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SASYASHATRA: INDIAN CONTRIBUTION TO BOTANY

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Abstract:

Organizational technology as per ICAR guidelines managed by the Management Unit (ITMU) of the IIHR technologies for commercialization and security. Pheromone traps for footworm control or *Bactrocera* spp. and the method of foliage Commercial banana micronutrient formula by licensees. It is observed that a continued effort to breed genetically advances in fruit and vegetable preparation is in progress. Identification and isolation of cell lines with improved fertility high yield, quality and for biotic and abiotic stress tolerance is to be noticed. We need to remember that the cultivation of plants in India began at least in 5000 BC. Our ancestors were aware of the science behind cultivation of Crops. Later life soon followed with tools and methods developed for agriculture. Indian goods soon reached the world through existing trade. During colonial era they introduced exotic machines and crops to India. They became necessary for the survival of the Indians. Irrigation in medieval India reached a new milestone and Indian crops affecting the economies of other parts of the world. Land and water plans were developed for this purpose offering equal development. Despite some stagnation in the post-modern period, independent Republic of India was able to develop extensive agriculture program. This paper is an attempt to know about the Sasyashtra - Scientific text of India for the world of Botany

Keywords: Sasyashatra, Indian Knowledge, Botany, GM crops, Natural vegetation, Bioformulations, Vrikshayurveda

I. INTRODUCTION

Barley and wheat cultivation—along with the domestication of cattle, primarily sheep and goat—was visible in Mehrgarh by 8000- 6000 BCE. Agro pastoralism in India included threshing, planting crops in rows— either of two or of six—and storing grain in granaries. By the 5th millennium BCE agricultural communities became widespread in Kashmir. Zaheer Baber (1996)[1] writes that 'the first evidence of cultivation of cotton had already developed'. Cotton was cultivated by the 5th millennium BCE-4th millennium BCE. The Indus cotton industry was well developed and some methods used in cotton spinning

and fabrication continued to be practiced till the modern Industrialization of India. A variety of tropical fruit such as mango and muskmelon are native to the Indian subcontinent. The Indians also domesticated hemp, which they used for a number of applications including making narcotics, fiber, and oil. The farmers of the Indus Valley grew peas, sesame, and dates. Sugarcane was originally from tropical South Asia and Southeast Asia. Different species likely originated in different locations with *S. barberi* originating in India and *S. edule* and *S. officinarum* coming from New Guinea. Wild *Oryza* rice appeared in the Belan and Ganges valley regions of northern India as early as 4530 BCE and 5440 BCE respectively. Rice was cultivated in the Indus Valley Civilization. Agricultural activity during the second millennium BC included rice cultivation in the Kashmir and Harrappan regions. Mixed farming was the basis of the Indus valley economy. Denis J. Murphy (2007) details the spread of cultivated rice from India into South-east Asia. In the ancient times] the summer monsoons may have been longer and may have contained moisture in excess than required for normal food production. One effect of this excessive moisture would have been to aid the winter monsoon rainfall required for winter crops. In India, both wheat and barley are held to be Rabi (winter) crops and—like other parts of the world—would have largely depended on winter monsoons before the irrigation became widespread. The growth of the Kharif crops would have probably suffered as a result of excessive moisture. Jute was first cultivated in India, where it was used to make ropes and cordage. Some animals—thought by the Indians as being vital to their survival—came to be worshiped. The Mauryan Empire (322–185 BCE) categorized soils and made meteorological observations for agricultural use. Other Mauryan facilitation included construction and maintenance of dams, and provision of horse-drawn chariots—quicker than traditional bullock carts. The Greek diplomat Megasthenes (c. 300 BC)—in his book *Indika*—provides a secular eyewitness account of Indian agriculture. Thus these texts inform about the knowledge of our ancestors.

Sasyashatra – A Scientific Approach

The "Atharva Veda" talks about the importance of preserving and utilizing nature, emphasizing that harvesting should not harm the earth and that people should use nature to live without overexploiting it or not abused Permaculture, cultivation, gardening, rain harvesting for people's own agricultural needs in ancient times f had a lot of knowledge on the subject, because they were totally dependent on rain-water and India has about ten thousand species of plants, of which 5000 have medicinal properties, and 2500 are used as food. The ancient sages had a wealth of knowledge on how to preserve and nurture plant life, and a deep understanding of the complex relationships between plants, animals, landscapes, and other geological features. Knowledge of the intricate web of life enabled plants to be grown in harmony with nature for environmental and human social benefits Conservation provided comprehensive insights into agricultural practices such as strategies and irrigation. *Kashyapiyakrishi Shukti* by Kashyapa is a comprehensive agricultural treatise providing comprehensive knowledge on various aspects of agriculture. On the other hand, *Visvavallabha* by Chakrapani Mishra is another acclaimed historical work that goes into detail on agriculture. Both professions are highly regarded for their valuable contributions to agriculture. Ancient tactics to increase plant yield, and resistance to plant diseases and pests included the usage of naturally available resources. Formulations were applied directly to the soil to improve its fertility, increase water

retention, and reduce erosion. When chemicals were used, their potential was only limited to plants, and the soil's fertility was affected in the long run making it not suitable for further agricultural practices in the long run. In contrast, organic materials would reduce the environmental load when compared to chemical treatment thus maintaining the environmental balance. Many methods mentioned in the ancient texts are proven to be effective even in the recent times. THE SARNGADHARA-PADDHATI is a collection compiled by Śārngadhara. It is an encyclopedic work on a variety of topics, including austerity, eroticism, metaphor, medicine, politics, economics, botany, medicine, aesthetics, criticism in general, philosophy, and war the science of. It explores the most superficial and deepest aspects of almost all human life. The fascinating chapter of this Arbory Horticulture Treatment and Garden Recreation has been translated into these pages. The author of this work, as is clear from the introductory verses', was Sargadhar, Hammira, king of Sikambhari (modern Bundelkhand) in the 13th century a.d. (1283-1301) flourished and Hammira was a powerful prince, a great supporter of learning, and himself a writer. The chapter Upavans-Vinoda from the Sarngadhara Paddhati, the English translation of which is offered here, deals with the following topics -- (1) Glory of Trees, (2) Good and evil omens relating to residence near trees. (3) Selection of soil (for planning trees). (4) Classification of plants, (5) Sowing of seeds, (6) The process of planting, (7) Watering of plants (after planting). (8) The rules for the protection of plants, (9) Construction of a garden house, (10) Examination of the soil where wells (for watering) are to be dug (11) Rules for the nourishment of plants, (12) Kunaps water (recipe for a nutrient solution). (13) Treatment of plants in disease and health, (14) Botanical marvels and (15) Ascertainment of the price of things. Thus there are many such technical texts and are to be revived for the benefit of the world,

Conclusion

The modern techniques mentioned above require a comprehensive understanding of plants, and their efficacy may not be universal across all plant varieties. With numerous plant varieties found on our planet, achieving a sustainable approach using these techniques on every food and commercial crop will take considerable time. Furthermore, the adoption of these advanced techniques on the field is subject to delays as it entails a protracted process of experimenting, testing, validating, and obtaining Intellectual Property Rights clearances. Compounding these challenges, there is minimal or no active connectivity among researchers, industrialists, and farmers. This lack of coordination poses a significant obstacle to realizing sustainable farming practices. As a result, the widespread usage of these advanced technologies by farmers on a large scale remains elusive. Meanwhile, the continued use of chemical fertilizers on agricultural lands is imposing a significant burden on the environment, contributing to various environmental difficulties. The defining principle of ancient agricultural practice is based on harmonious living. To this day, the ancient texts remain extremely important as they provide detailed insights into the production and conservation of plants from seed initiation to growth stage Modern agriculture relies heavily on the use of chemicals and promote plant growth and prevent insect damage. However, this process often neglects the ecological balance of the soil and overlooks the vital role of living organisms in vegetation. The widespread use of chemicals has had long-term disastrous consequences, leading to soil pollution and environmental degradation, making it unsuitable for future agricultural practices Agricultural practices declined. With the

help of ancient texts and best agricultural practices, we can scientifically verify the content of the texts and establish new modified methods for agricultural systems.

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