



# Vedic Economy Vis-À-Vis Plant Invasion In The Erstwhile India

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## Abstract

This communication delves into the historical tapestry of ancient Vedic agriculture. It highlighted the adoption of exotic crop species for sustainable agriculture in Vedic period of India. As many as exotic 07 species (cereals and millets), 05 species (legumes), 08 species (oil and fibre yielding) and 14 species (miscellaneous ones) appear bioprospected by the Vedic people of India for agricultural produce in view of sustainable economy, apart from the indigenous crop species of Indian origin. Their origins are traced to continents, countries, islands and specific geographical regions of both New and Old Worlds. The three Vedas are *viz.* Rigveda, Yajurveda and Atharveda are studied critically to accrue the said information in the context of plant invasion in Vedic period of India, apart from Vedic economy.

**Key Words:** Vedic Economy, Crops, Vedas, Plant Invasion.

## Introduction

Agriculture system in India has early start at about 5000 BC. Domestication and plants and simultaneously animals is reported by more or less in the same period (*cf.* Mulage, 2017). Obviously, history of Indian agriculture can be traced since Vedic period. The Aryan invaded the erstwhile Indian territory and settled in the 'Sapta Sindhava' region which presently corresponds Eastern Rajasthan, Punjab and the Western region of present-day state of Uttar Pradesh in India. This region included seven rivers *viz.*, Jhelum, Chenab, Ravi, Beas, Sutlej with Indus and Saraswati. The Aryans invaded Indian territory around C.1500 BCE. Initially, they were pastoralist and gradually with passage of time. They adopted agriculture and settled life. They cleared forests and started tilling in the aforesaid fertile region. The Vedic period started from C.15 BCE and ended C.500 BCE (Roy, 2009; Vivekananda, 2011). The Vedas *viz.*, Rigveda, Yajurveda, Samveda and Atharveda composed during Vedic period of India, containing specific details of agriculture, apart from other aspect of human life. They inform about crop species, their cultivation, manuring and allied technologies of the time. Vedas have been investigated in different context by earlier research workers, however, the present author intended to reveal plant

invasion (bioinvasion) based on exotic crop species and their economy in Vedic period. The results of this in-depth study are being communicated in this account.

## Methodology

Information about Sanskrit plant names of crop species is borrowed from: (i) Rigveda Samhita (Wilson, 1850), (ii) Rigveda Samhita (Sharma, 2013), (iii) Plants In Yajurveda (Sarma, 1989), (iv) Shukla Yajurveda Samhita (Shastri, 2007), (v) Hymns of Atharveda: Vol.I-II (Griffith, 1968), (vi) The Atharveda (Sanskrit Text With English Translation) (Devi Chand, 1995). The Sanskrit plant (crop) names are equated with the recent botanical (Latin) names. These are also ascertained for their exotic status consulting relevant taxonomic literature as mentioned against each species in the Table I-IV. The results are interpreted in view of bioinvasion in the Vedic period of India as also economy of the said period.

## Results And Discussion

The Vedas must not be considered simply as books of prayers to gods, spells and incantations. They are also source of rational and scientific elements of knowledge and wisdom of sages of Vedic period. The present author examined critically the Vedas in the perspective of bioinvasion in ancient India and the results are interesting (cf. Patil, 2024, a,b,c). The Vedas contain Sanskrit plant names of crops cultivated in the Vedic period of India. Apart from indigenous crop species, certain exotic crop species are also formed a part of information. These are evaluated from the standpoint of bioinvasion in the ancient erstwhile India, the results of which form the basis of subject matter. Rajiv Kamal (1988) estimated total number of species 99 in Rigvedas, 82 in Yajurveda and 288 in Atharveda. While tracing the elements of Vedic economy particularly based on exotic plant or crop species, various useful assemblages turned out. The exotic crop species pertaining to cereals and millets pertained to 07 species and 07 genera of the family Poaceae. The leguminous crops are revealed belonging to 05 species and 05 genera of the family Papilionaceae. It is also possible to record oil (exclusively) or oil as well as fibre-yielding sources. These are 08 taxa belonging to 07 species, 05 genera and 05 families. It is possible also to notice various crop species useful as edible fruits, vegetable, spice, etc. These turned out to 14 species, 13 genera and 10 families. These are hailed from various continents, countries, islands and specific geographical regions of both New and Old Worlds such as: Asia (Excl.India) (10), Europe (09), Africa (08), America (03), Mediterranean region (06) and China (03). The figures in parenthesis denote number of species. Certain others merely shared a single each e.g. Australia, Fertile Crescent, Trancaucasia, Balkan Peninsula, Middle East, Arabia, Asia Minor, Java, Japan, West Indies, Persian Gulf, Caspian Sea Region and Caucasus Mountains, Tropics and Warm Subtropics.

The above resume, however, is confined to the exotic plant or crop sources exclusively. Apart from these, some indigenous or non-exotic plant or crop sources were also appeared lending economic support during Vedic period. Roy (2009) reported such sources e.g. (i) *Echinochloa frumentacea* Link. (Shyamaka), (ii) *Phaseolus radiata* Linn. (Mudga), (iii) *Phaseolus mungo* Linn. (Masa) and (iv) *Saccharum officinarum* Linn. (Iksu) particularly in Yajurvedic period. Singh (2008) also documented economic bioresources in Vedic period. He limelighted the sources especially during the period of Yajurvedic and Atharvedic periods e.g. (i) *Echinochloa frumentacea* Link. (Shyamak), (ii) *Saccharum officinarum* Linn. (Iksu) and (iii) *Oryza sativa* Linn. (Shali). He

also recorded such sources during Atharvedic period e.g. (i) *Limonia acidissima* Linn. (Kapitthak), (ii) *Myristica fragrans* Houtt. (Jatiphal) and (iii) *Piper longum* Linn. (Pippali). Parmar (2023) mentioned total 12 crops species particularly in Yajurveda inclusive of both exotic and indigenous ones.

The four Vedas viz., Rigveda, Yajurveda, Samavedas and Atharveda are generally meant as prayers to various Vedic gods, recitations at the time of sacrifice, source of chants, charms and magical spells respectively. Apart from these, there is voluminous literature about economy of the said period of time in the earstwhile India. They are reflections of intellectual activity of the ancient sages. They mirror mastered art of agriculture. They also contain information regarding crop rotation, use of self-fertilizing crops, easy access to seeds, natural manures, self-sufficient system, preservation of seeds apart from rearing cattle for dairy products, etc. (Aithal, 2022; Vivakananda, 2011). The Vedic people regarded farmers close to God, being near to nature (Mulage, 2017). During Vedic period, agriculture was thought neither as an industry nor as a means to make profit (Aithal, 2022). Drastic changes in thought and actions with the passage of time are observable in practice in modern era. This trend is discernible all over the world, nay it has become necessary in the view of the enactments like patenting and CBD.

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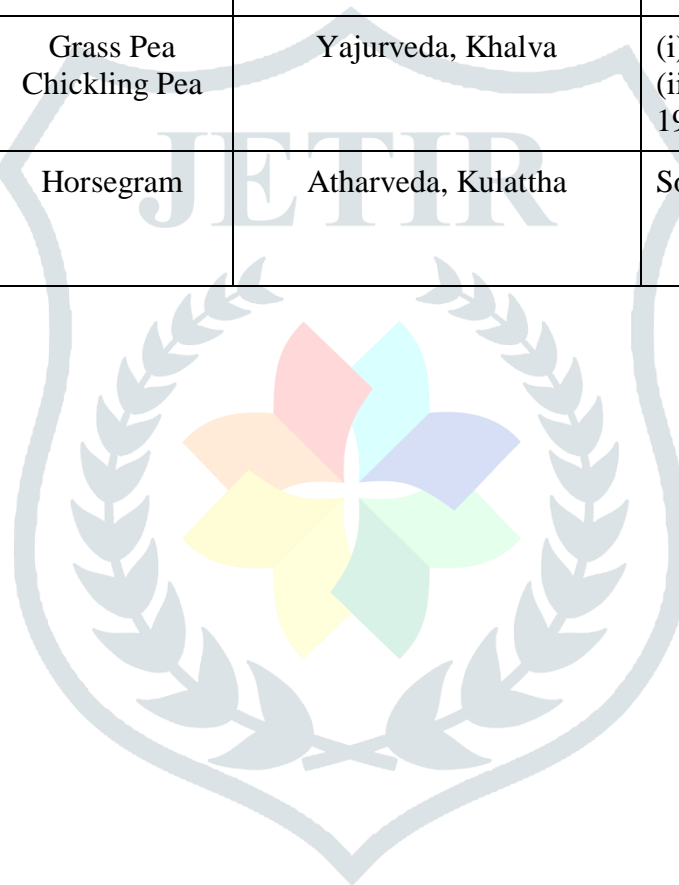
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**Table-I: Exotic Cereals And Millets: Vedic Period**

Sr. No. (1)	Plant Species & Family (2)	Common English Name (3)	Ancient Scriptures & Common Crop Name (4)	Nativity & Reference (5)
1.	<i>Hordeum vulgare</i> Linn. Poaceae	Barley	Rigveda, Atharveda, Yajurveda, Yava	Europe & North America: Dar <i>et al.</i> , 2002.
2.	<i>Triticum aestivum</i> L. Poaceae	Wheat	Rigveda, Atharveda, Yajurveda, Godhuma	Fertile Crescent: Singh & Nigam, 2017; Patil, 2019.
3.	<i>Eleusine coracana</i> (L.) Gaertn. Poaceae	Finger Millet	Rigveda, Atharveda, Yajurveda, Balbaja	(i) Africa: Singh & Nigam, 2017. (ii) Tropical Africa: Gaikwad & Garad, 2015.
4.	<i>Setaria italica</i> (L.) P. Beauv. Poaceae	Foxtail Millet	Rigveda, Yajurveda, Priyangu	(i) Near East (China): Singh & Nigam, 2017. (ii) East Asia: Naik, 1998.
5.	<i>Panicum miliaceum</i> L. Poaceae	Proso Millet	Yajurveda, Anu	(i) Asia (Excl. India): Kaul, 1986. (ii) Trancaucasia & China: Singh & Nigam, 2017.
6.	<i>Zea mays</i> L. Poaceae	Maize	Yajurveda, Susya	(i) Central America: Purseglove, 1968. (ii) South America: Stewart, 1972. (iii) Mesa America: Janick, 2013.
7.	<i>Coix lachryma-jobi</i> Linn. Poaceae	Job's Tears	Yajurveda, Gavedhuka Gavidhuka	Tropical Asia: Singh <i>et al.</i> , 2015.

Table-II: Exotic Lesum Crops: Vedic Period

Sr. No. (1)	Plant Species & Family (2)	Common English Name (3)	Ancient Scriptures & Common Crop Name (4)	Nativity & Reference (5)
1.	<i>Cicer arietinum</i> L. Papilionaceae	Chickpea	Rigveda, Yajurveda, Chanaka, Chanak, Khalva	(i) Mediterranean Region: Shetty & Singh, 1987. (ii) South Europe: Patil, 2019.
2.	<i>Lablab purpureus</i> (Linn.) Sweet Papilionaceae	Hyacinth Bean	Yajurveda, Atharveda, Khalva	Tropical Africa: Debnath & Debnath, 2017.
3.	<i>Lens culinaris</i> Medicus Papilionaceae	Lentil	Yajurveda, Masur	Central Europe, Mediterranean Region & West Africa: Patil, 1995.
4.	<i>Lathyrus sativus</i> L. Papilionaceae	Grass Pea Chickling Pea	Yajurveda, Khalva	(i) Balkan Peninsula: Kislev, 1989. (ii) South Europe & Western Asia: Helback, 1965.
5.	<i>Macrotyloma uniflorus</i> (Lam.) Verdc. Papilionaceae	Horsegram	Atharveda, Kulattha	South-East Asia: Patil, 2019a.



**Table-III: Exotic Oil & Fibre Yielding Crops: Vedic Period**

Sr. No. (1)	Plant Species & Family (2)	Common English Name (3)	Ancient Scriptures & Common Crop Name (4)	Nativity & Reference (5)
1.	<i>Sesamum indicu</i> Mill. (Syn.S.orientale L.) Pedaliaceae	Sesame	Rigveda, Yajurveda, Atharveda, Tila, Jartila, Til	Affica: Dogra, 2011.
2.	<i>Linum usitatissimum</i> L. Linaceae	Flaxseed	Rigveda, Atharveda, Avasti, Atasi	(i) Mediterranean Region: Patil, 2019b. (ii) Europe: Dar <i>et al.</i> , 2002.
3.	<i>Brassica juncea</i> (L.) (Zern. & Coss.) Brassicaceae	Chinese Mustard, Brown mustard, Leaf Mustard	Atharveda, Yajurveda, Atharveda, Abayti, Abhaya, Asuri, Sarsapa	(i) Middle East & Neighbouring Region: Prakash, 1980. (ii) Eastern Europe & China: Spect & Diedarichson, 2001.
4.	<i>Ricinus communis</i> Linn. Euphoraceae	Castor	Atharveda, Eranda, Tajadbhanga	(i) Tropical Africa: Yadav & Sardesai, 2002. (ii) Africa: Bailey, 1949.
5.	<i>Brassica campestris</i> Linn. var. <i>rapa</i> Linn. Brassicaceae	Field Mustard, Turnip Mustard	Atharveda, Nivibharya	Mediterranean Region: Almeida, 1996.
6.	<i>Brassica campestris</i> Linn. var. <i>sarson</i> Prain Brassicaceae	Yellow Sarson	Atharveda, Ping	Mediterranean Region: Almeida, 1996.
7.	<i>Brassia nigra</i> (Linn.) Koch Brassicaceae	Black Mustard	Atharveda, Kilasnashan	Europe: Naqshi & Javeid, 1987.
8.	<i>Gossipium herbaceum</i> L. Malvaceae	Levant Cotton	Yajurveda, Karpasa	(i) Arabia & Asiaminor: Bailey, 1949. (ii) Afria & Asia: Purseglove, 1968.

**Table-IV: Exotic Miscellaneous Crops: Vedic Period**



Sr. No. (1)	Plant Species & Family (2)	Common English Name (3)	Ancient Scriptures & Common Crop Name (4)	Nativity & Reference (5)
1.	<i>Ananas comosus</i> (L.) Merr. Bromeliaceae	Pineapple	Rigveda, Parayati	(i) Tropical America: Bailey, 1949. (ii) America: Sorenson, 2005.
2.	<i>Moringa oleifera</i> Lam. Moringaceae	Drumstick	Rigveda, Shobhanjana, Shigru	America: Singh & Srivastava, 2000.
3.	<i>Lagenaria siceraria</i> (Mol. Standl.) Cucurbitaceae	Bottle Gourd	Atharveda, Yajurveda, Alabu	Africa: Singh & Nigam, 2017; Patil, 2019b.
4.	<i>Benincasa hispida</i> (Thunb.) Cong. Cucurbitaceae	Wax Gourd, White Gourd	Atharveda, Apaskambha	(i) Java: Patil, 1995; 2003. (ii) Japan & Java: De Candolle, 1959.
5.	<i>Vitis vinifera</i> L. Vitaceae	Grapes	Atharveda, Madhavi, Madhavati	(i) South-East Europe To West Indies: Patil, 2019b. (ii) West Indies: Gaikwad & Garad, 2015.
6.	<i>Phoenix dactylifera</i> L. Arecaceae	Dates	Yajurveda, Kharjura	(i) Persian Gulf: Patil, 2019a. (ii) Africa: Bailey, 1949.
7.	<i>Ziziphus mauritiana</i> Lam. Rhamnaceae	Indian Jujuba	Yajurveda, Kvala, Badara	(i) Australia: Veerasamy & Arumugan, 2014. (ii) Tropics & Warm Subtropics: Martin <i>et al.</i> , 1987.
8.	<i>Citrus limon</i> (Linn.) Burm. f. Rutaceae	Lemon	Yajurveda, Jambir	South-East Asia: Yadav & Sardesai, 2002.
9.	<i>Luffa acutangula</i> (Linn.) Roxb. Cucurbitaceae	Angled, loofah	Atharveda, Koshvila	Tropical Asia: John, 1891.
10.	<i>Nigella sativa</i> Linn. Ranunculaceae	Black Seed	Atharveda Keshi	(i) Eastern Mediterranean Region: Patil & Dhale, 2013. (ii) Europe: Bailey, 1949.

Sr. No. (1)	Plant Species & Family (2)	Common English Name (3)	Ancient Scriptures & Common Crop Name (4)	Nativity & Reference (5)
11.	<i>Trapa spinosa</i> Roxb. [Syn. <i>Trapa natans</i> Linn. Var <i>bispinosa</i> (Roxb.) Makino] Trapaceae	Water Chestnut	Atharveda, Shafak	Europe: Kak, 1990.
12.	<i>Ziziphus jujuba</i> Mill. Rhamnaceae	Common Jujub	Yajurveda, Badar	Subtropics & Warm Temperate Zone: Martin <i>et al.</i> , 1987.
13.	<i>Cannabis sativa</i> L. Cannabaceae	Mariahuana, Marijuana, Hemp	Rigveda, Atharveda, Yajurveda, Bhang	(i) Central Asia: Chandra Sekar, 2012. (ii) Caspian Sea Region & Caucasus Mountains: Patil, 2019.
14.	<i>Cucumis melo</i> Linn. var. <i>melo</i> Cucurbitaceae	Cantaloupe, Muskmelon	Rigveda, Atharveda, Urvruk	(i) Asia (Excl. India): Stewart, 1972; Singh & Nigam, 2017.

