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Reviving the roots- Approach through Vrukshayurveda.

1Dr. Shreyashe Awadhkishor Nayak, 2Dr. Jyotsna Kulkarni, 3Prof. Dr. Aparna M. Ghotankar

1MD Scholar, Dept of Dravyagunvigyana, CSMSS Ayurved College, Hospital and research centre, Kanchanwadi, Chh. Sambhajinagar

2Associate professor Dept of Dravyagunvigyana, CSMSS Ayurved College, Hospital and research centre, Kanchanwadi, Chh. Sambhajinagar

3Professor & HOD, Dept of Dravyagunvigyana, CSMSS Ayurved College, Hospital and research centre, Kanchanwadi, Chh. Sambhajinagar.

Abstract

Vrikshayurveda, the ancient Indian science of plant life, finds its roots in the *Rigveda* and *Atharvaveda*. It provides an extensive framework for plant care, cultivation, and pest management using ecologically sound methods comparable to modern agricultural science. Classical texts such as *Vrikshayurveda* by *Surapala* and *Sharangdhar Paddhati* emphasize sustainable farming, soil conservation, organic pest control, and environmental harmony.

In the context of today's ecological crisis—marked by soil depletion, overuse of chemical fertilizers, and environmental pollution—the revival of *Vrikshayurveda* holds immense relevance. Its principles support biodiversity conservation, organic farming, permaculture, and ecofriendly crop management. The text documents over 170 plant species and provides insights into intercropping, home gardening, and crop preservation. By integrating this traditional wisdom with modern agricultural science, *Vrikshayurveda* offers practical, sustainable solutions for global agricultural and environmental challenges.

Introduction

India has long been a repository of ecological and botanical wisdom, with ancient traditions recognizing the symbiotic relationship between plants, animals, and humans—described as *Āśrayāśrayī Sambandha* (mutual interdependence). From this understanding emerged Vrikshayurveda, a systematic application of *Ayurvedic* principles to plant life and agriculture.

Texts like *Surapala's Vrikshayurveda* (comprising 325 Sanskrit verses) reflect India's advanced ecological knowledge dating back over a thousand years. Just as *Ayurveda* maintains human health by balancing *Vata, Pitta, and Kapha, Vrikshayurveda* applies similar principles to diagnose and treat plant disorders—classifying them as *Nija* (internal causes) and *Āgantuka*[2] (external causes like pests and weather).

The use of organic fertilizers such as *Kunapajala*—a nutrient-rich liquid prepared from fish, animal flesh, and organic waste—demonstrates remarkable biochemical understanding. Studies confirm that *Kunapajala* enhances soil fertility and plant growth, showcasing the ecological intelligence of ancient agricultural practices.

Culturally, *Vrikshayurveda* also holds spiritual significance. *Surapala* emphasized the moral duty of tree planting, stating: "Ten wells are equal to one pond, ten ponds to one lake, ten lakes to one river, and ten sons to one tree." This illustrates the sacred role of trees in sustaining life.[1]

Other classical works such as *Sharangdhar's Upavanvinoda* and *Varahamihira's Brihatsamhita* elaborate on subjects like soil classification, irrigation, intercropping, and pest control—reinforcing a holistic, sustainable agricultural system that harmonizes with nature.

Even today, India's cultural practices—like sacred groves (*Devrai, Devarakaadu*), tree worship, and eco-spiritual rituals—serve as models of community-led biodiversity conservation. In the face of modern challenges such as soil degradation, climate change, and over-reliance on chemicals, integrating *Vrikshayurveda* into current agricultural systems can foster sustainability and ecological resilience.

***Upavanvinoda*[3.6] – Overview**

Upavanvinoda (Chapter 82, **Sharangdhar Paddhati**) elaborates on tree cultivation, soil management, irrigation, and garden aesthetics, offering a detailed account of ancient Indian horticultural science.[4]

1. *Taru Mahima* (Importance of Trees):

Trees symbolize *Dharma, Artha, Kama, and Moksha*. Sacred species like *Tulsi, Bilva, Nimba,* and *Ashvattha* promote spiritual and material well-being while maintaining ecological balance. Planting specific trees, such as *Tulsi, Bilva, Nimba, and Ashvattha*, is believed to bring spiritual and material benefits. The text highlights how trees contribute to both ecological balance and human wellbeing.

2. *Nivasa-Sann Taru Shubha-Ashubha Lakshana* (Auspicious Trees Near Homes):

The placement of trees influences prosperity and health. *Nyagrodha, Udumbara, Pippala*, and *Plaksha* are auspicious when planted in specific directions, whereas thorny or milky-sap trees are considered inauspicious near dwellings. *Nyagrodha* (east), *Udumbara* (south), *Pippala* (west), *Plaksha* (north). Avoid Planting in Wrong Directions: *Ashvattha* (east), *Plaksha* (south), *Nyagrodha*(west), *Udumbara* (north). Unfavorable Trees: Thorny trees, trees with milky sap, or those causing excessive shade should be removed to prevent loss of wealth and progeny.

3. *Bhumi Nirupanam* (Soil Classification):

Soils are classified as *Jangala* (arid), *Anupa* (moist), and *Sadharana* (balanced). Ideal soil is bluish, soft, and slightly moist—suitable for most fruit-bearing trees like *Amra* (Mango).

4. Padapa Vivaksha (Plant Classification):

Plants are categorized into Vanaspati, Druma, Lata, and Gulma, based on growth and reproduction. Propagation techniques include seeds, stalks, bulbs, and grafting. It was believed that plants have life and senses and they also feel hunger and pain.

Plants are classified into four groups based on their growth patterns:

A. *Vanaspati* – Large trees that bear fruit without flowers (e.g., Banyan).
B. *Druma* – Trees that produce both flowers and fruits (e.g., Mango, Champaka).
C. *Lata* – Creepers that spread through shoots (e.g., Betel Vine).
D. *Gulma* – Bushes with multiple stems (e.g., Jasmine).

5. *Bija-Utpatti Vidhi* (Seed Sowing):

Seeds are treated with ghee, Vidanga smoke, or milk to increase fertility and disease resistance. Illustrated the process of seed germination and explains about grading and preservation of seeds.

The methods described for seed preservation is to mix the seeds with ashes and it was also suggested to expose the seeds to medicated smoke which can serve as antimicrobial agent. Proper seed treatment enhances germination and plant health.

6. *Ropana Vidhanam* (Plantation Guidelines):

Planting during *Ashadha and Shravana* months ensures successful growth. Saplings should retain original soil and be treated with honey and ghee mixtures. Trees like *Ashoka, Nimba,* and *Shirisha* are considered auspicious, while some trees are believed to indicate fear or misfortune.

7. *Nishechan Vidhi* (Watering Techniques):

Watering frequency depends on season. The text also describes the use of *Kunapajala* for fertility enhancement. Describes the various methods of irrigation and the effect of use of fertilizers. .It also provides information about the diseases of plants.Aspecial type of fertilizer called *kunapajala* is also mentioned. Newly planted trees need twice daily watering (morning and evening). During summer, watering is required every alternate day. In rainy seasons, watering should be done when rainfall is low. Weed removal is essential to ensure plant growth.

8. *Druma Raksha* (Protection of Trees):

Methods to safeguard trees from wind, pests, and drought include herbal formulations and sacred mantras. Trees should be shielded from mist, strong winds, pests, and fire. Pests like grasshoppers, rats, and ants can be controlled using herbal treatments.

9. *Upavana Prakriya* (Garden Design):

Gardens should promote mental peace and include ponds, swings, and shade trees for relaxation. Gardens should be designed to enhance physical and mental wellbeing. Lotus ponds, swings, peacocks, and artificial caves add to the beauty and tranquility. A central white palacelike structure serves as a resting retreat. A well should be surrounded by fruit bearing trees for clean drinking water.

10. *Taru Chikitsa* (Plant Treatment):

Plant ailments are treated according to *Tridosha* imbalance—*Vata, Pitta, or Kapha*. Remedies include cow dung, milk, honey, and herbal pastes. Like humans, trees suffer from *Vata, Pitta*, and *Kapha* disorders:

A. *Vata* imbalance – Trees become thin, twisted, and dry. Treated with cow dung, Kunapajala, and herbal pastes.
B. *Pitta* imbalance – Leaves burn in sunlight, fruits ripen prematurely. Treated with lotus bulb extracts and milk.

C. *Kapha* imbalance – Excess moisture, heavy branches. Managed by pruning and drying techniques.

Insect infestations – Removed manually and treated with herbal decoctions.

11. *Kunapajala* (Organic Manure):

A natural fertilizer prepared from decomposed animal byproducts and organic substances, rich in amino acids and micronutrients that support plant growth. Animal flesh, marrow, milk, honey, and sesame oilcake. Left to ferment for two weeks before use. Enriches soil and promotes healthy plant growth.

12. *Vichitra Karanam* (Enhancing Plant Properties):

Ancient techniques could alter flowering cycles, induce off-season fruiting, or enhance fragrance and color—demonstrating an advanced understanding of plant physiology. It depicts some astounding techniques such as to make a plant bloom throughout the year irrespective of seasons, bring forth premature maturity to plants and fruits, and change the shape and form of trees.

This section describes unique botanical techniques:

Making scentless flowers fragrant using herbal treatments. Producing colored cotton from regular cotton plants. Inducing out of season fruiting. Growing seedless fruits and changing flower colors through special treatments.

13. Locating Groundwater (*Kooparthe BhoomiPariksha)*

This section describes natural signs for finding underground water sources for wells. Certain trees, animals (frogs, scorpions), soil types, and anthills indicate the presence of water. Favorable *Nakshatras* (constellations) like *Hasta*, *Magha*, *and Pushya* are recommended for well digging. Incorrect placement of wells can lead to fire hazards and accidents.

14. Plant Nourishment (Po*shanVidh*i)

Natural fertilizers and nourishing substances are suggested:

White mustard & oilcake for *Kharjura (Date)*, *Bilva (Bael*). Watersoaked chaff for *Amra* (Mango). Milk & water for young *Tinduka* plants. Honey, ghee, and jaggery enhance fruit quality.

15. Observing Plant Growth for Predictions (A*nnadiNishpattiGyanm*)

Certain trees indicate good crop yields (e.g., *Nyagrodha* for barley, *Jambu* for rice). The presence of specific trees predicts habitats for different animals. Some trees indicate rainfall, security, or health conditions.

Few examples5 of which are[5] –

- Trees grown from such seeds bear forever abundant flowers and fruits of an excellent quality.
- Trees which are smoked heavily by a mixture of ghee, *Vidanga*, milk water and honey become full of flowers and fruits in a short time.

- For the growth of a young sapling a cold mixture of fish, flesh and seasame should be given every 7 days.
- The mango trees are nourished well and are loaded with sweeter and bigger fruits if treated with water mixed with ripe fruit of *ankota*, ghee, honey and marrow of a boar.
- Mango is specially benefitted by cold fish washings.
- Seeds sprinkled with milk, smeared with mustard and ash of seasame and *brihati* rubbed with cowdung sprout in no time.
- Seeds sprinkled with milk, rubbed with cowdung, dried and profusely smeared with honey and vidanga definitely sprout.

Discussion

Ancient Indian agricultural science exhibits remarkable parallels with modern agronomy. Techniques of seed treatment, soil selection, and pest control reveal deep ecological insight. Organic fertilizers like Kunapajala contain amino acids, fatty acids, keratin, and micronutrients that promote microbial activity, improve soil texture, and ensure sustainable yield.

Use of white mustard for its antifungal compound sinalbin, and honey for its antimicrobial and proline-rich properties, illustrates advanced biochemical awareness. Cow dung and milk, rich in essential nutrients and amino acids, act as natural fertilizers enhancing disease resistance in plants.

In contrast, modern agriculture's dependence on chemical fertilizers and pesticides has led to soil degradation, pollution, and health disorders. Reviving Vrikshayurveda principles—such as Panchagavyam and Kunapajala—offers ecofriendly, cost-effective alternatives that promote soil fertility, crop health, and biodiversity conservation.

Integrating this ancient wisdom with scientific advancements can revolutionize organic farming, medicinal plant cultivation, and environmental sustainability, bridging the gap between traditional and modern agricultural systems.

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