

Importance of Plants as depicted in *Purāṇas*

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Abstract

Plants according to the *Purāṇas*¹ give happiness both here alone on the earth and hereafter. The paper highlights the importance of plants from religious, cultural, ritualistic and economic point of view. *Viṣṇudharmottara Purāṇa* describes that by offering flowers to God, one gets blessings and leads propitious, prosperous and auspicious life. Offering flowers to deities also results in better fortune, glory, supremacy, opulence and happiness of mind. The plants described in *Purāṇas* include *Āmalakī*, *Aśoka*, *Bilva*, *Khadira*, *Tulasī*, *Aśvattha* etc. Economically the plants play a vital role in making of garment, cosmetics, ornament and wood based industries etc. Plants are richest source of food and also have medicinal use.

Key words: Cultural, Economic, Medicinal, Plants, *Purāṇa*, Religious

1. INTRODUCTION

Plants are significant part of nature. They have been described in Sanskrit Literature as part and parcel of human civilization and have played vital role in almost all the spheres of human life. According to the Indian Tradition, not only plants are an important ingredient of nature, but the existence of the world sans plant kingdom is also impossible. Life cannot run smoothly without them. From time immemorial, plants provide food, cloths, medicines, dwellings and many other things indispensable for survival and prosperity. It goes without saying that among various constituents of nature, high importance has been given to the plants, since, plants have profoundly influenced the culture and civilisation of man from pre-historic times. By going through the Sanskrit Literature, it is crystal clear that the extent to which plants in India is used in worship and medicine is

unrivalled and unparalleled. There is hardly any sphere of human activity in India where sacred plants do not play a role.

2. MATERIALS AND METHODS

Numbers of *Purāṇas* were read. In this regard, various libraries were consulted including Central Library, Ranchi University, Ranchi and Kamil Bulke Sodh Sansthan, Ranchi. Oral discussions with well versed personalities in field of Sanskrit and Botany were also made. However, major thrust was on the primary sources-*purāṇas*.

3. AREAS OF IMPORTANCE

Various aspects of importance of plants have been emphasized. Some of these are religious, cultural, ritualistic, environmental and economic importance of plants. However, a few are discussed here.

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¹ The *Purāṇas* are among the ancient Indian Literature of poetic creativity and said to be the soul of the Vedas. *Purāṇas* have served as a perennial source of ideas in their own right. In Indian tradition there are eighteen *Mahāpurāṇas*. Besides these there are number of *Upapurāṇas*. It is difficult to say definitely when the *Purāṇas* first came into being; roughly their period of composition is fixed between 3-12 century CE.

3.1 Ecological and Environmental importance of Plants

Plants have been integral part of Indian life and culture. Owing to its importance in day-to-day human life and environment balance, ancient seers of India did all that was possible to conserve and preserve plants. They developed the concept of tree worship apart from discussing the merits of plantation. How felling or cutting of trees was considered as sin and hazardous have been discussed in ancient Sanskrit literature. As plants are required for healthy environment, thoughts for plant conservation were given prominence in ancient India. If those thoughts are practised in modern era too, problems of environment pollution could easily be met.

For promoting conservation of plants, our ancient seers and poets developed a unique idea of tree worship. This aspect was given prominence in ancient India. Going by Sanskrit Literature, one could easily draw a conclusion that that some trees were abodes of Gods and spirits. It can be stated without an exaggeration that from time immemorial tree worship has occupied an important place in the religious sentiments of Indian people.

3.1.1 Sacredness of plants: As regards plantation and celebration of tree festivals, it is noted that a wise man who perform certain prescribed rites, obtains all his desires (*Matsyapurāṇa*, 59.16). He who plants a tree, would live in heaven. He attains great prosperity without any rebirth. The trees alone make a sonless person too have a son (*Padma Purāṇa*-1.28.18-22). There are various *vratas* and festivals related to trees. Some of them are named here such as *Arkasaptamī* (*Padma Purāṇa*, 5.75.86-106), *Aśokadvādaśī* (*Matsyapurāṇa*, 81.1-28), *Aśokapūrṇimā* (*Matsyapurāṇa*, 184.1), *Āmalakye-kādaśī* (*Padmapurāṇa*, 6.47.33), *Kamalasaptamī* (*Matsyapurāṇa*, 78.1-11), *Dūrvāṣṭamī* (*Matsyapurāṇa*, p.137) and *Dhātrīvrata* (*Padma Purāṇa*, 5.58.1-11).

Many plants are considered highly sacred. Plants are often associated with many myth and folklore. The tradition of conserving the plants and the forest wealth was strengthened by social customs and traditions. There were *vratas* and festivals related to trees. The plants are associated and identified with Gods, planets, months etc. *Vāmana Purāṇa* has come up with unique aspect in this regard. It has discussed the divine origin of the plants (*Vāmana Purāṇa*-17/1-9) as categorised in the table 1.

Table 1

Name of the plants	Originated from
All the <i>Oṣadhis</i>	The dermal hairs of Supreme God.
<i>Padma</i>	The naval region of <i>Prajāpati</i> .
<i>Kadamba</i>	The palm of <i>Kandarpa</i> .
<i>Nyagrodha</i>	The hand of <i>Manṇibhadra</i> .
<i>Dhattūra</i>	The heart of <i>Maheśvara</i> .
<i>Khadira</i>	The mid-region of <i>Brahma</i> 's body.
<i>Kunda</i>	The palm of <i>Girijā</i> .
<i>Palāśa</i>	The right side of <i>Yama</i> 's body.
<i>Aśvattha</i>	<i>Ravi</i> .
<i>Śamī</i>	<i>Kātyāyanī</i> .
<i>Bilva</i>	The palm of <i>Lakṣmī</i> .
<i>Dūrvā</i>	The tail and back of <i>Vāsukī</i> .

Planets were also worshipped in ancient India. These planets were worshipped by specific types of leaves and flowers as mentioned in Table 2 (Bennet, Gupta and Rao, 1992, p. 22):

Table 2

Planets	Plants used in worshipping
<i>Sūrya</i>	<i>Śvetārka</i> (<i>Calotropis procera</i>)
<i>Candra</i>	<i>Palāśa</i> (<i>Butea monosperma</i>)
<i>Maṅgala</i>	<i>Khadira</i> (<i>Acacia catechu</i>)
<i>Budha</i>	<i>Apāmārga</i> (<i>Achyranthus aspera</i>)
<i>Guru</i>	<i>Aśvattha</i> (<i>Ficus religiosa</i>)
<i>Śukra</i>	<i>Udumbara</i> (<i>Ficus glomerata</i>)
<i>Śani</i>	<i>Śamī</i> (<i>Acacia ferruginea</i>)
<i>Rāhu</i>	<i>Dūrvā</i> (<i>Cynodon dactylon</i>)
<i>Ketu</i>	<i>Darbha</i> (<i>Saccharum spontaneum</i>)

Bhāgavad Mahāpurāṇa says that the birth of the trees is verily the most blessed in the world, as it contributes to the well being of all creatures. According to *Varāha Purāṇa*, the learned recognize a tree to be like a son because it provides woods for building houses for domestic life, so is shelter for small animals, birds breeding besides providing fruits throughout the year.²

3.1.2. Plantation: For conserving plants, *Rṣis* promoted an idea of plantation too. For this they associated many things with plantation. Keeping in view that trees provide food, shade, fuel and wood, *Purāṇas* have time and again mentioned that they should be produced, protected and donated to the society. According to *Matsya Purāṇa*, planting of trees was a pious action. According to it, he, who plants even one tree, goes straight to the heaven and obtains the highest perfection.³ *Varāha Purāṇa* adds that just as a dutiful son raises his family by hard effort and austere resolve, so do the trees with their flowers and fruits, raise up from hell their planter.⁴ *Viṣṇu Purāṇa* emphatically discourages inflicting injury to the trees.

3.1.3 Padma Purāṇa: Discussing the importance of planting trees, *Padma Purāṇa* says that it is not possible to know or to narrate the reward earned by that man who plants auspicious trees all around.⁵ The reward that a man would get by planting trees near water is a lakh crore times more than the reward that he would get by planting them somewhere else (*Padma Purāṇa*, 1.60.3). Planting

even one tree is a yeomen for (*Padma Purāṇa*, 1.60.11). He who plants a *aśvattha*, a *picunda*, a *nyagrodha*, ten flowering plants, two-two *dadima* as well as *mātuliṅga* and five *āmra* never goes to hell.⁶ Those who set up orchards or plant trees on the roads, proceed on to *Yama's* abode without any trouble (*Śiva Mahāpurāṇa-Umā Samhitā*, 11.6). Those who set up gardens, move on boarding the *Puspaka* planes (*Śiva Mahāpurāṇa-Umā Samhitā*, 11.7). The trees laden with fruits are to be considered golden and best for birds. To protect the garden is to provide pleasure to people. To destroy it is to do harm to others.⁷

3.1.3. Prohibition from felling trees: Not only plantation was promoted in ancient, felling or cutting of trees was highly discouraged and condemned. Felling of plants without permission was considered as a penal offence in ancient India. In the *Purāṇas* felling of tree is linked with calamities, disorders and sin, so that people would fear to destroy a tree. The *Bhaviṣya Purāṇa* says- Felling of tree results in the destruction of the family of the person concerned. He also becomes dumb and suffers from diseases (*Bhaviṣya Purāṇa*, 2.16.60). *Vāyu Purāṇa* says that whenever people on this earth become greedy and cut off the plants for self use they suffer a lot. Emotions of lust and greed of a human being result in demolition of trees (*Vāyu Purāṇa*, 8.83, 87). When those trees got demolished, senses of people got dazed and agitated (*Vāyu Purāṇa*, 8.89). *Vāmana Purāṇa* says that if the trees, which protect all living beings

² गृहकृत्यानि काष्ठानि क्षुद्रजन्तुगृहं तथा । सत्रनिवर्तनं प्रोक्तं भिक्षापात्रैः सभाकृताः ॥
फलन्ति वत्सरे मध्ये द्वौ वारौ शकुनादयः । सांवत्सरं पितुर्मातुरुपकारं फलैः कृतम् ।
एवं पुत्रसमा रोषा एवं तत्त्वविदो विदुः ॥ (*Varāha Purāṇa*, 170- 40-41)

³ यश्चैकमपि राजेन्द्र वृक्षं संस्थापयेन्नरः । सोऽपि स्वर्गे वसेद् राजन् यावदिन्द्रायुतत्रयम् ॥ (*Matsya Purāṇa*, 59. 17)

⁴ यथा सुपुत्रः कुलमुद्धरेद्धि यथाऽतिकृत्स्नान्नि यमप्रयत्नात् ।
तथा प्ररोषाः फलपुष्पभूताः स्वं स्वामिनं नरकादुद्धरन्ति ॥ (*Varāha Purāṇa*, 170. 37)

⁵ यस्तु रोपयते तीरे पुण्यवृक्षान्समन्ततः । तस्य पुण्यफलं ज्ञातुं कथितुं नैव शक्यते ॥ (*Padma Purāṇa*, 1. 60. 2)

⁶ अश्वत्थमेकं पिचुन्दमेकं न्यग्रोधमेकं दश पुष्पजातीः ।
द्वे द्वे तथा दाडिममातुलिङ्गे पञ्चाम्रवापी नरकं न याति ॥ (*Varāha Purāṇa*, 170. 36)

⁷ ये च वृक्षाः फलोपेताः ते सुवर्णाः खगोत्तमाः । रक्षां कुर्वन्ति सततं स्वामिनोऽमुत्र चेह च ।
तस्य नाशाद् यथा नोऽत्र जातेयं च विरूपता ॥ (*Varāha Purāṇa*, 170. 31)

like mother, are cut then the Earth becomes like a hell.⁸ Cutting a green plant for the sake of fuel is considered as sin (*Manusmṛti*, 11.64). *Varāha Purāna* (Panchamukhi, 1998, p.304) says that trees should never be cut. If even by mistake or unknowingly one cuts the tree grown in the garden of a city, he will certainly fall into hell after his death. It further adds that if the trees that give shelter to the travellers are cut by a person, he will fall into a hell called 'Asipatravan', wherein he will be tortured by the servants of God *Yama*. *Brahmavaivarta Mahāpurāna* says that even *Brāhmaṇa*, who was considered to be respectable member of the society, was also to be expelled from the society if found guilty of cutting tree, specially *aśvattha* tree (*Brahmavaivarta Mahāpurāna-Gaṇapatikhaṇḍa*, 35.40). According to the *Viṣṇu Purāna*, *Śrī Keśava* is pleased with a person who never fells or hurt trees (*Viṣṇu Purāna*, 3.8.15).

3.1.4. Punishment for cutting trees: Scriptures have prescribed punishments and atonement for cutting trees. This thought developed only to conserve and preserve plants. The *Matsya Purāna* prescribes various punishments on tree felling and cutting depending upon the gravity of the offence. It states that if a tree with fruits is cut, the offender is to pay the penalty in gold. The penalty will be doubled when the trees on the side of streets, on the borders and on the banks of a water reservoir are cut. For cutting the trees even without fruits the punishment is *Madhyama Sāhasa*. For cutting plants of category *Gulma*, *Vallī* and *Latā* the penalty prescribed is *māṣaka* of gold. For cutting grass without reason the penalty is *Karṣāpaṇa*. The quantity of penalty and the degree of

punishment is to be determined by the king after considering various facts like place, time etc.⁹ If branches, trunks and roots are cut without permission, the offender should be fined twenty, forty and eighty gold coins for cutting them respectively (*Agnipurāna*, 258. 25). By cutting roots of fig tree, a man eternally lives in hell. Men stand by them in the hell called *Raurava* of fearful sight.¹⁰

Purānas touched each and every aspect to conserve and preserve trees for ensuring environmental balance. If all that were preached in *Purānas* are practised with full honesty, proper conservation of plants would become a reality.

3.2 Cultural Importance of Plants

Recognising the basic needs of human being, the ancient sages have given fourfold ideal to be striven for by everyone. This is called the *Puruṣārthas* or the ends to be striven of life. They are four: *dharma* (righteousness), *artha* (wealth), *kāma* (desires) and *mokṣa* (liberation from transmigratory existence). Plants are also related to this *puruṣārthas*. *Vṛkṣāyurveda* says that trees should be carefully nurtured through their shade, flowers, and fruits as they help immensely in the pursuit of *dharma*, *artha* and *kāma*.¹¹

Plants are always involved in well being of others. They yield fruit only for beneficence. Trees are like umbrella for those who suffer from scorching sun. They provide shade and bring happiness for the sufferers (*Śrīmadbhāgavatmahāpurāna*, 10.22.30). The almighty *Kṛṣṇa* says in *Śrīmadbhāgavatmahāpurāna*-

Friends, look at these noble trees, which live entirely for the sake of others,

⁸ फलस्तेयं महापापं फलहीनं तथाऽटनम् । छेदनं वृक्षजातीनां द्वितीयं नरकं स्मृतम् ॥ (*Vāmana Purāna*, 61. 2)

⁹ वृक्षं तु सफलं छित्वा सुवर्णं दण्डमर्हति । द्विगुणं दण्डयेच्चैनं पथि सीम्नि जलाशये ॥

छेदनादफलस्यापि मध्यमं साहसं स्मृतम् । गुल्मवल्लीलतानां च सुवर्णस्य च माषकम् ॥

वृथाच्छेदी तृणस्यापि दण्ड्यः कार्षापणं भवेत् । त्रिभागं कृष्णला दण्ड्याः प्राणिनस्ताडने तथा ॥

देशकालानुरूपेण मूल्यं राजा द्रुमादिषु । तत्स्वामिनस्तथा दण्ड्या दण्डमुक्तस्तु पार्थिवः ॥ (*Matsya Purāna*, 227. 91-94)

¹⁰ मूलच्छेदेन तस्यैव स च यात्यपुनर्भवम् ॥ पुरुषास्तस्य तिष्ठन्ति रौरवे घोरदर्शने । (*Padmapurāna*, 1. 58. 27-28)

¹¹ अतो धर्मार्थकामानां छायापुष्पफलादिभिः । प्रसाधकतमावृक्षाः पालनीयाः प्रयत्नतः ॥ (*Vṛkṣāyurveda*, 98)

themselves bearing all the rigours of wind, rain, heat, dew etc., but protecting us from them.¹²

Talking about the trees, he further says- ‘How covetable is their life, providing nourishment to all beings who come to them! No one seeking sustenance from them has to go away disappointed, just like needy people seeking help from good men’. (*Śrīmadbhāgavatmahāpurāṇa*, 10.22.33). Trees fulfil the needs of beings and other creatures with their leaves, flowers, fruits, shade, roots, bark, timber, sweet smelling sap, ashes, wood, and other tender shoots.¹³ The service of the trees in providing fire-wood, sticks for sacrifices like *agnihotra*, shade for the travellers to rest, nests for birds and medicine for men through the leaves, root and bark is said to be its five sacrifices (*pañcayajña*).¹⁴

As far as *Artha puruṣārtha* is considered, it has been discussed in a separate subheading entitled ‘Economic Importance of Plants’. *Kāma puruṣārtha* of trees has also been discussed in Sanskrit Literature. This activity has been described while describing *dohada* trees. Many trees fall in this category including *aśoka*, *tilaka*, *bakula*, *kurbaka* etc. The *aśoka* puts forth its blossom when struck by the foot of a woman – preferably the lotus-like foot jingling with anklets of a beautiful woman. In this it is one of the most important trees in the *dohada* tradition. *Dohada* literally refers to the cravings of a pregnant woman and in this context the desire of trees, just before they bloom, for some kind of contact with a woman. Women can thus trigger their flowering by a sort of ritual that varies for each tree. For instance, a woman need only glance at the *tilaka* to make it bud; the *campaka* succumbs to her

laugh, the *nameru* to her voice and the *kurabaka* to her embrace. So strong is this tradition that poets count it a wonder when the *aśoka* and other *dohada* trees bloom without the instigation of a woman.

As regards *Mokṣa puruṣārtha*, *Varāha purāṇa* says that one who plants and protects the trees full with flowers and fruits for the sake of other beings, certainly attains the last of the four ends of human existence i.e. *mokṣa* (liberation) after his death. The planter of trees, according to the prescribed rites liberates the same number of his past and future and attains highest perfection, and is never reborn on earth i.e. attains *mokṣa* (*Matsyapurāṇa*, 59. 17-19).

3.3 Religious and Ritualistic Importance of Plants

Many of the plants are significant from religious and ritualistic point of view. Some of them are discussed here.

3.3.1 Āmalakī is well known for its ritualistic importance. *Padma Purāṇa* says long life would be obtained by eating it; religious merit would be accumulated by drinking the juice of it, misfortune would be destroyed by taking a bath after applying its tenacious paste to one’s body; and one would get all prosperity.¹⁵ *Skanda Purāṇa* says that wherever one takes bath using *dhātrī* water, whether it is in a *tīrtha* or in a house, *Hari* is present there (*Skanda Purāṇa*, 2.4.12.121). If the bones in the body of a man are washed with the use of *dhātrī* while bathing, he will never stay in any womb (*Skanda Purāṇa*, 2.4.12.122). It is believed that he whose hair is always well tinged with *dhātrī* juice, would never again suck his mothers breast i.e. would never be reborn (*Padma*

¹² पश्यतेतान् महाभागान् परार्थकान्तजीवितान् ।

वातवर्षातपहिमान् सहन्तो वारयन्ति नः ॥ (*Śrīmadbhāgavatmahāpurāṇa*, 10. 22. 32)

¹³ पत्रपुष्पफलच्छायामूलवल्कलदारुभिः । गन्धनिर्यासभस्मास्थितोक्मैः कामान् वितन्वते ॥ (*Śrīmadbhāgavatmahāpurāṇa*, 10. 22. 34)

¹⁴ इन्धनार्थं यदानीतमग्निहोत्रं तदुच्यते । छायाविश्रामपथिकैः पक्षिणां निलयेन च ॥

पत्रमूलत्वगादींश्च ओषधार्थं तु देहिनाम् । उपकुर्वन्ति वृक्षस्य पञ्चयज्ञस्तदुच्यते ॥ (*Varāha Purāṇa*, 170. 38–39)

¹⁵ भक्षणे च भवेदायुः पाने वै धर्मसञ्चयः । अलक्ष्मीनाशनं स्नाने सर्वैश्वर्यमवाप्नुयात् ॥ (*Padma Purāṇa*, 1.62.4)

Purāṇa, 1. 62.12). Even a sight of the *āmalakī* tree is considered to be highly fruitful. Lord *Viṣṇu* is pleased with his devotee who utters the name of this tree (*Padma Purāṇa*, 1.62.13). *Āmalakī* is an excellent *Vaiṣṇava* tree; one will get the benefit of making the gift of cows merely by remembering it. By seeing it one gets twice the benefit and eating its fruits three times the benefit (*Skanda Purāṇa*, 2.4.12.1). In sacrifices to Gods, sages and holy places the offering of *dhātṛī* in *kārtika* was considered sacred (*Padma Purāṇa*, 4.22.22). If a man resorts to the shade of *dhātṛī* and offers rice balls to *Pitṛs*, the *pitṛs* attain liberation with the favour of *Mādhava*.¹⁶ *Padma Purāṇa* suggests wearing rosary made of *āmalakī* fruits. The man on whose body is seen the rosary made of *dhātṛī* fruits is certainly a devotee of *Viṣṇu* (*Padma Purāṇa*, 4.22.11). A man can reside in *Vaikuṅṭha* as many thousands of *yugas* as the number of days he wears garland of *dhātṛī* in *Kali Yuga* (*Skanda Purāṇa*, 2.4.12.80). By touching *āmalakī* tree, one's religious merit is doubled, and by wearing it is tripled (*Padma Purāṇa*, 6.46.16-17).

3.3.2 Bilva is the embodiment of God *Śiva* himself and is one of the sacred tree symbols of Hinduism. "The *bilva* tree is the form of *Mahādeva* (*Śiva*) and it has been praised even by the Gods".¹⁷ Instituting *Śivaliṅga* beneath *bilva* is considered as very pious deed. He who does so, and offers prayers and regularly visits there can get rid of even the severe of the severest sin including *brahmahatyā* (*Skandapurāṇa*, 7.2.16.46). The best leaves for worship of *Keśava* are *bilva* leaves (*Vāmana Purāṇa*, Joshi and Bimali, 2005, p. 497). One who offers prayers to Goddess *Pārvatī* with *bilva* leaves with whole devotion gets everything he desires (*Vāmana Purāṇa*, 6.251.10). According to *Vāyu Purāṇa*, *bilva* is most suitable for sacrificial purposes (*Vāyu Purāṇa*, 75.71-72). *sruva* is an integral part for performing *Yajña*.

Bhaviṣya Purāṇa states that it should be made up of *bilva* wood (*Bhaviṣya Purāṇa*, 2.19.1).

3.3.3 Khadira: The sacredness of *khadira* is beyond question. *Varāhapurāṇa* discusses the significance of *Khadiravana* situated in Mathurā. According to it one who visits *Khadiravana* in Mathurā goes to the abode of *Viṣṇu* (*Varāhpurāṇa*, 153.42). During *śrādha* ceremony three pits deserve to be created having three sticks of *khadira* wood (*Vāyu-mahāpurāṇa*, 74.9). *Yajña* is considered to be an integral part of Indian culture and tradition. The sacrificial post in the *yajña* is made of *khadira* wood (*Plants: Myths and Tradition in India*, 14). A person wishing to subjugate the mind of the sovereign of his country, or an all round improvement of his social status, should pour on the sacrificial fire kindled with twigs of a *khadira* tree, a hundred thousand libations of clarified butter containing grains of sun dried rice (*Agni-purāṇa*, 308.3). The wood of *khadira* should be used for lighting the sacrificial fire (*Matsya-mahāpurāṇa*, 93.27).

3.3.4 Tulasī: Devotees who worship God, take the leaves of *tulasī* without fail. The *Skanda Mahāpurāṇa* suggests that one should worship *Vāsudeva* with one thousand sprouts of *tulasī* leaves (*Skanda-Purāṇa*, 2.9.29.16). It also adds that he who worships *Hari* and *Hara* with bunches of *tulasī*, is not reborn in any other womb (*Skanda-Purāṇa*, 2.4.23.13). If a man worships even once with the pure, fragrant and unbroken leaves of glorious *tulasī*, *Yama* wipes off the sin of that man. Sins are done away with if offering are made with *tulasī* to *Rāma* (*Skanda-Purāṇa*, 2.5.8.5). Worshipping *Viṣṇu* by *tulasī* brightness, happiness, fame, wealth, noble family, good character, wife, son, daughter, wealth, kingdom, health, knowledge and special knowledge (of *Vedas*, *Vedāṅgas*, science, *Purāṇas*, sacred texts) are in hand birth after birth (*Padma-Purāṇa*, 1.60.111-113).

¹⁶ धात्रीछायां समाश्रित्य कुर्यात्पिण्डं तु यो नरः । प्रयांति पितरो मुक्तिं प्रसादान्माधवस्य तु ॥ (*Skanda Purāṇa*, 2.4.12.76)

¹⁷ महादेवस्वरूपोऽयं बिल्वो देवैरपि स्तुतः । (*Śiva Purāṇa, Vidyeshvara Samhitā*, 22. 22)

Śrimaddevībhāgavat Mahāpurāṇa (9.24.45) has stated the benefit of wearing garland made up of *tulasī*. *Skanda Purāṇa* says that leaves of *tulasī* are dear to God *Viṣṇu* just like *Padmā* to Goddess *Lakṣmī* who has come out of the ocean of the milk (*Skanda- Purāṇa*, 2.5.8.13). *Padma Purāṇa* also quotes that *tulasī* is dear to *Viṣṇu* and he is worshipped with *tulasī* leaves. By doing so dirt of sins are destroyed in *Kali* age (*Padma- Purāṇa*, 1.61.12-13).

3.3.5 *Aśvattha*: *Śrāddha* ceremony is related to our *Pitṛas* and one has to perform rites and rituals related to this ceremony. According to the *Skanda Purāṇa*, for protection of *Pitṛas*, an *aśvattha* tree should be planted with a concentrated mind. It should be nourished like a son or King without any partiality. That *aśvattha* should be joined in wedlock with *śamī* tree. As long as the earth holds that *aśvattha*, the family is also sustained. Men who cause that *aśvattha* plant to grow become rid of sins after falling on the ground i.e. after death; endowed with auspiciousness, they attain excellent womb (*Skanda Purāṇa*, 6.215.53-55). While mentioning the due order the vessels for the *bali* (Oblation) to *Pitṛas*, it has been said if the oblation is kept in the cup made of *palāśa* leaf and offered the benefit of *Brahmavarcastva* (the Brahminical splendour). In the *aśvattha* (holy fig tree) it is *vasubhāvana* (outcome of wealth) (*Brāhmānda Purāṇa*, 2.3.11.34-35).

3.4 Economic Importance of Plants

Plants have been integral part of an Indian Culture from time immemorial. And, when one talks about the Indian Culture, the role of four *Puruṣārthas* i.e. *dharma*, *artha*, *kāma* and *mokṣa* in shaping the destiny of human being cannot be ruled out. Of these *Puruṣārthas*, *artha* has special significance as it is related to economic activities. Here one would be astonished to know that here too plants have vital role to play. Many of the industries are associated with plants with one way or the other.

3.4.1 Garments: Garment industry was in quite advance stage in ancient India. Plants had major role to play in enriching this industry. *Vāyu Purāṇa* refers that plants as the prime source of garment products (*Vāyu Purāṇa*, 8.88). Another important *Purāṇa*, *Vāmana Purāṇa* (14.63) hints towards making garments from *kārpāsa*, *cīnānsuka* (*Vāmana Purāṇa*, 11.59) and *muñja* (*Vāmana Purāṇa*, 11.45). *Kūrma Purāṇa* states that ‘mekhalā’ (a garment to cover waist and downwards) should be made with either ‘muñja’ or ‘kuśa’ (*Kurma Purāṇa*, U-12.14). Garments made of ‘kārpāsa’ and ‘kaṣāyaka’ have also been discussed in this *Purāṇa*. It is worth mentioning that paste of *śveta* and *rakta candana* was used as cosmetic and bathing material in *Purāṇic* age (*Vāmana Purāṇa*, 51.64, 67.36).

3.4.2 Agriculture: Agriculture (Sanskrit; *kṛṣi*) is an important aspect related to plants and literature is replete with the references on *kṛṣi*. Vedic seers knew that agriculture was the only option for food security. The agriculture has been the chief source of livelihood to people in India. Agriculture depends on many factors like soil, farmers, seeds, farming techniques, agricultural implements, irrigation, manures etc. In *Purāṇās*, the agriculture was considered to be best among all occupations as it was very basis of leading the life with happiness and prosperity.

According to the *Mārkaṇḍeya Purāṇa* (46.65-75), *Brahmā* was regarded as the first inventor of agriculture. According to this, in the beginning of the creation of the earth, the soil yielded almost all type of corns, vegetables and fruits etc. However, as the time passed, the soil became unproductive. Thereafter, *Brahmā* churned the soil, and got various kinds of seeds. These seeds on their own accord started giving corns, fruits etc. Later on *Brahmā* realized that these seeds were also not growing properly. Then He brought the agriculture into practice. Seeing the ability of different classes of the people in the society he initiated one class of the people to do this

profession of agriculture. Since then the agriculture depended on human toil.

However, according to the *Viṣṇu Purāṇa* and *Śrīmad Bhāgavad Mahāpurāṇa* (4.18.29-32), a king named Pṛthu, the son of a king Vena was regarded as the inventor of agriculture. Pṛthu may be considered as a king who effectively brought the agriculture into practice.

3.5 Horticultural Importance

Horticulture is related to intensive plant cultivation meant for human use. It is primarily related to gardening both at individual and institution level. It includes both food (fruits and vegetables etc.) and non-food (flowers, trees and medicinal herbs etc.) crops. Horticulturists apply their knowledge and skills especially for plant propagation, cultivation, resistance to insects, diseases, and environmental stresses. It has also to deal with germination of seeds, plant propagation, nutrition and manuring of plants, growth and conservation of plants. It can undoubtedly be said that that horticulture happens when people are in intimate, intensive contact with plants. It is the interface between people and plants.

Purāṇic literature is replete with the facts relating to the plants. Planting trees in gardens for religious and social service has been allotted a special place in the construction of human settlements. According to the *Purāṇas*, attached to every house there should be a *vrkṣavātikā*, *puṣpavāṭī* etc. where fruit trees and flowering plants could grow. As in all hot climates an expanse of water was an almost essential feature of the Purāṇic gardens, they also contained artificial lakes and pools.

3.5.1 Trees Plantation: *Purāṇas* have discussed about the effects of different trees planted around the dwelling of man. According to it the trees known as *plakṣas*, should be planted to the north of the dwelling house, the *vamas* on the east, the mangoes on the south, and the *aśvattha* on the west.¹⁸ The *Purāṇa* further adds that thorny shrubs should be so planted as to edge the southern boundary of the ground of a house. The flower garden should be laid out adjoining a dwelling house, or blooming plants of *tila* should be cultivated therein.¹⁹ The *Agni Purāṇa* suggests that the trees should be planted after having worshiped the *Brāhmanas* and their sovereign, the moon god, and under the auspices of the asterisms presided over by the wind god, *Prajāpati*, and the god *Viṣṇu* respectively (*Agni purāṇa*, 282. 3).

Regarding the plantation of trees and their maintenance, the *Agni Purāṇa* says that trees such as *ariṣṭa*, *punnāga*, *śirīṣa*, *priyaṅgu*, *aśoka*, *kadalī*, *jambū*, *bakul*, *daḍīma*, or any other tree planted in a garden should be watered, each morning and evening, during the summer months, and on each alternate day during winter, and at the break of dawn during the rains when the earth would be dry and require watering.²⁰

It adds that trees planted in rows, twenty cubits apart, should be deemed as the best planted, while those having a space of sixteen cubits should be deemed as ranking second best in fruitfulness. Trees should be transplanted twelve times. Nor should they be planted too close or adjoining each other, in which case branches that touch one another, should be lopped off with a chopper, as otherwise they would bear no fruits.²¹

¹⁸ प्लक्षश्चोत्तरतः शुभः । प्राग्वटो याम्यतस्त्वाम्न आप्येऽश्वत्थः क्रमेण तु ॥ (*Agni purāṇa*, 282.1)

¹⁹ दक्षिणां दिशमुत्पन्नाः समीपे कण्टकद्रुमाः । उद्यानं गृहवासे स्यात्तिलन्वाप्यथ पुष्पितान् ॥ (*Agni purāṇa*, 282.2)

²⁰ अरिष्टाशोकपुन्नागशिरीषाः सप्रियङ्गवः ॥ अशोकः कदली जम्बूस्तथा बकुलदाडिमाः । सायं प्रातस्तु घर्मर्तौ शीतकाले दिनान्तरे ॥ वर्षारात्रौ भुवः शोषे सेक्तव्या रोपिता द्रुमाः । (*Agni purāṇa*, 282.6–8)

²¹ उत्तमा विशतिर्हस्ता मध्यमाः षोडशान्तराः ॥ स्थानात्स्थानान्तरं कार्यं वृक्षाणां द्वादशावरम् । विफलाः स्युर्नरा वृक्षाः शस्त्रेणादौ हि शोधनम् ॥ (*Agni purāṇa*, 282.8–9)

3.5.2 Fertility & Treatment of Seeds: To increase the fertility of the seeds they are treated before sowing.

Arthaśāstra: According to the *Arthaśāstra*, seeds are to be soaked in dew and dried in the heat for seven days; those of pulses for three days and nights or five; stalks that serve as seeds are to be smeared at the cut with honey, ghee and pig's fat mixed with cow-dung; bulbous roots to be smeared with honey and ghee; and stone like seeds to be smeared with cow-dung.

Vṛkṣāyurveda: The *Vṛkṣāyurveda* of *Surāpala* deals with the treatment of seeds in some details. According to it, seed is extracted from dried fruits which become ripe in the natural course and season. It is then sprinkled with milk and dried for five days. It is then smoked with mustard seed mixed with *viḍaṅga*.²² Seeds sprinkled with milk, smeared with mustard and ash of *tila* and *brhatī*, rubbed with cow dung, and smoked with marrow sprout in no time.²³ Seeds sprinkled with milk, rubbed with cow dung, dried and profusely smeared with honey and *viḍaṅga* definitely sprout (*Vṛkṣāyurveda*, 54).

Mānasollāsa: *Mānasollāsa* also discusses the process of seed treatment. According to it, the first method is employed for the seeds of all kinds of trees. According to this method, the ripe fruits are first dried in Sun. Then they are kept covered with cow-dung for five days. They are perfumed with the *viḍaṅga* and the clarified butter (*Mānasollāsa-Bhūdharkriḍā*, 6-8). The other method is a special treatment given to the milky trees. According to this method, the seeds are soaked in the cow's milk continuously for ten nights. They are coated with the cow-dung and mixed with the ashes of *vyāghṛ* and with ashes of barley and wheat (*Mānasollāsa-Bhūdharkriḍā*, 9-10). Sowing being an important process in cultivation, it was given serious attention and care.

Brhatsamhitā: Various Sanskrit texts have described the fact that plants were propagated in ancient India by cutting and grafting. According to the *Brhatsamhitā*, grafting may be done in respect of the Jack tree, *aśoka*, plantain, eugenia, lemon, pomegranate, grape, *pālīvata*, *mātulūṅga* and jasmine creeper by smearing a branch with cow-dung and transplanting it on the branch of another; or it may be done by cutting off the trunk of a tree and transplanting it like a wedge on the trunk of another tree. Here the part when the junction is affected must be covered with coating of mud (*Brhatsamhitā*, 55. 4-5). The grafting should be done in *Śīsira* season for those plants which have not yet got branches; in the *Hemanta* season for those that have grown branches; and in rainy season for those that have large branches. The particular direction of the tree that is cut off should be kept up in grafting also (*Brhatsamhitā*, 55. 6). *Vṛkṣāyurveda* has also discussed the plant propagation through cutting and grafting.

3.5.3 Sowing of Seeds: Rainy season is the best time recommended for sowing all types of seeds and planting trees, etc. Autumn and spring are mediocre seasons for the purpose (*Viśvavallabha*, 4.1). Winter and summer are both contraindicated for plantation. A senior planter may plant trees if advised by some people. All seasons are equally good for plantation when extra effort is put on watering (*Viśvavallabha*, 4.2). Even a well grown crop does not yield full returns if grass is not weeded out. The yield is considerably reduced due to the grass (*Kṛṣi Parāśara*, 189). Crop from which grass is weeded out in *Śrāvāṇa* and *Bhādrapada*, doubles itself although full of grass later (*Kṛṣi Parāśara*, 190). Weeding should be done twice in *Āśvina*. Thus unripe crop grows like black gram (*Kṛṣi Parāśara*, 191). Hence every effort should be made to weed out grass. Farms free from weeds fulfil wishes of the farmers (*Kṛṣi Parāśara*, 192).

²² यथर्त्तपक्वात् फलतोविशोषिताद्विकृष्यबीजं पयसा निषिच्या ।

विशोषितं पञ्चदिनानि सर्पिषां विडङ्गमिश्रेण च धूपयेत्ततः ॥ (*Vṛkṣāyurveda*, 52)

²³ क्षीरनिषिक्तं बीजं बृहतीतिलभस्मसर्पिषां लिप्तम् । गोमयमृदितमथोप्तं सद्यो जायेत धूपितं वसया ॥ (*Vṛkṣāyurveda*, 53)

3.5.4 Growth of Plants: The process of good growth of plants has been well discussed in *Agni Purāna*. It says that a good growth of trees is secured by sprinkling them with the washing of fish. Fish and meat, powdered and mixed with a quantity of pulverised *viḍaṅga*, should be sprinkled over a tree by way of a pregnancy present, or for the purpose of curing it of all distempers (*Agni Purāna*, 282.13).

The *Kṛṣi Parāśara* recognizes the importance of manure for crops and says that without manure the paddy simply grows up, but does not yield any fruit.²⁴ *Kāśyapīyakṛṣisūkti* says that cow-dung, goat-dung, and compost should be spread on the land to increase its potency (*Kāśyapīyakṛṣisūkti*, 6.266). 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 (*Kāśyapīyakṛṣisūkti*, 6.435-36). Trees do not produce fruits and flowers merely for being planted; hence we are going to state the rule relating to the nourishment of plants as framed by the sages.²⁵ If one applies powdered oil-cakes of white mustard or sesamum at the root of *kharjūra*, *bilva* and *lakuca* trees—all these three grow; and the mango tree grows if it is watered with water in which husks are soaked; *āirāvata* and *niculapatra* grow by simple watering, but they grow also if watered with flesh and paddy washing (*Upavana Vinoda*, 9.148). Mango trees bear very fragrant and sweet fruits at an early date if they are watered with decoction made up of milk, *pañcapallava*, i.e. leaves of *āmra*, *aśvattha*, *vama*, *plakṣa* and *yajñadruma*, together with the fat of deer, boar, jackal, elephant, horse etc.²⁶ Any fruitful tree verily bears very sweet fruits if any

experienced or wise man waters its roots with milk (*Upavana Vinoda*, 9.170). One should boil the flesh, fat and marrow of deer, pig, fish, sheep, goat and rhinoceros in water, and when it is properly boiled one should put the mixture in an earthen pot and add into the compound milk, powders of sesamum oil-cakes, *māṣa* boiled in honey, the decoction of pulses, clarified butter and hot water. There is no fixity as to the amount of any of these elements; when the said pot is put in a warm place for about a fortnight the compound becomes what is called *kunapa* water which is very healthy for plants in general (*Upavana Vinoda*-9/171-174). In order that the trees should grow and produce abundant fruits, King *Someśvara* recommends various processes (*Mānasollāsa-Bhūdharkriḍā*, 35-86) to be employed.

3.5.5 Disease of Plants: As regards the various plants diseases the *Agnipurāna* states that in cases where barrenness would be apprehended, the leaves and branches of a tree should be sprinkled; the leaves and branches of a tree should be sprinkled over with a solution of cold water, saturated with *viḍaṅga*, clarified butter, pulverized *mudga*, *māṣa* and *kulattha* pulse. Similarly a tree sprinkled with a solution of cold water, and clarified butter, becomes laden with abundant fruits and blossoms.²⁷

Viṣṇudharmottara Purāna: *Viṣṇudharmottara Purāna* has also come up with certain description in this regard. It says that if the trees get some disease, first of all they should be watered with cold water and pasting cow dung, ghee and mud (*Viṣṇudharmottara Purāna*, Part II, 30.18). The sprinkling with cold water which have fish is good for mango tree (*Viṣṇudharmottara Purāna*, Part

²⁴ ततो वपनकाले तु कुर्यात् सारविमोचनम् । विना सारेण यद्धान्यं वर्धते फलवर्जितम् ॥ (*Kṛṣi Parāśara*, 111)

²⁵ फलकुसुमसंपदुचिता रोपणतो भवति केवलान्न यतः । पोषणविधिमथ संमतमनोकहानामतो वक्ष्ये ॥ (*Upavana Vinoda*, 9.147)

²⁶ कुरङ्गकटिसारङ्गशुगालाश्वादिमेदसा । क्वथितेन सदुग्धेन पञ्चपल्लववारिणा । कृतसेको भवेदाशु सहकारोत्तिसौरभः ॥ (*Upavana Vinoda*, 9.150)

²⁷ विडङ्गघृतपङ्कत्कान्सेचयेच्छीतवारिणा । फलनाशे कुलत्थेश्च माषैर्मुद्गैर्यवैस्तिलैः ॥

घृतशीतपयः सेकः फलपुष्पाय सर्वदा । आविकाजशकृच्चूर्णं यवचूर्णं तिलानि च ॥ (*Agni Purāna*, 282.10-11)

II, 30.23). The *saptaparṇa* tree becomes attractive with the sprinkling of milk. (*Viṣṇudharmottara Purāna*, Part II, 30.28). For buds of *mallikā* fragrant water is most beneficial (*Viṣṇudharmottara Purāna*, Part II, 30.30). For *kharjura*, coconut, bamboo and *kadalī* trees, the sprinkling and salt with water causes their growth. The *viḍaṅga* with rice and flesh is good for all trees (*Viṣṇudharmottara Purāna*, Part II, 30.31-32).

Upavana Vinoda: Substances of pungent, bitter or caustic tastes are destructive of the windy humours of trees; and those having bitter, hot, salty and acid juice are destructive of biles, and those with graceful, sweet, acid or salty juice are destructive of phlegm (*Upavana Vinoda*, 13.180). The affectations of windy humour is alleviated through the application of the graceful things like clarified butter mixed with flesh juice; the affectation through the bile is alleviated through the application of things that are cold and graceful mixed with water, and affectations through phlegm is modified through application of acid things mixed with hot water, or through pungent and bitter things (*Upavana Vinoda*, 13.181).

Vṛkṣāyurveda: Diseases caused by imbalance of *vāta* can be cured by flesh, marrow, and ghee. The sprinkling of *kuṇapa* water also removes all the disorders caused by the *vāta* element (*Vṛkṣāyurveda*, 185). The diseases of *vāta* type can be quickly warded off by liberal fumigation of the mixture of the fat of the hog, oil of Gangetic porpoise, ghee, hemp, hair of horse, and cow's horn-boiled and set to a decoction (*Vṛkṣāyurveda*, 186). Trees suffering from wind-related diseases should be sprinkled with bitter juices of plants to generate heat in plants with watery decoction of oily flesh, or should be sprayed with powdered cow-dung (*Viśvavallabha*, 8.10).

The diseases of the *kapha* type can be overcome with bitter, strong, and astringent decoctions made put of *Pañcamūla* with fragrant

water (*Vṛkṣāyurveda*, 187). For warding off all *kapha* type of diseases, the paste of white mustard should be deposited at the root and trees should be watered with a mixture of sesame and ashes (*Vṛkṣāyurveda*, 188). Pungent, hot, dry and bitter decoctions and juices quickly set right the phlegm disorder. A tree suffering from phlegm gets relief if sprinkled with warm water, too (*Viśvavallabha*, 8/20). A wise person should treat all types of trees affected by the *pitta* type of diseases with cool and sweet substances (*Vṛkṣāyurveda*, 190). When watered by the decoction of milk, honey, *yaṣṭimadhu* and *madhūka*, trees suffering from *pitta* type of diseases get cured (*Vṛkṣāyurveda*, 191). Watered with the decoctions of fruits, *triphalā*, ghee, and honey the trees are freed of all diseases of the *pitta* type (*Vṛkṣāyurveda*, 192). Trees suffering from damage due to frost or scorching heat should be externally covered. Sprinkling with *kuṇapa* water and milk is also advisable (*Vṛkṣāyurveda*, 199). One should take up the ashes of trees struck by lightning, throw the same around other trees and this will ensure the latter against the cold. These have power to allay even burning fire (*Upavana Vinoda*, 8.79). A frost burn tree shoots forth if a paste of *aṅkola*, milk, clarified butter, and honey is applied to the root, if fresh soil, cow dung and oil are provided, if sprinkled and smeared with *tila* and milk and sprinkled in the end with water (*Viśvavallabha*, 8.48). The trees can be protected from snowfall if the pits are covered with the soil brought from the pit of the tree hit by the lightning (*Mānasollāsa-Bhūdharkriḍā*, 27). For warding off damage from hail storm, cooked rice mixed with curd and rock salt should be scattered on the ground surface (*Mānasollāsa-Bhūdharkriḍā*, 28). A tree struck and burned by lightning does produce shoots in no time if it is liberally sprinkled with powdered *madhūka*, *mudgā*, *tila* and *māṣa* gram mixed in milk along with *yava* (*Viśvavallabha*, 8.53). When anointed with *vidārī*, sugar, *nāgajihvā*, and Sesame mixed together and when sprinkled with milk-water, trees struck with lightning put forth

healthy sprouts (*Vṛkṣāyurveda*, 206). The broken trees should be smeared with the paste of bark of *plakṣa* and *udumbara* mixed with ghee, honey, wine and milk and the broken part should be firmly tied together with the rope of a rice stalk. Fresh soil should then be filled in the basin around the tree, sprinkled immediately with the milk of buffalo and flooded with water. Thus they recover (*Vṛkṣāyurveda*, 200-201). One should besmear the branch of tree broken by wind with the barks of *plakṣa*, *arka* and *udumbara* trees pasted in ghee, honey and beeswax mixed with milk; should set it the broken parts as before, and tie it to a post fixed nearby, and apply finely powdered earth to the fractured part. And if sprinkled with milk over and over again, and the plant watered at the root, the tree gets round and produces abundance of flowers and fruits (*Upavana Vinoda*, 13.186). If the branches fall off, the particular spot should be anointed with the mixture of honey and ghee and sprinkled over by milk and water so that the tree will have its branches reaching the sky (*Vṛkṣāyurveda*, 203). If the trees are dried due to bad soil, the original soil from the root should be removed and it should be replaced by healthy soil and milk water should be sprinkled over it (*Vṛkṣāyurveda*, 208). The wounds of the trees are healed by the treatment of anointing with the paste of the bark of *nyagrodha* and *udumbara*, cow dung, honey and ghee (*Vṛkṣāyurveda*, 210). After trees show symptoms of ulcer, the trees should be treated. At the outset the trees should be cleared of ulcers and the like (i.e. whatever is colourless and wet) with a knife. Then a paste made of *viḍaṅga*, ghee and silt must be applied to those parts and they should be sprinkled with water and milk (*Bṛhat Samhitā*, 55.15). Tender plants suffering from excess watering should be scratched with nails, uprooted, and every root should be smeared with the mixture of honey and *viḍaṅga* and then should be watered (*Vṛkṣāyurveda*, 219). *Triphalā* and *kuberākṣī* provided at the root followed by watering and smearing with paste of *viḍaṅga*, *īṅgudī*, and honey

are measures recommended for the treating the indigestion caused by excessive intake of food (manure) (*Viśvavallabha*, 8.29). When a tree suffers from incapacity to digest water, it is always pale, devoid of leaves, full of ants and the smell of fish, and in places devoid of barks, the following treatment has to be adopted in this case: one should strike at the root of the tree suffering from indigestion to draw the poisonous sap out of the trunk, apply to the affected place a paste of honey, *viḍaṅga* powder and sesamum and cover it with earth and sprinkle it with water and milk. The atrophy of a tree is radically cured if it be besmeared with the said paste after it has been sprinkled with sugar and sesamum mixed with milk and water and then fumigated (*Upavana Vinoda*, 13.191-193). Applying the paste of sugar, *tila* and cow's milk and sprinkling the same, mixed with water all the dehydrated trees are completely cured (*Viśvavallabha*, 8.70). The trees which get dotage through repeated production of fruits and flowers, when bathed (treated) in *kuṇapa* water and milk again and again, do surely bear fruit. (*Upavana Vinoda*, 13.189). When the fruits of a tree are destroyed prematurely, it should be watered with milk that has been cooled after being boiled, with horse gram, black gram, sesamum and barley. Being treated thus, it will have abundant flowers and fruits (*Bṛhat Samhitā*, 55.16). One should carefully protect trees against destructive influence of dew, strong wind, smoke, fire and spiders (*Upavana Vinoda*, 8.77).

3.5.6 Pests and their management: During the long history of crop cultivation in India, insect pests have always been a biotic constraint. There are descriptions regarding pests and their management in Sanskrit texts. Field pests and store house pests of crops were evidently as familiar and dreaded enemies of the farmer, then as now. Large and visible pests like beetles, bugs and caterpillars, and invisible enemies like fungi and bacteria attacked crops on the field. In *Rgveda*, it is mentioned that several insects and pests used

to destroy the standing crops. One should do well to realise that worms are at the roots of plants affected with tubercles, or of plants for the paleness of buds and flowers of which no other particular cause can be assigned; and one should do well to root out these worms with care. If fresh urine of cows, clarified butter, *viḍaṅga*, mustard and sesamum are mixed together and applied to the trunk, then fumigated and watered with milk and water, these plants grow (*Upavana Vinoda*, 9.183).

Destruction of plants by fungi and pestiferous insects, are referred to in ancient literature. For the first time, in Vedic literature, we find a hymn in *Atharvaveda* which refers to the destruction of corns by vermins, such as the *tarda* (borer), *jabhya* (snapper), the *upakavasa* (a noxious insect injurious to health), *vyadvaras* (rodents), *samanka* (hook), the mole, and such other devourers of corn. There are *mantras* in *Atharvaveda*, which say-

“O pleasant man and woman! Kill injurious rat, boring beast and cut off their head and cut their ribs. Bind fast their mouths to enable them so that they do not eat barley and thus make safety of crop. Let the injurious insects, birds and locusts, noxious insects and grass hoppers fly away devouring not and injuring nor the corn like the priest who does not accept uncleaned things for oblation. Let the injurious insects, the beasts destroying crops, the boring beasts, realize that we destroy all those animal who eat and spoil our crops be they in the wood or be they piercing ones”. (*Atharvaveda*, 6.50.1-3)

Commenting on these *mantras*, *Sāyaṇa* adds more names of these pestiferous insects- *mūṣaka*, *śalabha*, *pataṅga*, *tittibha*, *kīma*, *komika*, *hariṇa*, *salyaka*, *godh* etc. These insects injure young shoots. It also informs that wild animals destroy the plants with their teeth. *Tarda* is the bird known as wood-pecker. This word has been used generally for the birds who are harmful for crops. The word *pataṅga* has been used for locusts.

Jabhya is the insect called weevil which eats into the grains. It eats up barley etc. *Upakvasa* is the name of a poisonous insect that eats away grain or seeds. Their killing has been advised. *Tṛṣṭjambha* is a insect with sharp teeth.

***Viśvavallabha*:** *Viśvavallabha* says that if without any disturbance in the three elements if a tree loses its shoots, branches dry at the end, barks fall off, leaves lose colour and trees appear very sickly, the cause should be traced to insects (*Viśvavallabha*, 8.35). Insects are of two types, external and internal. Some external insects lives on bark while others on leaves, flowers, and fruits. (*Viśvavallabha*, 8.36). An insect named *kāṇḍāraka* (borer) lives in between the root and the branches. The tree can be destroyed when infested by it. As such it should be treated (*Viśvavallabha*, 8. 37). *Viśvavallabha* says that insects originate from soil, water and *dohada* (a special kind of manure. It is used by the experts to produce out of season, flowers on the trees, creepers and bushes etc.) (*Viśvavallabha*, 8.38).

***Vṛkṣāyurveda*:** If the farm is infested with rats, etc. a certain *mantra* has to be written on the plantain leaf with lac dye and should be kept at the centre of the field in the triangle (*Vṛkṣāyurveda*, 161-162). The *mantra* has the meaning- Om *Svasti!* (Let peace prevail). The Lord of *Hanūmān* from *Kiṣkindhā*, whose feet are ever victorious, who has displayed his valor in great disasters and by capturing the Sun, who is the Lord of lords, commands the rats, the shrews, grasshoppers, etc. in this particular land, “Leave this land and go elsewhere immediately on seeing this order of the king, otherwise the king will use powerful like the thunderbolt, to kill, burn, and destroy all of you. *Hum Pham Svāhā*. After writing this *mantra* on a leaf and having recited it, the leaf should be buried in the ground. This will destroy all insects, kites, rats, ants, etc. (*Vṛkṣāyurveda*, 163).

To remove insects both from roots and branches of the trees, wise man should water the

trees with cold water for seven days (*Vṛkṣāyurveda*, 193). The worms can be overcome by the paste of milk, *kuṇapa* water, and cow dung mixed with water and also by smearing the root with the mixture of white mustard, *vacā*, *kuṣṭha* and *ativīṣā* (*Vṛkṣāyurveda*, 194). The worms accumulated on trees can be treated quickly by smoking the tree with the mixture of white mustard, *rāmaṭha*, *viḍaṅga*, *vacā*, *uṣaṇā*, and water mixed with beef, horn of buffalo, flesh of pigeon, and the powder of *billāta* (*Vṛkṣāyurveda*, 195). Anointing with *viḍaṅga* mixed with ghee, watering for seven days with salt water, and applying ointment made out of beef, white mustard and sesame destroy the worms, insects etc (*Vṛkṣāyurveda*, 196). Creepers eaten away by insects should be sprinkled with water mixed with oil cake. The insects on the leaves can be destroyed by sprinkling the powder of ashes and brick-dust (*Vṛkṣāyurveda*, 197). A wound caused by insects heals if sprinkled with milk after being anointed with a mixture of *viḍaṅga*, Sesame, cow's urine, ghee and mustard (*Vṛkṣāyurveda*, 198).

The worms accumulated on the trees can be treated quickly by smoking the tree with the mixture of white mustard, *rāmaṭha*, *viḍaṅga*, *vacā*, *uṣaṇa*, and water mixed with beef, horn of buffalo, flesh of pigeon, and the powder of *bhillāta* (*Vṛkṣāyurveda*, 195). A powder prepared from barks of *aragvadha*, *ariṣṭa*, *karañja*, *saptaparṇa*, and *viḍaṅga* soaked for a night in cow's urine and pasted on the affected parts of the tree frees them from external insects. (*Viśvavallabha*, 8/39). A paste made from the mixture of *viḍaṅga*, *siddhārtha*, *trikaṭu* (this is an aggregate of three pungent substances like ginger, black and long piper or like dry ginger, pepper and *pippalī*), cow's urine, *bhallata* and *vacā* applied to the tree destroys insects living in between the branches retrieving the colour of the barks (*Viśvavallabha*, 8.40). Fumigation by the mixture of cow's horn, *bhallataka*, *nimbu*, *mustā*, *vacā*, *viḍaṅga*, *ativāsa*, *karañja*, *sarja*, *siddhārthaka* and *sinduvāra* draws

outs insects from within trees (*Viśvavallabha*, 8. 41).

Applying paste of dung of cat, jackal, and hog mixed in *siddhārtha* and cow's urine, draws out insects hidden inside the trees and fumigation by the same mixture along with clarified butter wipes out the external ones (*Viśvavallabha*, 8.42). Fumigated with a mixture of *nimba*, *siddhārtha*, *vacā*, *viḍaṅga*, *hingu* and barks of *arjuna*, in combination with *tila*, milk and water and sprinkled with mixture of milk and water a tree infested with insects is freed from the pest and once again becomes green with a new growth of branches and tender leaves. (*Viśvavallabha*, 8. 43). All the trees can be relieved from insects by sprinkling water mixed with fruits and bark of *īngudī*, and raw sugar. By applying a paste of milk, clarified butter, raw sugar, and *īngudī* or by fumigating with the same and by tying dog's bone on them will rid the trees and insects (*Viśvavallabha*, 8.44). When *palāśa* tree, planted in between other trees, bears fruits, it prevents the water related diseases and water borne insects from infecting other trees as do *aśoka* (*Viśvavallabha*, 8. 45). In between smaller trees, the wise planter should plant densely in the field *śatapuṣpa* and *kuberākṣi* as a result of which he can get rid of insects (*Viśvavallabha*, 6. 5). All types of worms are destroyed if one applies to the roots of trees the barks of *karañja*, *āragvada*, *ariṣṭa*, *saptaparṇa*-pasted in the urine of cows together with *viḍaṅga* and *musta* (*Upavana Vinoda*, 9. 184). Two methods are given for the destruction of worms and insects in *Mānasollāsa*. Firstly, the trees should be perfumed with the smoke produced by burning *niśā*, *viḍaṅga*, *siddhāratha* and *arjuna* flower mixed with the flesh of *rohita* fish. Besides killing insects and worms, it also helps in the luxuriant growth of flowers and fruits (*Mānasollāsa-Bhūdharkriḍā*, 29-30). Secondly, the insects and worms can also be killed if the trees are perfumed with the smoke caused by burning of *viḍaṅga*, *hingu*, *sindhura*,

marica, ativīṣa, vaca, bhallātaka and the horns of the buffalo mixed together in equal quantities. This process also destroys all the diseases of plants (*Mānasollāsa-Bhūdharkriḍā*, 31-32)

Ṛgveda: In the Ṛgvedic period, the cultivators kept away birds from corn fields by making din and noise (*Ṛgveda*, 10.68.1). In *Ṛgveda* a prayer is offered to save the people from the jaws of famine (*Ṛgveda*, 8. 118). *Indra* is invited to set the people free from famine (*Ṛgveda*, 8.55). Ancient Indians also made scare crows to scare away birds from standing crops. Towards harvest time, they used to set tracks, fix sticks and snares to trap animals who come to devour their standing crops. Besides, the animals were frightened of by a shadow figure made of straw which was placed in the field. The *Mahābhārata* refers to the employment of a state functionary for the protection of agriculture, for, it is stated that if the cultivators felt a sense of insecurity, the king was to earn ill fame thereby (*Mahābhārata-Sabhāprva*, 80). Thus the monarchs generally exercised vigilance on the development of agriculture by adopting sound policy.

Matsya Purāṇa: Going by the *Matsya Purāṇa*, it becomes clear that Purāṇic seers knew techniques for promoting inflorescence and fruiting. It says- The country where the *Airāvati* river has its origin there are sweet smelling lotuses of various colours. Some of the blooming lotuses looked like the rising Sun, some like the Moon and the Sun. Some looked like bright gold, and some resembled the *śan* flower. The place was full of growing lotuses, of which some looked like the leaf of *śirīṣa*, some having five colours, others many (*Matsya Purāṇa*, 118. 39-41).

Purāṇic seers not only focused and promoted plantation but also tried to ensure their protection. They prescribed punishments for those

who were involved in felling trees. *Kūrma Purāṇa* is of the view that one should not cut trees known as *chaitya*.²⁸ A person who steals even grass, vegetable he surely falls in hell (*Kūrma Purāṇa, Uttarārdha*, 16.2). A person who receives the flower, vegetables, water and firewood, besides fruit and roots without being specifically given, it amounts to theft.²⁹ The *Brāhmaṇas* can take the flowers for the adoration of the Gods, but even the flowers should not be collected without the permission of the owner (*Kūrma Purāṇa, Uttarārdha*, 16.8). For felling or cutting or injuring fruit giving trees one should chant *Rk* for one hundred times as an atonement to get rid of his sin. According to *Agni Purāṇa* stealing flowers, fruits and wood is immoral act which brings sin to the concerned person.³⁰

Purāṇas promoted plantation in a unique way. They came up with descriptions which dealt with the fruits of planting trees. *Brahmavaivarta Purāṇa* says-

In case of the coconut trees are planted in the *āśrama*, the householder achieves riches, these trees when planted towards the east or north east bestows son to the householder. The mango tree bestows welfare all round. In case it is planted to the east of the house, the householder achieves enough of riches and it bestows welfare everywhere. The trees of wood-apple, jack fruit, the lemon and jujube, if planted on the southern side, the householder gets riches all the times. The prosperity of householder increases with them. The trees of *sāla* fruit, banana, myrobalon, when planted in the southern side they increase the friends. They are auspicious for all sides, the betel nut tree when planted on the southern side provides the householder with riches, son and fortunes, in case they are planted in the west, they bestow pleasure and in case they are planted in the north east, they

²⁸ चैत्यं वृक्षं न वै छिन्द्यान्नाप्सु ष्ठीवनमुत्सृजेत् ।। (*Kūrma Purāṇa, Uttarārdha*, 16 / 79)

²⁹ पुष्पे शाकोदके काष्ठे तथा मूले तृणे फले । अदत्तादानमस्तेयं मनुं प्राह प्रजापतिः ।। (*Kūrma Purāṇa, Uttarārdha*, 16.7)

³⁰ फलैधः कुसुमस्तेयमर्धैर्यं च मलावहम् । (*Agni Purāṇa*, 168. 40)

bestow welfare all round. *Campaka* planted anywhere is beneficial to all and sundry.³¹

Padma Purāṇa: *Padma Purāṇa* has also described the fruits for planting various trees. It says-

By planting an *aśvattha* tree one would become wealthy. The *aśoka* tree destroys grief. The *plakṣa* tree is said to give the fruit of a sacrifice; the *kṣira* tree is said to cause long life. *Jambuki* gives daughters; *daḍima* gives a wife. *Aśvattha* leads to destruction of diseases; *palāśa* takes one to *Brahman*. The planting of *aṅkola* trees leads to expansion of the family. Health is caused by the planting of *khadira* tree. The sun is ever pleased with the *nimba* shoots. God *Śiva* is pleased when *śri* tree is planted; and *Pāravatī* is pleased with the red *lodhra* being planted. The celestial nymphs are pleased with the planting of *śimśapā*, and best *gandharvas* with the *kunda* tree. One would get group of servants of one plants *tintidika* tree. *Candana*, and *panasa* also gives religious merit and wealth. Planting of *campaka*

gives good fortune. Planting of *vakula* expands family. Planting of the grape-creeper makes one have an all-beautiful wife. Similarly planting of *koli* causes sexual enjoyment; planting of *ketakī* destroys one's enemies.³²

3.5.6 Consecration of trees: Consecration of trees has been unique concept of Purāṇic age. According to the *Purāṇas*, it imparts enjoyment in this world and salvation in the next. Water containing solution of the drugs known as *sarvaṁśadhi* should be poured over the heads of the trees from whose boughs garland should be hung down, and which should be plastered over with rice paste and covered over with pieces of cloth. The ceremony of *karṇvedha* (perforation of the balls of the ears) should be performed up to them, with needles made of gold.³³ And on the masonry platform around them, the *adhivāsa* rite of the pitchers should be celebrated. Offering should be made in honour of the God *Indra* and his companion deities, and *homa* ceremony should be performed unto *vanaspati*. The Earth Goddess should be

³¹ आश्रमे नारिकेलश्च गृहिणां च धनप्रदः । शिबिरस्य यदीशाने पूर्वे पुत्रप्रदस्तरुः ॥
सर्वत्र मङ्गलार्हश्च तरुराजो मनोहरः । रसालवृक्षः पूर्वस्मिन्नुणां संपत्प्रदस्तथा ॥
शुभप्रदश्च सर्वत्र सुरकारो निशामय । बिल्वश्च पनसश्चौव सुरकारो निशामय ॥
प्रजाप्रदश्च पूर्वस्मिन्दक्षिणे धनदस्तथा । संपत्प्रदश्च सर्वत्र यतो हि बर्धते गृही ॥
जम्बूवृक्षश्च दाडिम्बः कदल्यान्नातकस्तथा । बन्धुप्रदश्च पूर्वस्मिन्दक्षिणे मित्रदस्तथा ॥
सर्वत्र शुभदश्चैव धनपुत्रशुभप्रदः । हर्षप्रदो गुवाकश्च दक्षिणे पश्चिमे तथा ॥
ईशाने सुखदश्चैव सर्वत्रैव निशामय । सर्वत्र चम्पकः शुद्धो भुवि भद्रप्रदस्तथा ॥²⁵ (*Brahmavaivarta Purāṇa, Kṛṣṇajñanmakhaṇ*, 103. 34-40)

³² तीर्थेषु पिण्डदानादिन्नोपकाणां ददन्ति ते । यत्नेनापि च राजेन्द्र अश्वत्थारोपणं कुरु ॥
स ते पुत्रसहस्रस्य कृत्यमेकः करिष्यति । धनी चाश्वत्थवृक्षेण अशोकः शेकनाशनः ॥
प्लक्षो यज्ञप्रदः प्रोक्तः क्षीरीचायुः प्रदः स्मृतः । जम्बुकी कन्यकादात्री भार्यादा दाडिमी तथा ॥
अश्वत्थो रोगनाशाय पलाशो ब्रह्मदस्तथा । अज्रेलो कुलवृद्धिस्तु खादिरैणापि रोगिता ॥
निम्बप्रोहकाणां तु नित्यं तु येद्विवाकरः । श्रीवृक्षे शर्जो देवः पाटलायां तु पार्वती ॥
शिंशपायामप्सरसः कुन्दे गन्धर्वसत्तमाः । तिन्तिडीके दासवर्गा वज्जुले दस्यवस्तथा ॥
पुण्यप्रदः श्रीपदश्च चन्दनः पनसस्तथा । सौभाग्यदश्चम्पकश्च करीरः पारदारिकः ॥
अपत्यनाशकस्तालो बकुलः कुलवर्धनः । बहुभार्या नारिकेला द्राक्षा सर्वाङ्गसुन्दरी ॥
रत्तिप्रदा तथा कोली केतकी शत्रुनाशिनी ॥ (*Padma Purāṇa-1. 28. 23-32*)

³³ प्रतिष्ठां पादपानां च वक्ष्येऽहं भुक्तिमुक्तिदाम् । सर्वौषध्युदकैर्लिप्तान्पिष्टातकविभूषितान् ॥
वृक्षान्माल्यैरलङ्कृत्य वासोभिरभिवेष्टयेत् । सूच्या सौवर्णया कार्यं सर्वेषां कर्णवेधनम् ॥ (*Agni Purāṇa, 70. 1-2*)

invoked out of the heart of the trees by uttering *abhiṣeka* mantras.³⁴

The consecration of trees and gardens imparts the highest merit to the consecrator and absolves him of all sins and demerits (*Agni Purāna*, 70. 8). *Matsya Purāna* has also discussed the process of consecration of trees and gardens (*Matsya Purāna*, 59. 1-19). The *Purāna* says that the wise, who observes the rites meant for consecration of trees and dedicated to plantation of trees, obtains all his desires and attains to endless felicity. One, who plants even one tree according to the prescribed rites, resides in heaven for over 30000 years of *Indra*. The planter of trees, according to the prescribed rites, liberates the same number of his past and future manes and attains the highest perfection, and is never reborn on earth.

Padma Purāna has also described the method of consecration of trees (*Padma Purāna*, 1.28.1-18). The *Purāna* says that he, who, plants the trees as per prescribed rites, attains great prosperity making rebirth difficult. Even that man, who listens to this, or makes others to listen to it, is honored by Gods in the world of *Brāhman*. The trees alone make a sonless person have a son (*Padma Purāna*, 1.28.23-24).

3.6 Medicinal Importance of Plants

The plants were held sacred in Purāṇic age. Emphasizing upon the significance of herbs it has been stated that one who has a store of herbs is like a mighty king. Herbs are the embodiment of nourishment and strength, which regenerate the human mind and body. Apart from many other *Purānas*, *Agni* and *Garuḍa Purāna* have discussed

about the medicinal plant at length. *Agni Purāna* has described various categories of plants with their medicinal importance. These categories are- *daśmūla* (*Agni Purāna*, 279.22), *pañcapallava* (*Agni Purāna*, 224. 39), *pañcabhaṇa* (*Agni Purāna*, 299.25), *pañcamūla* (*Agni Purāna*, 285.2), *phalatraya* (*Agni Purāna*, 285.5), *rajanīdvaya* (*Agni Purāna*, 177.17; 265.6; 286.8, 23), *baḍaṅga* (*Agni Purāna*, 279.8), *saptadhānya* (*Agni Purāna*, 206.15), *saptavrīhi* (*Agni Purāna*, 212. 6), *trikaṭu* (*Agni Purāna*, 283.5, 19, 32; 302.7), *triphalā* (*Agni Purāna*, 258. 27; 279.46, 50; 280.48; 281.25; 283.6, 14, 42, 44) etc. Here there would be brief discussion regarding medicinal values of plants.

Purānas are replete with information on medicinal utilities of *Aśvattha*. According to *Padma Purāna*, it leads to destruction of diseases.³⁵ For setting broken bones, *Garuḍa Purāna* says that one should take equal parts of *aśvattha*, *triphalā*, *vyoṣa* and *guggulu* equal to their combined weight and mix. This compound has the virtue of setting broken bones.³⁶

***Agni Purāna*:** According to *Agni Purāna*, a decoction of the barks of *aśvattha*, *udumbara*, *plakṣa*, *madhuka* and *vama*, boiled with a copious quantity of water should be used in washing a wound, and for antiseptic purposes in general.³⁷ The same *Purāna* says that a woman, eager to be the mother of a child, should take every day, a quantity of thickened milk saturated with powdered *gulma*, *māṣa*, *tila* and *vrīhi* grass and the expressed juice of the root of *vaiṣṇavī*, *śrī*, bamboo, *darbha* and *aśvattha*.³⁸ *Agnipurāna* also describes decoction of *nyagrodha*, *triphalā*,

³⁴ हेमशलाकयाऽऽज्जनं च वेद्यां तु फलसप्तमकम् । अधिवासयेच्च प्रत्येकं घटान्बलिनियेदनम् ॥

इन्द्रादेशिवासोऽथ होमः कार्यो वनस्पतेः । वृक्षमध्यादुत्सृजेद्गणां ततोऽभिषेकमन्त्रतः ॥ (*Agni Purāna*, 70.3-4)

³⁵ अश्वत्थो रोगनाशाय (*Padma Purāna*, 1. 28. 26)

³⁶ अश्वत्थत्रिफलाप्योषाः सवराभिः समीकृतैः । तुल्यो गुग्गुलुना योज्यो भग्नसन्धिप्रसाधकः ॥ (*Garuḍa Purāna*, 171. 12)

³⁷ अश्वत्थोदुम्बरप्लक्षमधूकवटकल्कजैः । प्रभूतसलिलः क्वाथः सुखोष्णो व्रणशोधनः ॥ (*Agni Purāna*, 289. 30)

³⁸ गुल्ममाषतिलव्रीहिचूर्णक्षीरसितान्वितम् । अश्वत्थवंशदर्भाणां मूलं वै वैष्णवी श्रियोः ॥

मूलं दूर्वाश्वगन्धोत्थं पिबेत्क्षीरैः सुतार्थिनी । (*Agni Purāna*, 302. 15-16)

khadira, dārvī, atibalā, kuśa, nimba and *mūlaka* leaves for washing wound or an ulcer (*Agni Purāṇa*, 285.32-33). *Agni Purāṇa* further adds that a person suffering from cold and characteristic thirst should take decoction of *nyagrodha, lodhra, dādima* and *madhūka* mixed with honey and washing of rice (*Agni Purāṇa*, 285.13). *Nyagrodha* is one of the medicinal plants which is used in washing wounds. *Agni Purāṇa* says that a decoction of *aśvattha, udumbara, plakṣa, mahūka* and *nyagrodha* boiled with a copious quantity of water should be used in washing a wound and antiseptic purposes (*Agni Purāṇa*, 289.29).

Garuḍamahāpurāṇa: *Garuḍamahāpurāṇa* says that wise physician should employ a decoction of *triphalā, khadira, dārvī* and *nyagrodha* for washing all cuts, ulcers with an aching pain.³⁹ To the problem of dysentery, the *Garuḍamahāpurāṇa* says that sprouts of a *Nyagrodha* tree rubbed with the washings of rice should be administered for the purpose of curing any form of dysentery.⁴⁰ The *Purāṇa* says that gargles of a decoction of *vama, nimba* and *śamī* barks relieve the pain in the mouth due to the effects of poison.⁴¹ Medicinal oil cooked in combination with a decoction of *vama, udumbara, plakṣa*, the two kinds of *jambū, arjuna, pippalī, kadamba, palāśa, lodhra, tiṇḍuka, madhūka, āmra, sarjam badar, padmakeśar* and *śirīṣa* seeds brings on granulation even in old or long-standing sores, and facilitates their speedy healing (*Garuḍa-mahāpurāṇa*, 192.48).

The drugs *āmalakī, abhayā, Kṛṣṇa, vahni, bilva, agnimantha, śyonāka, kaśmarī* and *pamala*

used in combination form the best febrifuge and may be safely given in all diseases (*Agni Purāṇa*, 285. 3). Oil prepared with juice of *āmalakī* should be taken as snuff in all diseases of the head.⁴² Clarified butter mixed with the juice of *āmalakī* fruit is the best unguent known for all sort of headaches and diseases of head.⁴³ Oil prepared with the essence of *āmalakī, bhṛṅga, yaṣṭhī, añjana* fruits and an *aḍhaka* measure of thickened milk, would marvellously help the growth of hairs and eye lashes (*Agni Purāṇa*, 302.25).

Amalakī is sweet, relishing, constructive and aphrodisiac.⁴⁴ Unsalted soup made with *āmalakī* and Pomegranate improves digestion and destroys the *vāyu* and *pitta* disorders.⁴⁵ Juice made with *āmalakī* and *mudga* pulse is astringent and conquers the deranged *kapha* and *pitta*.⁴⁶ *Āmalakī* is anti-corpulent in its effect (*Garuḍa Purāṇa*, 170. 61). One who takes *āmalakī* for a month is sure to get rid of all kind of skin diseases (*Garuḍa Purāṇa*, 174.24). In the *Pittaja* form of leucorrhoea the expressed juice of *āmalakī* seeds pasted with water and sweetened with honey and sugar should be administered. For the alleviation of *pāṇḍu* type of leucorrhoea a women should take the expressed juice of *āmalakī* with honey (*Garuḍa Purāṇa*, 171. 69-70). A decoction of *āmalakī, guḍūci* and *candana* taken with honey proves curative in all forms of fever (*Garuḍa Purāṇa*, 175. 10). *Āmalakī* powder administered through the vehicle of clarified butter undoubtedly relieves cough (*Garuḍa Purāṇa*, 190. 29-30). A stick made of *pippalī, tagara, haridrā, āmalakī, vacā* and *khadira* pasted together with water and applied to

³⁹ त्रिफला खदिरो दार्वी न्यग्रोधो व्रणशोधनः । सद्यः क्षतं व्रणं वैद्यः सशूलं परिषेचयेत् ॥ (*Garuḍamahāpurāṇa*, 170. 72)

⁴⁰ वटरोहाङ्कुरो रुद्र तण्डुलोदकघर्षितः । पीतः सतक्रोतोऽतीसारं क्षयं नयति शङ्करः ॥ (*Garuḍamahāpurāṇa*, 185. 24)

⁴¹ वटनिम्बशमीनाञ्ज्व वल्कलैः क्वथितं जलम् । तत्सेकान्मुखदन्तानां नश्येवै विषवेदना ॥ (*Garuḍamahāpurāṇa*, 191. 21)

⁴² तैलं धात्रीरसेऽपि वा । नस्यं सर्वाभयेविष्टं मूर्ध्वजं तूद्भवेषु च ॥ (*Agni Purāṇa*, 279. 40)

⁴³ धात्रीफलान्यथाज्यं च शिरोलेपनसुत्तमम् । शिरोरोगविनाशाय ॥ (*Agni Purāṇa*, 279. 43)

⁴⁴ सुरमालकं वृष्यं मधुरं ह्यमम्लकृत् । (*Garuḍa Purāṇa*, 169. 22)

⁴⁵ दाडिमामलकैर्यूषो वह्निकृद्वातपित्तहा । (*Garuḍa Purāṇa*, 169. 59)

⁴⁶ मुद्गामलकजो ग्राही श्लेष्मपित्तविनाशनः । (*Garuḍa Purāṇa*, 169. 60)

eyes, proves curative in ocular affections.⁴⁷ A compound consisting of *pippalī*, *ketaka*, *haridrā*, *āmalakī* and *vacā* pounded together and applied to the eyes with the addition of milk proves beneficial in all forms of ocular affections.⁴⁸ Daily use of a compound of *nimba* leaves and *āmalakī* pounded together in the morning undoubtedly cures *kuṣṭha*.⁴⁹ *Abhayā*, *āmalakī*, *drākṣā*, *pāṭhā*, *vibhitaka* and sugar taken in equal parts and internally administered, act as a good febrifuge remedy.⁵⁰ By taking, for a month powders of *āmalakī* in combination with honey and oil, a person would verily become a lord of speech.⁵¹ Plasters composed of *prapunnama* seeds, *āmalakī*, *sarjjarasa* and *snuhī* pasted together with *sauvira* wine may be advantageously used in rubbing the patches.⁵² Powder of *akṣa* taken through the medium of honey and expressed juice of *āmalakī*, proves curative in all forms of cutaneous affections. This medicine is also possessed of good rejuvenating efficacy.⁵³ A decoction of *āmalakī* and *khadira* taken with *valguja* speedily cures even the most obstinate type of leucoderma.⁵⁴ Drops of the expressed juice of *āmalakī* poured into the eyes, allay the local inflammation (*Garuḍa Purāna*, 175. 54). Powders of *āmalakī*, *añjana* and *abhayā* taken with water arrest the catsmenial flow (*Garuḍa Purāna*, 172.7).

Medical classics have come up with very useful information regarding medicinal values of

the plants. Here focus would be mainly on those plants which have been discussed here while describing the medical uses of plants as discussed in *Purānas*.

Nighaṅṭus: According to *Bhāvaprakāśa Nighaṅṭu*, *aśvattha* is astringent, difficult to be digested, cold, heavy, helpful in maintaining fair complexion, and cleansing genital organ. It also does away with disorders that start off bad effects of *pitta* and *kapha*. It is helpful in treating wounds and blood related diseases.⁵⁵ *Madanapāla Nighaṅṭu* says that *aśvattha* is cool and dispels sorrow. It is helpful in treating diseases that develop due to *kapha* and *pitta*. It is helpful in healing wounds and treating blood disorders. *Dhanvantari Nighaṅṭu* is of the view that *aśvattha* has all the properties same as *nyagrodha*. Apart from those properties it does away with disorders that develop due to bad effects of *raktapitta* and *kapha*.⁵⁶ Here it would not out of context to mention the medicinal properties of *nyagrodha*. *Nyagrodha* is cold, astringent, refrigerating, dry and does away with thirst related diseases, vomiting and bad effects of blood and *pitta*.⁵⁷ As per *Kaideva Nighaṅṭu*, *aśvattha* is cold in potency, dry, astringent, cooked difficultly and heavy. It does away with diseases that may develop due to bad effects of *pitta* and *kapha*. It is helpful in treating problems that might into fore due to blood disorder. It alleviates disorders of genital organs and bestows fair colour.⁵⁸ *Soḍhala Nighaṅṭu* has

⁴⁷ कटुकं तगरं चैव हरिद्रामलकं वचा । खदिरा पिष्टवातश्च अञ्जनान्नेत्ररोगनुत् ॥ (*Garuḍa Purāna*, 177. 14)

⁴⁸ पिप्पली केतकं रुद्रं हरिद्रामलकं वचा । सर्वाक्षिरोगा नश्येयुः सक्षीरादञ्जनात्ततः ॥ (*Garuḍa Purāna*, 177. 69–70)

⁴⁹ नित्यं निम्बदलानाञ्च चूर्णमामलस्य च । प्रत्यूषे भक्षयेच्चैव तस्य कुष्ठं विनश्यति ॥ (*Garuḍa Purāna*, 190. 9)

⁵⁰ अभयामलकं द्राक्षा पाठा चैव विभीतकम् । शर्कराया समं चैव जग्धं ज्वरहरं भवेत् ॥ (*Garuḍa Purāna*, 193. 12)

⁵¹ रुद्रामलकचूर्णं वै मधुतैलान्वितम् । जग्ध्वा मासं युवा स्याच्च नरो वागीश्वरो भवेत् ॥ (*Garuḍa Purāna*, 202. 22)

⁵² प्रपुन्नाटसुबीजानि धात्री सर्जजरसः स्नुही । सौवीरपिष्टं दद्रूणामेतदुद्धर्तनं परम् ॥ (*Garuḍa Purāna*, 171. 20)

⁵³ साक्षधात्रीरसः क्षौद्रो हन्यात्कुष्ठं रसायनम् ॥ (*Garuḍa Purāna*, 171. 25)

⁵⁴ धात्रीखदिरयोः क्वाथं पीत्वा वागुजिसंयुतम् । शङ्खेन्दुधवलं शिवत्रं हन्ति तूर्णं न संशयः ॥ (*Garuḍa Purāna*, 175. 26)

⁵⁵ पिप्पलो दुर्जरः शीतः पित्तश्लेष्मव्रणास्रजित् । गुरुस्तुवरको रूक्षो वर्णयो योनिविशोधनः ॥ (*Bhāvaprakāśa Nighaṅṭu-Vamādivarga*, 3)

⁵⁶ अश्वत्थोऽपि स्मृतस्तद्वद् रक्तपित्तकफावहः ॥ (*Dhanvantari Nighaṅṭu-Āmrādivaraga*, 73)

⁵⁷ वटः शीतः कषायश्च स्तम्भनो रूक्षणात्मकः । तथा तृष्णाछर्दिमूर्छारक्तपित्तविनाशनः ॥ (*Dhanvantari Nighaṅṭu-Āmrādivaraga*/70)

⁵⁸ अश्वत्थो शीतलो रूक्षः कषायो दुर्जरो गुरुः ॥ व्रणपित्तकफास्रणो वर्णयो योनिविशोधनः ॥ (*Kaideva Nighaṅṭu-Oṣadhivarga*/432-433)

also described the medicinal properties of the *aśvattha*. According to this *nighaṇṭu* book, *tvak* (bark) and *pravāla* (leaves) are *kaṣāya* (astringent), it mitigates *pitta*. It is *stambhana* and *hima*. It cures *vraṇa*, *prameha* and *atisāra*. Fruits (*phala*) of *kṣīrīvrkṣa* (trees exuding latex/milky juice) are *kaṣāya* and *madhura* with sour (*amla*) taste (*rasa*). They are *śīta*, *rūkṣa*, *guru*, *stambhana* and *lakhana*. It mitigates *kapha* and *pitta*. It causes *vibandha* and *ādhmāna*. It aggravates *vāta*. (*Sodhala Nighaṇṭu*, p. 285). According to *Caraka Saṃhitā*, tender young leaves of *aśvattha*, *nyagrodha*, *udumbara*, *plakṣa*, *padma* etc. are astringent, checking, cold and beneficial in *pittaja* diarrhoea.⁵⁹ The fruits of *aśvattha*, *udumbara*, *plakṣa*, *nyagrodha* are astringent-sweet, sour, aggravate *vāta* and are heavy.⁶⁰

Caraka Saṃhitā: The *Caraka Saṃhitā* says that a physician desiring alleviation of *raktapitta* should use *aśvattha* in anointing, sprinkling, bath and preparation of ghee and oil (*Caraka Saṃhitā-Cikitsāsthāna*- 4.104). Decoction of *aśvattha*, *pāṭhā*, *asana* and *vetasa* added with honey has been prescribed for curing *pittaja* type of *prameha* (Obstinate urinary disorders including diabetes).⁶¹ Paste of bark of *aśvattha*, *nyagrodha*, *udumbara*, *plakṣa* and *vetasa* mixed with ghee is an excellent cooling for inflammation. Decoction of *aśvattha*, *nyagrodha*, *udumbara*, *kadamba*, *plakṣa*, *vetasa*, *karavīra*, *arka* and *kumaja* are wound healers. *Aśvattha*, which falls under *nyagrodhādi* group of drugs according to *Suśruta Saṃhitā* is beneficial for wound healing, is astringent, helps in healing of fractures and dislocations, cure haemorrhagic diseases, burning sensation, adiposity and vaginal

disorders (*Suśruta Saṃhitā-Sūtrasthāna*- 38.48-49). Persons, drinking milk cooked with fruits, root, bark and sprouts of an *aśvattha* tree and mixed with sugar and honey, become as vigorous (sexually) as a sparrow (*kuliṅga*).⁶² While discussing the management of ear diseases, *Suśruta Saṃhitā* says, a bowl-shaped cup, prepared from the oil soaked leaves of *aśvattha*, should be completely filled with the burning charcoal covered by a thick layer of more leaves and should be placed over the aching ear. The oil being heated with the burning charcoal, will drop from this cup into the ear and on getting into channels of the ear, will immediately take away the pain.⁶³ According to *Sidhabheṣaja-mañimālā*, decoction of the root bark of *aśvattha* added with Jaggery, by intake, alleviates severe colic (*Sidhabheṣajamañimālā*- 4.506). According to *Vṛndamādhava*, dusting with powder of the dried bark of *aśvattha* promotes healing in burns (*Vṛndamādhava*-45.21). In children, if there is inflammation in the mouth, the paste of bark and leaves of *aśvattha* should be applied (*Cakradatta*-64.49). It is also sprinkled over unhealthy ulcers to improve their condition and promote granulation (*Materia Medica of Hindus*- p 236).

Bhāvaprakāśa: *Āmalakī* is equal to *harītakī* in properties and still especially cures bleeding diseases, diabetes, best aphrodisiac and rejuvenator, mitigates *vāta* by its sour taste, *pitta* by its sweet taste and cold potency, *kapha* by dryness and astringent taste, thus fruit of *āmalakī* mitigates all the three *doṣās*.⁶⁴ As *āmalakī* is similar to *harītakī* in properties, it is necessary to know its properties. According to *Bhāvaprakāśa*

⁵⁹ न्यग्रोधोदुम्बराश्वत्थप्लक्षपद्मादिपल्लवाः । कषायाः स्तम्भनाः शीता हीताः पित्तातिसारिणाम् ॥ (*Caraka Saṃhitā-Sūtrasthāna*, 27.105–106)

⁶⁰ अश्वत्थोदुम्बरप्लक्षन्यग्रोधानां फलानि च । कषायमधुराम्लानि वातलानि गुरुणि च ॥ (*Caraka Saṃhitā-Sūtrasthāna*, 27.165)

⁶¹ अश्वत्थपाठासनवेतसानाम् । (*Caraka Saṃhitā-Cikitsāsthāna*, 6.32)

⁶² अश्वत्थफलमूलत्वक्शुङ्गासिद्धं पयो नरः । पीत्वा सशर्कराक्षौद्रं कुलिङ्ग इव हृष्यति (*Suśruta Saṃhitā-Sūtrasthāna*, 26.27–28)

⁶³ अश्वत्थपत्रखल्लं वा विधाय बहुपत्रकम् । तदङ्गारैः सुसम्पूर्णं निदध्याच्छ्रवणोपरि ॥

यत्तैलं च्यवते तस्मात् खल्लादङ्गारतापितात् । तत् प्राप्तं श्रवणस्रोतः सद्यो गृह्णाति वेदनाम् (*Suśruta Saṃhitā-Uttartantram*, 21.9–10)

⁶⁴ हरीतकीसमं धात्रीफलं किन्तु विशेषतः । रक्तपित्तप्रमेहघ्नं परं वृष्यं रसायनम् ॥

हन्ति वातं तदम्लत्वात्पित्तं माधुर्यशैत्यतः । कफं रुक्षकषायत्वात्फलं धातुर्यासिदोषजित् ॥ (*Bhāvaprakāśa-Harītakyaḍi varga*, 39–40)

it possesses five tastes, not having salt taste, very astringent, *rūkṣa* (dry), *uṣṇa* (hot in potency), stimulates digestive fire, good for intelligence, sweet at the end of digestion, rejuvenates the body, good for eyes (vision), light (easily digestible), stoutens the body, initiates downward movement (of faeces, flatus, urine etc.), cures dyspnoea, cough, diabetes, haemorrhoids, leprosy (and other skin diseases), dropsy, enlargement of the abdomen, worms, hoarseness, disease of the duodenum, constipation, intermittent, abdominal tumour, flatulence, thirst, vomiting hiccup, itching, heart diseases, jaundice colic, tympanitis, diseases of the spleen and liver, renal calculus, dysuria and retention of urine (*Bhāvaprakāśa-Harīṭakyādi varga/19-22*).

Nighaṅṭu: According to *Sodhala Nighaṅṭu*, *āmalakī* is cold in potency. It mitigates *pitta* due to cold and sweet taste. Pungent effect is responsible for mitigation of *kapha*; and sour taste mitigates *vāta*. Thus it alleviates *tridoṣa*. It is aphrodisiac, beneficial to throat and eye and cardiac. It cures burning sensation and fever. Its marrow alleviates gynaecological disorders, vomiting, *vāta*, *pitta* and thirst. It has astringent and sweet taste and effect respectively. It enhances *śukra*. It alleviates cough, diarrhoea and other ailments and colic type of pain in the abdomen (*Sodhala Nighaṅṭu*, 2005, p. 221). Several other *Nighaṅṭu* books including *Dhanvantari Nighaṅṭu* (*Guḍūcyādivarga*, 212-213), *Madanapāla Nighaṅṭu* (*Abhayādivarga*, 27), *Rāj Nighaṅṭu* (*Āmrādivarga*, 158), *Priya Nighaṅṭu*, *Kaiyadeva Nighaṅṭu* (*Oṣadhivarga*, 236-240) etc. have also

come up with medicinal properties of *āmalakī*. Juice of grapes and *āmalakī* fruit acts as purgative as well as anti-pyretic. Similar is the juice of *āmalakī* fried with ghee.⁶⁵ The patients having no diaphoresis and sleep and having excessive thirst should take the liquid gruel fried with ghee and cooked with *śuṅṭhi* and *āmalakī* and added with sugar. These act as anti-pyretic.⁶⁶ *Khaṇḍa*, which is a dietary preparation made of *kāśmārya* and *āmalakī* and taken with supernatant fatty layer of curd is helpful in controlling excessive bleeding, if administered properly (*Caraka Saṃhitā*, Ci, 14.202). *Dhātryāvāleh*, a special preparation made up of *āmalakī* alleviates jaundice, disorders of *pitta*, *pāṇḍu*, *kāsa* and *hatimaka* (*Caraka Saṃhitā*-Ci, 16. 100-102). *Dhātryāriṣṭa*, another preparation should be taken in morning in proper dose keeping on wholesome and measured diet on digestion. This *ariṣṭa* alleviates jaundice, anaemia, heart disease, *vātarakta*, malarial fever, cough hiccup and anorexia.⁶⁷ *Āmalakī* fruits mixed with plenty of honey and sugar should be used as purgative. It is efficacious in treating *raktapitta*.⁶⁸ The *āmalakīyādi* group of drugs brings down all types of fever, is beneficial for the eyes, is an appetizer and aphrodisiac and cures *kapha* and anorexia.⁶⁹ *Āmalakī* is cold, dry and curative for *pitta*, *medas* and *kapha*.⁷⁰ *Āmalakī* fruit is sour, sweet, bitter, astringent and acrid in taste and is a laxative, is beneficial for the eyes, pacifies all the *doṣas* and is spermatogenic. Due to its sourness taste it eliminates *vāta*; due to its sweetness and coolness it eliminates *pitta*; due to its dryness and astringent property it pacifies *kapha* and hence it

⁶⁵ मृद्धीकामलकानां वा रसं प्रस्कन्दनं पिबेत् । रसमालककानां वा घृतभृष्टं ज्वरापहम् ॥ (*Caraka Saṃhitā*-Ci, 3. 230)

⁶⁶ अस्वेदनिद्रस्तृष्णार्तः पिबेत् पेयां सशर्कराम् । नागरामलकैः सिद्धां घृतभृष्टां ज्वरापहाम् ॥ (*Caraka Saṃhitā*-Ci, 3. 187-188)

⁶⁷ प्रपिबेन्मात्रया प्रातर्जीर्णं हितमिताशनः । कामलापाण्डुहृद्रोगवातासृग्विषमज्वरान् ॥

कासहिक्कारुचिश्वासांश्चौषोऽरिष्टः प्रणाशयेत् । (*Caraka Saṃhitā*-Ci, 16. 113-114)

⁶⁸ आमलकानि वा । विरेचनं प्रयुञ्जीत प्रभूतमधुशर्करम् ॥

रसः प्रशस्यते तेषां रक्तपित्ते विशेषतः । (*Caraka Saṃhitā*-Ci, 4.57-58)

⁶⁹ आमलक्यादिरित्येष गणः सर्वज्वरापहः । चक्षुष्यो दीपनो वृष्यः कफारोचकनाशनः ॥ (*Suśruta Saṃhitā*-Su, 38.61)

⁷⁰ शीतमामलकं रुक्षं पित्तमेदःकफापहम् । (*Suśruta Saṃhitā*-Su, 44.70)

is the best of all the fruits.⁷¹ The leaves and fruits of *āmalakī* cooked in the manner of *rasakriya* should be employed as collyrium.⁷²

4. CONCLUDING REMARKS

The *Purāṇas* state that trees provide food, shade, fuel and wood. So they should be produced, protected and donated to the society. Multiple utilities of plants have been realised from times immemorial and these make the plants as one of the oldest forms of adoration. Hence, plants are considered holy. The concept of tree worship occupies an important place in the religious moorings of Indian people. They are often associated with many myth and folklore. The plants are associated and identified with Gods, planets, months etc. Tree worship is possibly earliest and the most prevalent form of the religion. The sense of worship combines utility and spirituality. Without trees there shall be no life on the earth. Man has been in communion with nature since time immemorial. Along with the progress of his intellect the man-plant relationship also progressed. Indeed tree is the highest and noblest production of the plant kingdom just as man in the highest in animal kingdom. Trees always provide freshness, variety and often grandeur to the scene, whether they stand solitary or arranged in masses or avenues.

According to *Purāṇās*, trees have played a vital role in the field of human welfare and they are doing it even now. They shall be playing this important role so long the human life exists on the face of the earth. There is perhaps no object in the nature that adds so much to the beauty of a landscape as a tree. Well it has been said that man cannot live without trees. They mitigate the severity of the climate, protect the soil and conserve the water. Plants have been integral part

of Indian life and culture. Owing to its importance in day-to-day human life and environment balance, ancient seers of India did all that was possible to conserve and preserve plants. They developed the concept of tree worship apart from discussing the merits of plantation. How felling or cutting of trees was considered as sin and hazardous have been discussed in ancient Sanskrit Literature. As plants are required for healthy environment, thoughts for plant conservation were given prominence in ancient India. If those thoughts are practised in modern era too, problems of environment pollution could easily be met.

It is clear that the *Purāṇas* have described importance of plants at length. Emphasis of *Purāṇas* in unearthing religious and cultural facts relating to plants on one hand and interesting information on economical, ecological, environmental and medicinal values of plants justifies also human health, safety and prosperity of the society.

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⁷¹ अम्लं समधुरं तिक्तं कषायं सरम् । चक्षुष्यं सर्वदोषघ्नं वृष्यमामलकीफलम् ॥

हन्ति वातं तदम्लत्वात् पित्तं माधुर्यशैत्यतः । कफं रुक्षकषायत्वात् फलेभ्योऽभ्यधिकं च तत् ॥ (*Suśruta Saṃhitā-Su*, 46. 143–144)

⁷² पत्रं फलं चामलकस्य पक्त्वा क्रिया विदध्यादथवाऽञ्जनार्थं । (*Suśruta Saṃhitā-Utta*, 12.49)

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