postulated as mechanism of antiviral actions of this vegetable. Flavanoids present in onion

and garlic have a strong inhibitory effect on virus multiplication. Phytochemicals present in these plants have been observed to block the formation of protein and genetic material in the virus.^[7]

Grinjanaka /Carrot- Carrot is a taproot which is enriched with beta-carotene. β -carotene could reduce the hepatosteatosis induced by the hepatitis C virus (HCV) by inhibiting RNA replication. β -carotene inhibits reactive oxygen species through its activity of provitamins A, it has been confirmed to have a positive effect on the progression of the hepatitis virus (HBV and HCV), preventing the development of carcinoma hepatocellular. Beta-carotene is an influential antioxidant that can reduce inflammation and boost immune function by increasing leucocytes in the body.^[7]

Lasuna /Garlic - Organosulfur compounds like allicin, diallyl trisulfide and ajoene are main chemicals which impart antiviral property to garlic.^[12] Garlic has shown anti-viral, anti-bacterial, antifungals and antioxidant capacities. Additionally, it has anti-atherosclerotic and anti-cancer properties. Garlic is stated to scavenge oxidants, rise superoxide dismutase, catalase, glutathione peroxidase, and glutathione levels, as well as inhibit lipid peroxidation and inflammatory prostaglandins. Garlic decreases cholesterol synthesis by inhibiting 3-hydroxy-3-methylglutaryl-CoA. It also inhibits LDL oxidation, platelet aggregation, arterial plaque formation, decrease homocysteine, lower blood pressure, and increase microcirculation, which is important in diabetes, where microvascular affects heart disease and dementia risks.^[13]

CONCLUSION

Ayurveda has mainly highlighted on promotion of health and prevention of diseases. *Aacharya Charaka* has mentioned that one should consume a food in daily routine which maintain the health and prevent unborn diseases. *Aahara* is the most important factor for nourishment of life and maintenance of health. Consumption *aahara* mentioned in *Harita varga* proves beneficial in the enhancement of immunity of person due their unusual chemical compositions and nutritional values.

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