

Historical and spiritual perspectives of vegetables in India

Vegetables have been integral part of human life during worship, spirituality and cultural festivals. History of vegetables in Vedic and ancient India is very vast but this important information is scanty and rarely recorded. At global level, 400 vegetable crop species are documented, out of which 80 species of major and minor vegetables reported to have originated in India. Vegetables are key pillar of commercial horticulture and/or agriculture for better farm income, food and nutritional security of India. Vegetables are important source of medicinal and nutraceutical foods. India is ranked second in area (10.86 million ha) and production (200.45 million tonnes) of vegetables in the world. This article would provide few indicative aspects on history of vegetables and their various spiritual and ritual significances for mankind.

Historical significance of vegetables

All ancient historical aspects, knowledge and wisdom related to development of science of vegetables is shown in Vedas (Rigveda- C. 3700 BC, Yajurveda, Atharvaveda- C. 2000 BC) by Veda Vyasa and other texts, viz. Kautilya's Arth-sastra (C. 300 BC), Amarsimha's Amarkosh (C. 200 BC), Patanjali Mahabhashya (C. 200 BC), Krishi-Parashar (C. 100 BC), Sangam literature of Tamilians (200 BC-1000 AD), Agnipuran (C.400 AD), Varahmihira's Bharatsamhita (C. 600 AD), Kashyapiyakrishishukti (C. 800-900 AD), Surpala's Vrikshayurveda (C. 1000 AD), Someshwars Deva's Manosollas (1126-1138 AD), Chavundarya's Lokopkaram (C.1108 AD), Sarangdhara's Upvanvinoda (C. 1300 AD), Bhavprakash- nighantu (C. 1500 AD), Chakrapani Mishra's Viswavallabha (C. 1580), Tazuk-i- Jahagiri (C. 1600 AD), Dara Shikoh's Nuskha Dar Fanni- Falahat (C. 1650 AD), Jaichand's Diary (1658-1714 AD), Rajasthani Manuscript (1877 AD), Watt's Dictionary of Economic Products of India (1889-1893 AD), Asian Agri History Foundation Nene's Glimpses of the Agricultural Heritage of India (2014). The archeological and paleontological evidences of cultivation of vegetables

in India can be traced to the Harappan and Indus valley civilization.

The major food stuff from vegetable kingdom were classified into various group from centuries, like suka (cereals-awned grain/dhanya), kudhanya (inferior quality of cereals), simbi (pulses), saka/virudh (vegetable) and phula (fruit) depicted in Ayurveda (Charak Samhita). Vegetables are important for nutrition, also have significant spiritual, ritual, magical and medicinal importance to mankind. In the Yajurveda, 71 (47 Dicotyledonous, 23 Monocotyledonous and 01 Gymnospermic) plant species, belonging to 32 botanical families, [Poaceae occupying the first place, Fabaceae the second and Moraceae in the third]; including tree, shrubs and herbaceous species (Urvaruka: cucumber- *Cucumis sativus*, Cucurbitaceae; Kyambu/ *Puskara parna*: lotus-*Nymphaea pubescens*, *Nelumbo nucifera* and *Nymphaea nouchali*, Nymphaeaceae) are mentioned which are being grown as vegetable even today.

Various Sanskrit texts have described propagation methods of horticultural plants in ancient India by cutting and grafting. Seasonal grafting may be done according to the plant phenology as plants have not yet got branches grafted in Shishir (January-February), however, plants have fully grown branches grafted in Hemant (December-January) and plants have large branches grafted in rainy season, grafted joint portion of (root stock and scion) must be covered with coating of mud (Brhatsamhita, 55. 4, 5). Grafting is most widely used to develop 'pomato' (grafting of tomato scion on rootstock of potato) and 'brimato' (Grafting of tomato and brinjal scion on rootstock of wild brinjal) for management of soil borne bacterial wilt around the world by scientists even today.

Kashyapiya Krishi Shukti (A treatise on agriculture) by Kashyap (C. 800 AD) is an excellent text on agriculture and horticulture covering various aspects of brinjal,



Cucumber (urvaruka)
vine laden with fruits



Lotus with seeded fruit

patolika (pointed gourd), pumpkin gourd, kustumbari (coriander/dhanyaka), suran, sangabera (ginger) and turmeric grown by farmers. He also discussed biological parasitic vermins, ash, dust and lime water for pest management of vegetable crops. Planting should be done line-by-line in the fields which have already received sufficient manure of goat-dung or cow dung or the tendrils of creepers (Kashyapiya Krishi Shukti, 6.435-36).



Yam



Brinjal

An ancient Sanskrit text Vrikshayurveda (the science of plant life) by Surpala (C 1000 AD) mentioned 170 species of agriculture and horticulture plant with their detailed package of practices. It described seed extraction method from ripened dried fruits and seed treatment with milk, cow dung, honey and vidanga (goose berry/emblica).

Amarakosa (C. 300-500 AD) Sanskrit text by Amarsinha contained information on ecology, biodiversity, taxonomy, cultivation and economic botany with reference to horticultural crops. It is mentioned that Varivarga (Anupa/apsuja) meaning place with plenty of water where aquatic plants (hydrophytes) grow, e.g. Kumudva, aquatic place where lotuses grow; nadimatika (irrigated fields) and devmatika (non-irrigated/rainfed fields). The Varivarga includes various types of lotuses and waterlilies such as Saugandhika- light red lily; Rakta sandhyaka - red lily; Kumuda - white lily; Indivara, Kuvalaya (*Nelumbo nucifera*), Padma, Nalina, Rajiva, Pundarika (*Nymphaea nonchali*) - white lotus. Vaisya varga (commercial crops) includes cereals, pulses and vegetables like cowpea, onion, pumpkin and gourds.

Arthasastra (C. 300 BC) by Acharya Kautilya mentioned methods of seed treatment, viz. seeds are treated with heat; vegetative propagules like stalks are smeared at the cut end with honey, ghee and pig's fat mixed with cow-dung; bulbous roots are smeared with honey and ghee; and stone like seeds to be smeared with cow-dung before sowing.

Aine-e-Akbari by Abul Fazal documented detailed account of fruits and vegetables grown in India. He

mentioned 18 crops that are cultivated with their seasonal cropping calendar e.g. summer season (suran/yam), rainy season (pointed gourd, kachalu, singharas) and winter season (carrot) crops. An epic the Ramcharitmanas by Goswami Tulsidas rightly narrated that pumpkin gourd (kumhada) and banana (kadali) were grown for welfare of human beings.

Lokopkara (for the benefits of people) by Chavundarayas (1015-1042 AD) verse II contains key recommendations for management of vegetable pests, viz. patanga - locusts, jabhya - weevil, tarda - borer, vyadaras - rodents. It is mentioned that cow urine, kunapajala and anti-insect botanical herbal such as asafetida, sweet flag, atis root, blackpeeper, vidange (emblica), marking nut seeds, black mustard (sarsap) and indrayan (cucumber) were used for pest management by vegetable growers.

Vishvavallabh by Shri Chakrapani Mishra (C. 1577 AD) mentioned about the contagious nature of plant diseases on vegetable crops. It has described integrated crop health management technique for diseases like granthika (root knot), jyoti (chlorosis) and rupaka (mildew of lotus) by protection techniques. Rainy season is the best time recommended for sowing all types of seeds and planting trees, autumn and spring are mediocre seasons for the sowing of seeds (Visvavallabha, 4.1).

Nusrat Dar Fanni-Falhat (the art of agriculture) the text by Mughal prince Dara Shikoh (1650 AD) described idea of drip irrigation (keeping two water-filled pitchers with small hole at the bottom) and application of inorganic fertilizer (nitre) on vegetable vines which are most widely opted practice by vegetable farmers. It is also mentioned that cultivation of legume vegetable baquila (broad bean-Vicia faba) as an intercrop for green manuring is noteworthy.

Krishi Parashar by Parashar (C. 400 BC) is the first textbook on agriculture which has mentioned of good agricultural practices (GAP) in farming, knowledge of varietal characteristics of seed, storing of the seed, importance of good seeds, development of farm implement and associated scientific knowledge of astrology for seed sowing and other time bounded farm operations. Weeding should be done twice in Asvina to make farms free from weeds for good yield (Krishi Parasara, 189, 192).

Krishi Gita (agricultural verses) is a text on indigenous practices on cultivation of vegetables amaranths, ash gourd, banana/plantain, bottle gourd, brinjal, chilli, cocoyam bean (lablab bean), cowpea, elephant foot yam, fenugreek, ivy gourd, melon, snake gourd, taro, turmeric, watermelon and yam are mentioned.



Pumpkin



Water chestnut



Banana's pseudostem

Table 1. Spiritual importance of vegetables

Crop	Botanical name	Use in worship/rituals
Ash gourd, White gourd, petha (Kushmand)	<i>Benincasa hispida</i>	Offered to <i>Kushmanda Devi</i> during fourth day of Navratra/Devipaksha to revert from the evil eye (kusmanda, synonymous of Devi Kusmanda, the Mother Goddess and the creator of the universe)
Cucumber (Urvaruka, Indrayan)	<i>Cucumis sativus</i>	Offered as naivedyam to Lord Krishna during the celebration of 'Janmastami' (birthday of Lord Krishna). Urvaruka is mentioned as symbol of liberation from death in 'Mahamritunjay Mantra'. Offered to ladies during fasting on vratas 'Sete Santan' for welfare of off-spring and her husband
Pumpkin (Sitaphal, Kumhda)	<i>Cucurbita maxima</i>	Flower offered to pitras during pitra paksha/shraddh ceremony for protection
Bottle gourd (Lauki)	<i>Lagenaria siceraria</i>	Used as holy pot for worshipping of deities. Offered to groom by his son-in-law during marriage ceremony as token of love and respect
Brinjal (Egg plant)	<i>Solanum melongena</i>	Offered to bride by her parents during the marriage ceremony in 'Oli bharai' as sign of blessing
Water chestnut (Water fruit/trapa)	<i>Trapa natans</i>	Offered as naivedyam to Lord Ram during the celebration of 'Ramnavmi' (birth day of fall on Lord Ram last day of Navratra/ Devipaksha in month of chait)
Padma (Lotus)	<i>Nelumbo nucifera</i>	Offered to goddess of power Ashtbhuja Devi (Adi Shakti), goddess of knowledge Saraswati, and Lord Vishnu (God of srijan)



Indian bean (lablab bean)

History of science and technology for production of vegetables used in vedic and ancient time translated into English and other languages for dissemination of knowledge through publication as various journal articles in Asian – Agri - History and Glimpses of the Agricultural Heritage of India (C 400 BCE - 1700 CE) by Nene (2014) which would be of tremendous value to the scientists, extension officials and farmers of India who face the challenges of sustainable vegetable production under abrupt weather conditions/changing climatic scenario.

Spiritual significance of vegetables

The Puranas state that vegetables have been integral part of human life, worship, spirituality and culture point of view (Matsyapurana, 59.16; Padma Purana, 1.28.18-22). Visnudharmottara Purana describes that by offering flowers to deities, one gets blessings and leads propitious, prosperous, and auspicious life. The worship of trees and vratas in India can be traced to the Indus valley civilization. Vegetables are found in many epics, scripts, legends, folktales, songs or even in proverbs, similes and metaphors. Some old common proverbs to indicate phytogeographic distribution and traditional properties of vegetable eg. "karela neem chadha" i.e. bitter gourd (*Momordica charantia*) plant climbing on a

neem (*Margosa*) tree can be still more bitter. The proverb is to signify wisdom and knowledge of a plant and its distribution to a region. Some old taboo/rituals and spiritual ceremonies play vital role for conservation of plant species. Some details of important religious and ritualistic knowledge of plants are discussed in Table 1.

Vegetable plant products, e.g. lotus (*Nelumbo nucifera*), brahmkamal (*Saussurea* spp.), turmeric (known as sobhna due to its golden colour-*Curcuma longa*), ash gourd (kushmand- *Benincasa hispida*), brinjal (*Solanum melongena*), cucumber (urvaruka- *Cucumis sativus*), water chestnut (singharas), bottle gourd (alaby- *Lagenaria siceraria*), Shivlingi (due to shape of seeds like 'Shiva-linga' in wild cultigens of cucurbits- *Diplocyclos palmatus*), Marorphali (due to shape of twisted fruit- *Helicteres isora*) are associated with gods and goddesses as their symbols so that these are used in worshipping and offered to deities (gods and goddesses) during religious ceremony and fasting days as presented in the table. Urvaruk (Cucumber) is designated as symbol of Mahakal/immortality.

The belief about origin of certain plants from the body of gods and deities attracts special spiritual significance to the species, viz. lotus (padma)- the naval region of Prajapati (Lord Vishnu). Execution of yajna maintains the balance of five major elements (sky, air, fire, water, earth) for sustainable crop production. In various rituals, cereals grains and legume seeds (Garmut-Vigna adenantha; Masa-Vigna mungo), are commonly used in 'samidhas' (Shakla) offered to the deities in yajna.

For further interaction, please write to:

A N Tripathi (Scientist), Division of Crop Protection, ICAR-IIVR, Varanasi, Uttar Pradesh 221 305. *Corresponding author email: antripathi_patho@rediffmail.com