

ISSN: 2278-9529

# GALAXY

International Multidisciplinary Research Journal

*May 2016 - Vol. 5, Issue- 3*

**Editor-In-Chief: Dr. Vishwanath Bite**

[www.galaxyimrj.com](http://www.galaxyimrj.com)

About Us: <http://www.galaxyimrj.com/about-us/>

Archive: <http://www.galaxyimrj.com/archive/>

Contact Us: <http://www.galaxyimrj.com/contact-us/>

Editorial Board: <http://www.galaxyimrj.com/editorial-board/>

Submission: <http://www.galaxyimrj.com/submission/>

FAQ: <http://www.galaxyimrj.com/faq/>

## Agricultural Knowledge in Ancient India

**Yogendra Pal Singh Solanki**

Asst. Professor

Dept. of Ancient Indian History and Culture

I.O.P. vrindavan, Mathura

### **Abstract:**

Farming has been the basis of almost all the civilizations of the world and ancient Indian civilization has not been an exception to that fact. Excavations throughout this land have proved that advanced methods of agriculture had been adopted here long ago. Indian scriptures give more weightage to farming in comparison to other means of livelihood. The reason behind considering many trees, plants, mountains and rivers as gods and goddesses and worshipping cow and earth as mother, was that all of them were helpful in agriculture. In the present paper, I shall try to illustrate that Indian culture has given the greatest importance to agriculture since time immemorial.

**Keywords: Agriculture, Scriptures, Excavation, Plough, Fertilizers, Socialization, Occupation, Archaeological.**

It was the discovery of farming that transformed the barbaric nomadic life of early humans into a stationary civilized life. All the river valley civilizations that flourished in ancient times were based on agriculture. The requirement of water for growing crops, compelled the early humans to settle around the river banks. That is the reason why almost all the ancient civilizations have the similar story to tell us. Presently agriculture is the major base of Indian economy. Agro-based products have played a vital role in the life of Indian people since the emergence of civilization. Archaeologists have established that farming had been initiated in this sub-continent almost five thousand B.C. Primary evidences of farming have been unearthed at Mehargarh around the banks of river Bolan in Sindh and Baluchistan. Several varieties of wheat and barley have been discovered amidst the evidences. Wild rice and farm rice both have been found at Koldihva in the valley of river Belan in Uttar Pradesh. Excavation of various parts of Harappa culture has proved that there was a well-managed system of agriculture. We have manifest indications that people cultivated rice in Rangpur and Lothal, millets in Rangpur, wheat and pulses in NavdaToli and in Sone Gam.

HARDSHIPS OF ITINERANT NOMADIC LIFE AND THE NECESSITY OF WELL-

## MANAGED AGRICULTURE

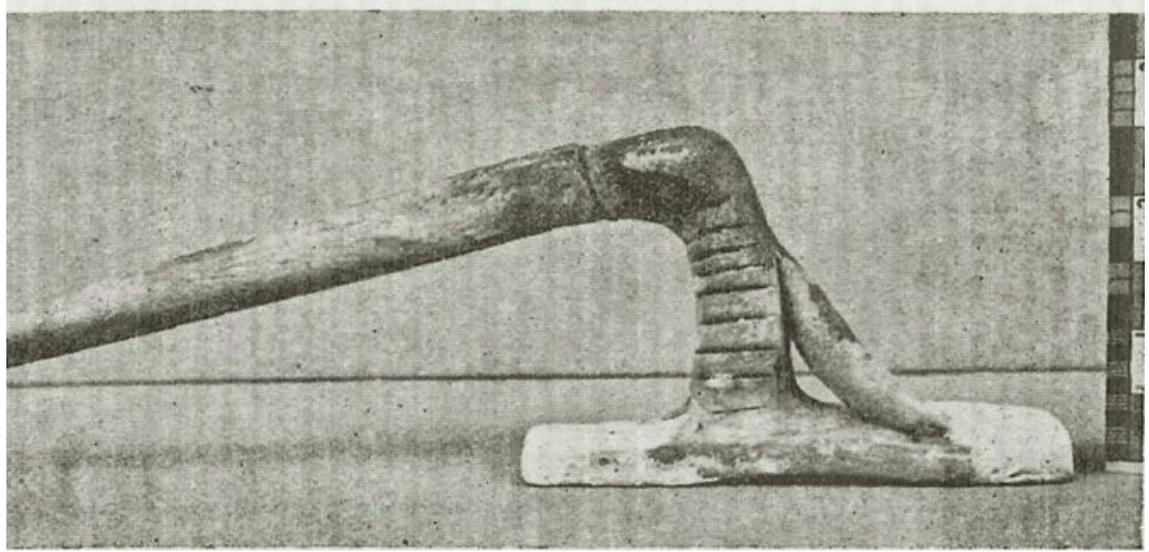
The tiring conditions of early life and roaming constantly in search of food must have forced the early people to think about settling at one place and having a perennial source of food and water.

1. Demand for food must have been enhanced because of the growing population. Natural edible products must have proved insufficient to meet with the requirement of people. It must have compelled them to cultivate food items.
2. The collection and storage of naturally produced food items must have become uncomfortable due to the expansion of colonies.
3. Man must have desired the plenty of his favourite food which was not available naturally. So he must have been compelled towards agriculture.
4. It must have been difficult for early humans to get sufficient food during unfavourable weather conditions.
5. Progressive minds must have emphasized on farming. A few people could now grow food for the whole village and the rest of the people could do something else. During nomadic period every person was anxious just to fill his belly but when this problem was solved for them by others, they were encouraged to think in other directions. These new innovative thoughts were the stepping stones of civilizations.

## SOCIALDIMENSIONS OF THE PROCESS OF AGRICULTURE

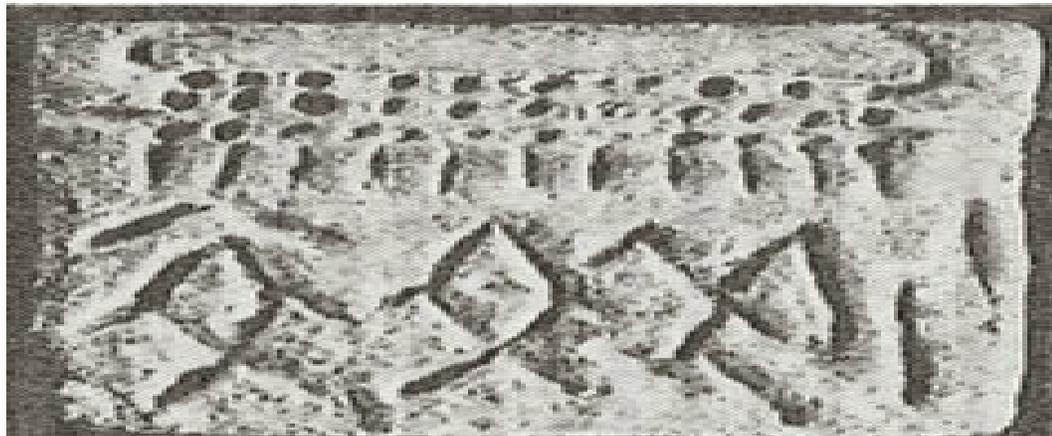
Agriculture accelerated the process of socialization. People became interdependent and it strengthened social relations. People needed one another's help in farming. So they were compelled to adjust with their neighbors and villagers. People adopted different occupations and became farmers, shepherds, iron-smiths, potters, barbers, tanners, water-suppliers and sweepers. Everybody needed everybody else. They developed a kind of barter system where they rendered their services in exchange of services. But the base of all these occupations and services was farming. If we observe the archaeological evidences and ancient Indian literature, we find that agriculture developed as a pious occupation that was given the first preference over other occupations. Harappa and Mohenjo-Daro were no doubt well developed cities. Their culture was not rural but urban. Still the base of these cities was farming. The skilful management of the cities could be possible only because of agriculture. Without agriculture it would have been difficult even to imagine these cultures. The following things prove the agricultural developments in Harappa culture –

Terracotta model of a plough, 7x19.7 cm found in Mohenjo-Daro.



Courtesy- prince of Wales Museum (Mumbai)

A seal from Lothal with a picture of seed drill also shows the proof of agriculture.

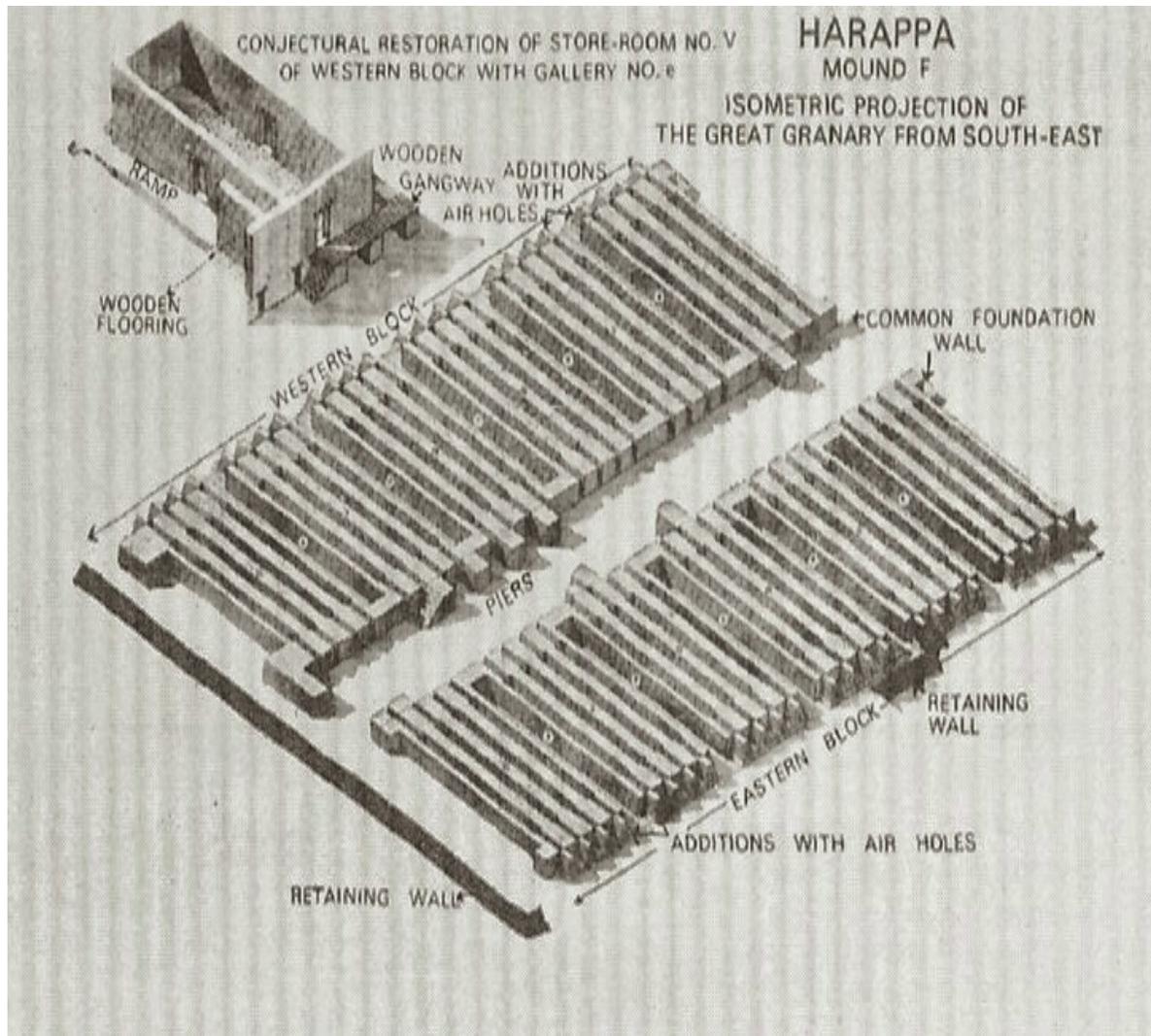


Furrow marks of ploughed land on the southern side of Kalibangan (Rajasthan).



(Courtesy- A. S. I.)

From Harappa we found a great granary. It indicates a lot of production of grains and well developed agriculture sector during that period.



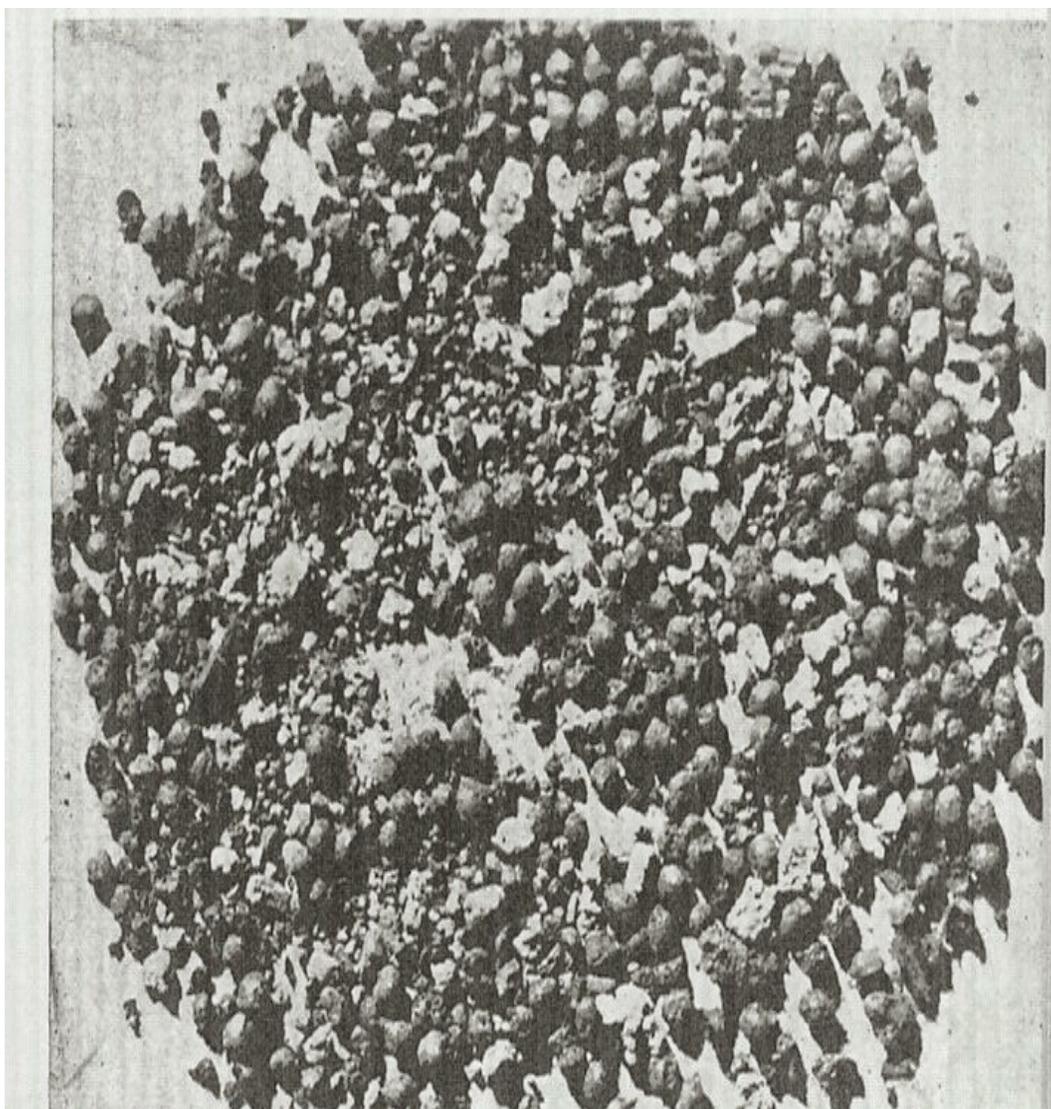
(Courtesy- A. S. I.)

There are carbonized wheat grains also found from Mohenjo-Daro dated 18 th century B.C.



Carbonized Wheat Grains from Mohenjo-Daro  
( Courtesy- I.A.R.I., NEW DELHI)

Mustard seeds are also found from Chanhu-daro a harappan culture site from Sind.



mustard seeds, Chanhu-daro, Sind  
( Courtesy- I.A.R.I., NEW DELHI)

All of the above examples of tools and grains related to Harappan culture show that agriculture play a very vital role in this period.

## AGRICULTURE BETWEEN 1500-1000 B.C.

It is mentioned in the Rig Veda that the Aryans had been ordered by gods to grow crops. Ashwidwiya educated human beings in farming (948.6). At another place 'Ashwidwiya' have been credited to plough the fields and getting rain.<sup>1</sup> It has been mentioned that the farmers ploughed the barley field again and again.<sup>2</sup>

In Rig Veda, the Aryans wish that oxen be carriers of happiness; human beings do farming happily and groups of ropes be joined happily. The Rig Veda uses the word '**Karshan**' for ploughing.<sup>3</sup> At the same place has been stated to sharpen the metallic front part of the plough and word seer (**Langal**) is used for plough.<sup>4</sup> There is the description of rubbing<sup>5</sup> the paddy and separating<sup>6</sup> the grain, sowing<sup>7</sup> the grain and harvesting<sup>8</sup> the ripened crops.

## AGRICULTURE BETWEEN 1000-600 B.C.

During Later Vedic period, agriculture was in a rather advanced condition than earlier. In Atharvaveda, farmers have been addressed as follows-

'O farmers! Use the ploughs, enhance the ages, sow the seeds in duly prepared fertile region. Grow sufficient crops which should reach us when ripened and harvested'.<sup>9</sup>

At the same place, it has been said to give honor to 'SITA' i.e. ploughed land, so that it may impart better yield by remaining favorable.<sup>10</sup>

Atharvaveda mentions the use of plough along with 6 to 8 oxen for sowing barley.<sup>11</sup>

The use of cow dung fertilizers has also been recommended.<sup>12</sup> In Vanaspati Sukta, there are some shlokas that instruct how to protect plants and how to use them for medicinal purposes. Here has been described a savoury, wholesome, energizing medicine 'Uttanparni' which is consumed by gods.<sup>13</sup>

In Yajurveda (Taittiriya Samhita) we find the description of crop cycle in relation to weather cycle. According to it barley should be sown in winter season and harvested in summer while paddy should be planted in rainy season and harvested in autumn.<sup>14</sup> In Atharvaveda gods have been requested to protect the crops from natural disasters like lightning, drought and flood. Sun god has been requested to enrich the crops.<sup>15</sup> Indirectly it has also been noticed that lightning contributed to the availability of agricultural land by destroying forests.<sup>16</sup>

In the post Rig Vedic literature, like Brahman, Aaranyak, Upanishads, there are different examples related to farming.

## **AGRICULTURE BETWEEN 600 B.C. AND 300 B.C.**

We get the glimpses of the agriculture of this period in the book 'KRISHIPARASHAR' written by Maharishi Parashar around 400 B.C.. This book elaborates the importance of cereals. It has been adorned as the life giving element for humans, gods and demons. Everybody has been advised to do farming for producing grains.<sup>17</sup>

In this book, there is the description of various types of rains and rainy seasons as well as the symptoms of drought. In 'KRISHIPARASHAR' animals have been allowed to be used for agriculture upto the limit that they do not feel tortured.<sup>18</sup> This book instructs us to sow the preserved seed at proper time<sup>19</sup> and to separate the chafe from the grains so that the grains do not get destroyed.<sup>20</sup>

## **ARTHASHASTRA AROUND 300 B.C.**

Kautilya has expressed his views on agriculture in his famous composition 'ARTHASHASTRA'. He says that the land prepared for cultivation should be given to taxpayers (Karada) only for life (EKAPURUSLIKNI).<sup>21</sup>

The king has to protect agriculture from various problems and should not charge undue taxes. The behaviour of the king towards the farmers should not be oppressive. In chapter xxiv of ARTHASHASTRA Kautilya mentions the work of the 'superintendent of agriculture'. The superintendent should have knowledge of science of agriculture, dealing with the plantation of bushes and trees. He should be assisted by those, who have got training of such sciences. The superintendent shall in time collect the seeds of all kinds of grains, flowers, fruits, vegetables, bulbs, roots, fiber producing plants and cotton.

In ARTHASASTRA, Kautilya uses the term 'KARSHANYANTRA' for plough and the description of agriculture in that book proves that the farming of that period was very systematic.<sup>22</sup>

In ARTHASHASTRA, there is classification of crops. According to it, rice crops and the like are (JYASHTHA) the best to grow; vegetables are (SHANDA) of intermediate nature and sugarcane (IKSHU)crops are the worst (PRATYAVARAH i.e. very difficult to grow), for they are subject to various evils and require care and expenditure to reap.<sup>23</sup>

In ARTHASHASTRA, we find the description of growing medicinal plants and their uses. These plants were used for Ayurvedic treatment of diseases. The minute methods of recognizing, growing and using them have been mentioned in this book.<sup>24</sup>

Kautilya uses the term 'VAARTA' for rearing animals, farming and business. He says that this is the occupation of VAISHYAS. It is evident that agriculture had been established as an occupation by this time.<sup>25</sup>

After Maurya period, the state itself attempted to enlarge the agriculture region. In this attempt the help of Smritiscriptures was also taken.<sup>26</sup>

According to Jatak scriptures, there happened to be celebrated a festival of ploughing by the king and his colleagues so that the people of the state may get inspiration from them. It explains the importance of farming in ancient Indian society.<sup>27</sup>

The Greek historian DiodorosSiculus is known for writing the monumental universal history BIBLIOTHECA HISTORICA, in which he has written exhaustively about ancient India and its agriculture system. According to this historian, in addition to the grain of Demeter(wheat) there grows throughout India much millet, which is irrigated by the abundance of running water supplied by the rivers, pulse in large quantities and of superior quality, rice also and the plant called bosporos (a kind of millet) and in addition to these many more plants which are useful for food and most of these are native to the country.<sup>28</sup>

He further states that, there are two rainy seasons in the country each year, during the winter rains the sowing is made of the wheat crops as among other peoples, while in the second, which comes at the summer solstice, it is the general practice to plant the rice and bosporos, as well as sesame and millet; and in most years the Indians are successful in both crops, and they never lose everything, since the fruit of one or the other sowing comes to maturity. The fruits also which flourish wild and the roots which grow in the marshy places, by reason of their remarkable sweetness, provide the people with a great abundance of food.<sup>29</sup>

According to Kalidas agriculture and animal husbandry contribute extensively in state's economic development.<sup>30</sup>

## **AGRICULTURE BETWEEN 300 B.C. AND 700 A.D.**

### **AMARKOSHA (400 A.D.)**

Amarkosha is a sanskrit thesaurus written by Amarsingh. It is written in verse form and also known as '**Namalinganushasanam**'. Amar Singh is a navratana in court of Chandra Gupta Vikramaditya II. It mentions different types of crops as wheat,<sup>31</sup> barley,<sup>32</sup> sesame,<sup>33</sup> pulses,<sup>34</sup> vegetables,<sup>35</sup> peas,<sup>36</sup> lentil,<sup>37</sup> mustard seed,<sup>38</sup> rice.<sup>39</sup>

### **VRIHATSAMHITA (BARAHMIHIR) 500 A.D.**

Badrayan has stated the following yogas and plant configurations in both good and bad respect of growth of summer and autumnal crops.<sup>40</sup>

According to him when the sun is in Vrischika and Jupiter and the moon in Kumbh and Simha, summer crops will prosper.<sup>41</sup>he mentions different seasonal crops.<sup>42</sup>So clearly this book tells us about crop cycle.

### **HARSHACHARIT ( 7th CENURY A.D.)**

Written by Banbhata, Harshacharita also throws light on the agricultural product. According to Harshacharita, “In Srikantha regionpeopled by the good, a heaven of Indra, as it were, descended upon earth, where the laws of caste usage are for ever unconfused and the order of the Krita age prevails. Owing to the number of its land lotuses the ploughs, whose shares uproot the fibres as they sear the acres, excite a tumult of bees, singing, as it were, the excellencies of the good soil. Unbroken lines of Pundra sugar-cane enclosures seem besprinkled by the clouds that drink the Milky Sea. On every side its marches are packed with corn heaps, like extemporized mountains, distributed among the threshing floors. Throughout it is adorned with rice crops extending beyond their fields, where the ground bristles with cumin beds watered by the pots of the Persian wheel. Upon its lordly uplands are wheat crops variegated with *Rajamasapatches* ripe to bursting and yellow with the split bean pods.”<sup>43</sup>

Yuan Chwang also tell us about different agricultural operations as reaping the crops, preparing the soil ( lit. ploughing and weeding), sowing and planting and products of India rice and wheat, ginger, mautard, melons, pumpkins, kunda( properly the olibanum tree) , onion and garlic etc.<sup>44</sup>

### **AGRICULTURE AFTER 700 A.D.**

#### **KASHYAPIYA KRISHI SUKTI (800 A.D.)**

Composed by Kashyap Rishi, this book has been divided into four parts. In the beginning there is the precept of scriptures. The land protected by the king and flourished by mountains, has been divided on the basis of crops. It has been instructed that ponds and wells should be dug near the agricultural land.<sup>45</sup>

Kashyap Rishi says that the land should be ploughed first; then it should be watered. At proper time, the seed of good quality should be sowed in it. He emphasizes on the quality of the seed because good seed can give good fruits. He insists on the preservation of seed<sup>46</sup>

Medhatithi( 9<sup>th</sup> Century A.D.) tells us about 17 different kinds of grains as wheat, rice etc.<sup>47</sup> The names of several grains and their synonyms have been mentioned by Halayudhaas different types of rice, mustard, sesame, peas pulses etc.<sup>48</sup>Mansollas mentions different kinds of rice on the basis of color, fragrance, size and their reaping time.<sup>49</sup>

#### **UPVANVINOD OR VRIKSHAYURVEDA(1000 AD)**

In this book, the pleasure of gardening has been termed as the greatest of all pleasures. All other pleasures have been considered secondary.<sup>50</sup>

In this book, there are instructions for the examination of land,<sup>51</sup> for sowing seed, the time of sowing,<sup>52</sup> various uses of fertilizers<sup>53</sup> and treatment of diseased plants.<sup>54</sup> Ksirswamin (11<sup>th</sup> century A.D.) the commentator of Amarkosha gives a list of different agricultural products.<sup>55</sup>

Thus we come to the conclusion that agriculture has been a marking feature of Indian civilization. Our ancestors had very vast knowledge of agricultural techniques and procedures. In the course of time new ideas and experience play a very decisive role in this sector. It plays very supportive role in the society to make people busy all the time therefore they have no time for creating any type of nuisance. It has been the backbone of ancient Indian economy and continues to be the same even today. It is the reason why Indian economy remains mostly stable even when the world economy totters under recession.

### Works Cited:

1- Rigveda Sukta 17.21, Manvantar 1, Anubhag 17.

**“Yavamvrikrenashwinavapanteshamduhantamanubaydasra”.**

2-Ibid, 23, 15, Manvantar 1, Anubhag 5.

**“Utosmahiyabhindubhihshadyuktam**

**anuseshidhatgobhiryabhamnacharkrishayat.”**

3-Ibid, 10.101.2.

4-Ibid, 10.101.4.

5-Ibid, 10.48.7.

6-Ibid, 10.94.13.

7-Ibid, 10.101.3.

8- Ibid.

9-Atharvaveda, 3<sup>rd</sup>kanda, krishisukta 17, 480.

**“Unaktseeraviyugatanotkritayonauvaptehbeejam.**

**Virajshnashtihsabhraasatronediyaitasrishtiyahpaquama  
yavan”.**

10- Ibid, 3.17.486.

**“ SitayVandamahetwarvachisubhgebhav.**

**Yatha nah sumnaasoyathanasuflabhubah.”**

11-Ibid, 6.91.1.

**“ Imam yavmastayogaih shadayogebhirchakresu.**

**tena te tanvo rapoipachinmapa vayaye.”**

12-Ibid, 19.31.3.

**“Karishinifalvatinsvadhamirancha nograhe.**

**audumbarasyatejasadhatapustindadhatumai.”**

13-Ibid, Vanaspatisukta 18, 489.

**“ Uttanparnesubhagedevsutesahsvati.**

**sapatnin me paranudpatinmeikevalamkridhi.”**

14-TaittiriyaSamhita, 4.2.6 & 7.2.10.

15-Atharvaveda, 7.11.1.

**“yasteprathustanyitnuryarishvodaivah**

**keturvishvamabhushtidam.**

**ma no vadhivirdhutadevisasyan mot vadhi**

**rashmibhihsuryasya.”**

16-Ibid, 7.50.1

**“ yathavrikshamashnirvisvahahantyapрати.....”**

17-Krishiparashar Shlok 6-7

**“Anampranambalamchannamanamsarvarthsadhanam.**

**Devasurmanushyathsarvechannopajeevinah.**

**Anam hi dhanyasanjatamdhanyamkrishyabinana cha.**

**Tasmatsarveparityajyakraishimyatrenkaryet.”**

18- Ibid, 84.

**“Krishi cha tadrishikuyadhitavahannpeedyet**

**vahpeedarjitshasyagarhitamsarvkarmasu.”**

19- Ibid, 157.

**“Shoshayedatapesamyaknevadhovinidhapyet**

**beejasyaputikamkritwavidhanyatatrashodhayet.”**

20- Ibid, 158.

**“Nishpannamapiyadranyamnakritamtrinvarjitam**

**nasamyakfalmaprotrinkshinakrishirbhavet.”**

21- Arthashastra, ed. by Shamshastri, p. 61.

22- Ibid, p. 163.

23- Ibid, p. 165.

24- Ibid, p. 166.

25- Ibid, 1,4, p. 8.

26- Manu smrti, 10,114.

**“Akritan cha kritatkshetradaurjavikamev cha**

**hiranyadhanyamannan cha purvepurvamadoshvata.”** 27- The Story of the Lineage, p. 163-64.

28- Diodorous, book II, 36.

29- Ibid.

30. Raghuvansh, Canto 16, 2.

**“Tsetuvartagajabandhumukhair  
abhiyukshitahkarmabhirapyabndhaiyah  
anyayonyadeshpravibhagsiman  
velansamudraeva nah vyatiyuh.”**

31. Amarkosh, 2.9.18.

32. Ibid, 2.9.7.

33. Ibid.

34. Ibid, 2.9.8.

35. Ibid.

36. Ibid, 2.9.16.

37. Ibid, 2.9.17.

38. Ibid.

39. Ibid, 2.9.15.

40- Vrihatsamhita, ch. 40, sloka 2.

**“Manor li praveshekendresthasmachubhagrahakanter  
Balvridhisaumyervanirikshitegreshmikavivridhih.”**

41- Ibid, 4.

**“Arkatsitedwitiyebudheathwayugpadevwasthitayo  
Vyayagatyorapitadannishpattirtivagurudrishtaya.”**

42. Ibid, 5.21; 9.42; 10.18.

**“ Aindrebbhoopvirodhahsharadasasyakshyona cha kshemam  
kaubareyarthpatinamarthvinashahsubhiksham cha.”**

**Brahaspatohantipurahsthitesitasitamastdvijgosuralyan  
disham cha purvakarkasrajombuda gale gadabhooribhavech  
shardam.”**

43. Harshacharit, chapter 3.

44. Waters, 1, p. 178.

45-Kashyapiya KrishiSukta Part-One

**“Nadensarbhumya cha hadenmahtamapi cha  
kashchitsharkarasya cha kashchitvyushnarupini  
kashchitjalviheena cha jateyamvasudhakamat  
kashchidusharupa cha kashchitbeejvinashini.”**

46- Ibid, 408-10.

**“Shalyadivisanitathashakbijanivapunah  
vrikshanamapibeejanikandanamapibeejakam  
kritwasangrahvalokekrishikarmvidonarah  
swakshetreshuswadeshasyavadratyuktisthata  
nanaroopeshuvrikshmahkarshiteshuvisheshatah”**

47. Medhatithi, 8.320.

48. Abhidhanratanmala, 2.421-29.

**“Shambakratamdivisitayamsyatsita  
langalpadhdhati.....  
.....trandhanyamtuneevarahswamak  
ahshyamakobhavetvallisapavakahprokataadhakituvarismrita.**

49. Mansollasa, 3, 1346-48.

**“ Mundashalihsthoolshalihskshoomsalihshasthikah  
rakatavyatwadraktshalihsyamahashalirmahakratih  
sugandhiargandhshalihsyatkalingothahkalingakah  
sukshonyomundshalihsthoolshalistadakratih**

**soukshmyatushukshmshalihsyaddimasahshasthikah**

**smartah**

**etanshalinprathaksarvanmuslairvitushikrishan.”**

50-Vrikshayurveda Shlok 2.

**“Navamvayoharivapurvrangnahsakhakalavitkalvallakiswanah  
dhanam hi sarvkilamsukheshinovinaviharopavananibhoopet.”**

51-Ibid, 39.

**“Na janglanachanupabumihisadharanshubha  
tasyamsarveapitarabahprarohantinasanshayh”**

52-Ibid, 63.

**“Ashadeshravanemasibeejavapanaropen”**

53-Ibid, 166 & 240-53.

**“Ghupoghritsyasamridoyavvarisekonityam cha  
dugdhasalilehkushapambubhirva  
lepoividagatikalkakritashishunavidhikarotiparmakhalubhuruhanam.”**

54- Ibid, 187-204.

55. Ksirswamin, ch. II, 145-64.

**“ Nikumbhoodantikapratakshreyudumberparnayapi...**

.....

**syadviranamveertarammulesyoshirmastriyam.”**