

The Role of *Vṛkṣāyurveda* of Surapala in Environmental Protection

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Abstract: India has a rich cultural heritage that venerates mountains, rivers, and plants. Since Vedic philosophy, people have been encouraged to protect the environment by cultivating awareness of living and inanimate things. The environment is not an incidental thing to the people. It is integral and deeply intertwined with their daily lives. This research will be conducted based on the problem of how ancient India recognised the importance of environmental protection. Ancient India was concerned with environmental protection, and those theories appear to be increasingly important to humans today. The *Vṛkṣāyurveda* (the science of plant life) of Surapala highlights several aspects of interconnectedness to convey a significant message about humans and plants, including the importance of trees, merits and demerits of trees planted near the residence, soil, propagation, method of planting, nourishment of trees, treatments for trees, pleasure gardens, detection of underground water, and plant indicators for crop and animal production etc. A glance at the eighth verse of the text gives us a great understanding of bringing the four-fold fruits of *dharma*, *artha*, *kāma*, and *mokṣa* by growing trees and their protection. Furthermore, verse no. 22 indicates that if one plants various trees that are useful for fruits and flowers, they would be rewarded with a thousand cows and adorned with jewels. This paper intends to highlight the teachings of environmental protection by Surapala in his treatise of *Vṛkṣāyurveda* by understanding the science of plant life. Secondary sources related to the field will also be examined in this qualitative research, and the data will be analysed using particular methods.

Keywords: Environment Protection, planting, trees, *Vṛkṣāyurveda*

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Introduction

The environment is an inextricably linked component of human life, which humans depend on, adapt and modify. Environmental contamination is increasing daily, causing significant and lasting damage to the world. The contamination can be seen in several types, including air, water, earth, noise, light and others. Since factories release dangerous substances like plastics, heavy metals and nitrates, burning fossil fuels, acid rain, oil spills, and industrial toxins have been caused, degrading the quality of the environment's essential elements and putting the planet in survival danger. Individuals and organizations from all over the world have been looking for better ways to solve environmental issues for a long time, and in the twenty-first century, the slogan has gained more popularity.

Both humans and other living things have suffered grave health effects as a result of environmental contamination. The impact of pollution on human health is not just a concern but a crisis that needs immediate attention. In addition, it has involved a warning for the world's disappearing rare species of flora and wildlife. There is an urgent need to comprehend the protection of environmental sources and improve them as much as possible to ensure a healthy lifespan. It has been understood now the importance of protecting the environment by human beings. For instance, living in a tree-full environment, basically, trees create peaceful and aesthetically pleasing environments for the human mind, ecologically, providing oxygen, improving air quality, climate amelioration, conserving water, preserving soil, and supporting wildlife, personally and spiritually, trees bring pleasant, relaxed, and comfortable feelings by their shapes, forms, and vibrant colours.

Even though environmental protection is a top priority for modern humans, easterners have taught such concepts since ancient times. The Atharvaveda emphasises the conservation and utilization of natural resources (Atharvaveda, 2008, vol. 1). Furthermore, it says that humans can use nature for survival but not to overuse or abuse it. For instance, the hymn 12.1.35 says, "Whatever I dig out from you, O earth! May that have quick regeneration again; may we not damage thy vital habitat and heart." In addition, references to the value of the environment and recommendations for conserving natural resources may be found in the Rigveda, Caraka Samhitā, Suśruta Samhitā, Agnipurana, Satapatha Brahmana,

Ramayana, and Arthaśāstra etc. Vṛkṣāyurveda of Surapala concentrates primarily on numerous tree species and their productive and healthy growth. It suggests that the ultimate four-fold achievements of human life of *Dharma*, *Artha*, *Kāma* and *Mokṣa* can be attained by the planting of trees. Consequently, it demonstrates the path to protecting the environment through the teachings of water management, soil conservation, pleasure gardening, etc.

Vṛkṣāyurveda of Surapala - According to the Caraka Saṁhitā the objective of Ayurveda is '*swasthasya swasthya rakṣaṇam, āturasya vikara praśamanam ca*' (Caraka Saṁhitā 30.26) - protecting the health of the healthy person and making the patient healthy. Consequently, the goal of Vṛkṣāyurveda - the science of plant life is to grant the plants a happy, healthy, and quiet existence life. Two ancient compositions entirely dedicated to Vṛkṣāyurveda. The oldest one was written by Salihotra around 400 B.C.E. (Ranjana Mishra (2017, 05), and the second Vṛkṣāyurveda was authored by Surapala, who was recognised as a physician in the court of Bhumapala around the 10th century (Pujari & Bagali, 2023). Surapala has referred to previous treatises such as Upavanavinod Sarangdhar, Bṛhatsaṁhitā of Varahamihira, etc. According to Scholars like (Rangan Mishra, 2017, p. 6), (and Pujari and Bagali, 2023, p. 157), the text of Surapala's Vṛkṣāyurveda was forgotten for several centuries until Dr. Nalini Sandhale translated it into English in 1996 based on a manuscript that was taken from the Bodleian Library, Oxford. The complete Vṛkṣāyurveda consists of 325 slokas scattered over various subject matters. According to Kushwaha (2023), eighteen sub-subjects including the *mangalācaraṇa* (Salutation to Deities) and *grantha karthā paricaya* (Identity of Author) have been included in the Vṛkṣāyurveda. (1) *Taru mahima citrīkaraṇa* (glory of tree planting), (2) *Nivāsāsanna taruropaṇam* (plantation of trees near residential complex), (3) *Vātika sthāna* (garden construction directions), (4) *Bhūmi nirūpana* (soil classification), (5) *Padapa vivikṣā* (Tree biology), (6) *Bījotpattividhi* (the seed germination process), (7) *Ropana vidhi* (Plantation procedure), (8) *Taru rakṣaṇa nirdeśa* (instructions for the protection of plants), (9) *Kunapajala* (liquid organic manure), (10) *Ropita vṛkṣāṇām secana vidhi* (Irrigation process), (11) *Dhupana vidhi* (Fumigation process), (12) *Roga gñāna evam cikitsā* (knowledge of plant disease and their treatment), (13) *Upavana prakriyā* (art of garden

construction), (14) *Kupa nirdeśa* (Instructions for making well), (15) *Kūpārtha bhūmi parīkṣā* (Examining land for well), (16) *Annaḍi niṣpatti* (Suitable area for crop cultivation).

This research will focus on how Surapala has contributed to environmental conservation through the perspectives of Vṛkṣāyurveda, the ancient Indian system that promotes the health and well-being of trees and plants. Also, the purpose of this research is to analyse Surapala's teachings in order to identify the values and methods he advocated that promote ecological balance, biodiversity and sustainable land usage. As humans grapple with numerous diseases and biological challenges, the need to protect the environment becomes increasingly apparent. Academic research studies, such as Gyawali and Acharya (2023), Shilpa S. et al. (2023), and Sharma, Tomar, and Pratiksha (2020), have shed light on the effects of environmental pollution on human health. These studies, by acknowledging and documenting the impact of pollution, play a crucial role in informing and guiding. Numerous scholars, such as Pujari and Bagali (2023), Ranjana Mishra (2017), Meshram S A and Meshram A A (2019), Rananavare and Chitnis (2024), and Ramachanran (1984) have studied the Vṛkṣāyurveda in variety of views. Most research has concentrated on significant teachings of Vṛkṣāyurveda, such as managing plant diseases, comprehending agricultural techniques, and investigating plant life, etc. However, the teachings of the Vṛkṣāyurveda imply some other critical dimensions, such as pleasure gardens, detection of underground water, plant indicators for crop and animal production, selection of soil, etc. As Pujari and Bagali conclude, Vṛkṣāyurveda is the most effective way to improve the quality of plants, crops, and human health and biodiversity. Rananavare and Chitnis study Vṛkṣāyurveda as a treatise containing the best organic farming methods. Therefore, it is clear that the teachings of Vṛkṣāyurveda signify the protection of the environment, and this study aims to identify this significance and fill the gap in the field, which will pave up possibilities for future research.

Methodology

In addition to two Vṛkṣāyurvedas, Indian literature contains several environmental sciences treatises. Among those treatises, the Vṛkṣāyurveda of Surapala has been utilised as the primary source, with other related research

studies in the research areas of Surapala's Vṛkṣāyurveda considered as secondary sources in this research. The textual analysis method for the data collection has been used in this qualitative research work and the findings have been analysed using the content analysis method for the sake of adaptability to novel research works in the future.

Results and Discussion

In this section, we delve into the implications of the environmental protection discussed in Surapala's Vṛkṣāyurveda. At the very early stage of the treatise, Surapala implies that even a king, with all of his youth, an attractive physique, beautiful women, talented friends, music of a melodious tune, and woodlands, cannot find joy in the absence of pleasure gardens (Vṛkṣāyurveda, 2021, 2 verse). Surapala has concentrated on two significant benefits when composing the Vṛkṣāyurveda, which emphasises the life of plants.

- 1 To ensure a mentally and physically beneficial environment for human beings.
- 2 To ensure a healthy life for plants themselves and the well-organised environment.

Surapala conveys the importance of planting trees by taking advantage of the common man's religious attitude, superstitions, and beliefs. - Planting trees are better than giving birth to sons. Trees offer liberation to the father (planter) with leaves, flowers and fruits. If one plant in a pleasure garden abounding in boundless fruits, then gods, wise men and yakshas reside there for those three ages. A person is honoured in heaven for as many thousands of years as the days he resides in a house where the Tulsi is grown. Additionally, planting Bilva trees, which please Lord Siva, the goddess of riches residing permanently passed on to the sons and grandsons. Planting a Jambu tree, knowingly or unknowingly, makes him respected as a recluse even when he stays in the house. Ultimately, planting trees yields the means of four-fold fruits of human life, known as *dharma* (righteousness), *artha* (prosperity), *kāma* (duty) and *mokṣa* (salvation) (Vṛkṣāyurveda, 2021, 4-23 verses).

Planting trees close to one's residence creates a more environmentally friendly atmosphere and has many positive effects. Gradually, Gods, demons,

Gandarva, ghosts, snakes, rākṣasas, beasts, birds, and human beings always resort to the trees. Surapala advises not to plant any types of trees at the entrance if no shadow falls on the house, though those trees yield gold. Aside from these teachings, Surapala emphasises the importance of not planting various sorts of trees near the house, as this is detrimental to both the house and humans (Vṛkṣāyurveda, 2021, 24-34 verses). Furthermore, in his discussion of soil, Surpala identified various categories based on both colour and savour, and he recommends plants in a specific soil type for each plant because certain soil types and types of land do not support the steady growth of plants. However, the author exhorts readers to cultivate plants in the last verse of the section, saying that “if wealth destiny and the king are favourable, any tree can grow anywhere with special effort” (Vṛkṣāyurveda, 2021, 44 verse). A significant explanation of grading and preservation of seeds is included in the section on propagation. He suggests various methods for carrying out the process utilising the seeds, stalks, or bulbs. When a man grows a tree, he may recite a mantra like “... I shall look after you there, like a dear son, giving an oath to protect the tree and hoping for fruitful incomes (Vṛkṣāyurveda, 2021, 86 verse). Surapala’s teachings are widely covered the most important divisions of plant life. The following table illustrates the watering system for plants.

Table 1: watering system for newly planted trees based on soil or Seasons.

Soil or Seasons	Count of Days	Morning	Evening
Arid	Fifteen days	√	√
Marshy	Five days	One time	
Ordinary	Ten days	√	√
Winter	Every alternate day	-	-
Spring	Every day	-	√
Summer	Every day	Three Times	

A nurturing atmosphere combined with quality Ayurvedic medicinal plants always results in a healthy atmosphere. Surapala, therefore, suggests cultivating *billota*, planting *aśoka*, *punnāga*, *sirisa*, and *nimba* in order to ward off diseases and calamities in order to have a long and healthy life (Vṛkṣāyurveda, 2021, 91, 92 verses). Furthermore, according to verse no. 97, and 98, trees bring happiness

both here and hereafter and trees are revered as saviours since they rescue planters from abject poverty, and the author confirms that the trees should be carefully nurtured since their shade, flowers, and fruits help to pursue *dharma*, *artha* and *kāma*. Surapala suggests planting various types of trees, such as Ayurvedic, fruits, flowers, Vegetables, creepers, and other plants that should be cultivated for the sake of the environment. At the end of the treatment section, Surapala mentions that if a tree cannot be cured by using the treatments aforementioned, those trees should be transplanted.

Constructing beautiful and long ponds adorned with swans and different kinds of lotus flowers in pure water for pleasure gardens is recommended by Surapala for the benefit of the trees as well as for attractive environmental surroundings (Vṛkṣāyurveda, 2021, 293-300 verses). Surapala also emphasises the importance of trees and various forms of soil surfaces, surrounding mountains, and soil with various sorts of ants in the section of natural indications for groundwater for construction wells. It is fascinating to note that some trees like *nyagrodha*, *asvatta*, etc., are good for the production of various sorts of crops. Consequently, mango trees indicate happiness, bhallataka trees indicate fear, palm trees indicate health, kadhira and śami indicate famine, and arjuna provides adequate rain. In general, it can be assumed that Surapala has provided the following positive suggestions by composing the Vṛkṣāyurveda.

- Environmentally sustainable and customised techniques for farming.
- Healthy growth and yield of plants.
- Enhancement of the production rate with the use of natural and biofertilizer, which is an organic product derived from animal and plant products.
- Various measurements have been offered to preserve ecological balance and harmony of nature.
- Optimal plant populations.

Conclusion

Vṛkṣāyurveda, the treatise containing the best organic farming methods and acknowledges the value of managing resources such as trees, soils, and water resources for optimal usage at all times, draws immediate attention to environmental conservation. In addition, for enhancing the quality of plants, crops, human health, and biodiversity, Vṛkṣāyurveda would be the ideal course of action. By offering a wide range of practical and environmentally acceptable strategies and solutions for creating a green environment that benefits humans, animals and inanimate things, as Surapala stated in the treatise's conclusion, the author has succeeded in “increasing the lifespan of plants present on Earth.”

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