Book Review

"पादप वर्गिकी (Plant Systematics)"

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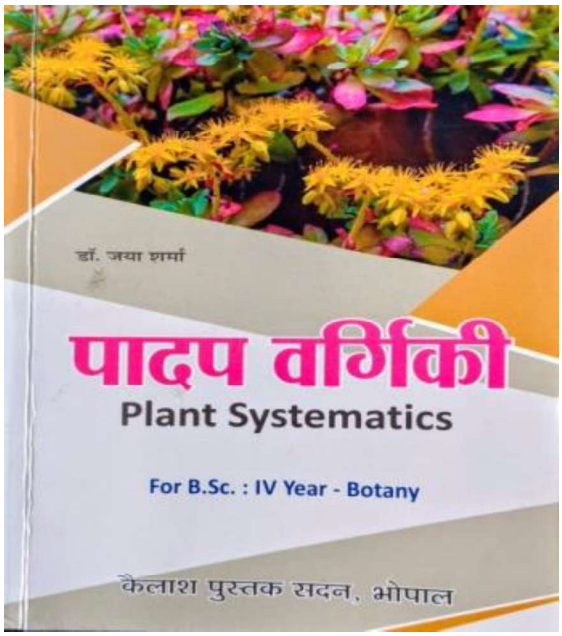
Title : **"पादप वर्गिकी (Plant Systematics)"**
Author: Dr Jaya Sharma
Publisher: Kailash Pustak Sadan, Bhopal
Year of Publication: 2025

1. The **पादप वर्गिकी (Plant Systematics) authored by** Dr Jaya Sharma, Professor, Faculty of Agricultural sciences, SAM Global University is a specialized academic text book for B.Sc students



Book Overview

- **Title:** पादप वर्गिकी (Plant Systematics)
- **Author:** Dr. Jaya Sharma
- **Target Audience:** B.Sc. IV Year – **Publisher:** Kailash Pustak Sadan, Bhopal
- **Language:** Bilingual (Hindi title with English subtitles/technical terms)

Overview

This book gradually introduces students to various aspects of systematics, starting from plant exploration, identification, nomenclature and classification. It briefly describes the contribution of indigenous ethno-botanical studies. It explains the importance of identifying and classifying plants for biodiversity conservation and economic utilization. The book written in bilingual mode, (Hindi title with English subtitles/technical terms) is a significant advantage for students who prefer studying in their mother tongue, technical botanical terms

are provided in English alongside. This overcomes the language barrier and ensures that the students easily opt for post graduate courses & appear for **NET/SET.** It deals with an ancient topic with a modern touch. The curriculum is planned into three primary fields, documentation, hierarchical theory, and the laws of scientific naming

Academic Alignment

Although this book is specifically designed for **B.Sc. IV Year (Botany)** curriculum following the National Education Policy (NEP 2020) guidelines, the topics covered are universal for any for undergraduate student studying systematics. The five units of the syllabi given by M.P. Higher education is broken down to eleven chapters for the ease of study. The questions given after each chapter covers the three major methods of evaluation and also motivates the students to seek higher levels of learning.

Illustrations

For a taxonomy book, the quality of floral diagrams and longitudinal sections (L.S.) of flowers is crucial. The diagrams are given along with the text so it supplements the narration. Most books from Kailash Pustak Sadan are known for providing clear, hand-drawn-style diagrams that are easy for students to replicate in practical files and exams.

A Brief Systematic Breakdown & Analysis of The Chapters

1. Introduction to Plant Systematics

This is a fundamental topic that bridges traditional identification techniques with modern evolutionary science. Students learn the methodology of collecting, pressing, and preserving specimens—a skill essential for roles in forestry, agriculture, and environmental regulation. The tools and keys

2. Origin and Evolution of Angiosperms

This chapter deals with the Origin and Evolution of Angiosperms, describing various theories of evolution, the concept of primitivism. It also describes some primitive living families of angiosperm, its floral characteristics and why they are considered as primitive . The concept of phylogeny and the justification of classifying plants on its basis have been described in very lucid manner.

3. Herbarium and Botanical Gardens-

This chapter delves into various aspects of herbarium, its importance and functions. It also describes some major herbaria of the world. The inclusion of **E-flora** and **Digital Herbariums** ensures students are prepared for global research databases, where type specimens can now be viewed online for comparative studies.

4. Modern Trends of Taxonomy-

The fourth section shifts focus to the contributions of cytology, Phytochemistry and Embryology in Taxonomy Chromosome number, ploidy, Euploidy chromosome morphology, behavior of in meiosis, Cytological Variation as basis of taxonomic classification were explained with example. Phyto chemical evidences which are of taxonomic importance like Amino acids, Phenolics, Betalins, Alkalodies, Terpenoids etc has been introduced to the students. It has been explained how some families are categorized on the basis of similarities in anomalies or traits found in embryonic development, embryo, embryo-sac, pollen grains, seeds, endosperm, ovule to name a few. Numerical taxonomy and its role in formation of taxonomic groups, The chapter also deals with APG System & its evolution .

5. E flora documentation

This section explains the concept and components of e documentation, Methods of e- flora documentation and web based data management. It also informs students about the hard wares like digital cameras & scanners, softwares like BRAHMS, DIVA-GIS, maping tools ArcGIS, Google Earth, QGIS and online platforms like GBIF, JSTOR and e flora Indica. The benefits of using digital platforms for documentation have been enumerated along with its shortfalls.
It also deals with various aspects of e monographs and it's interactive features in fair detail. In the next section e handbook , e flora documentation journals and magazines are introduced to the students with information like the main features, methods of creation, key benefits & challenges in making & using them.

6. Palynology

This small but concise section explains the importance of pollen grains in agriculture, Forensic studies, phylogeny, Allergic studies, biodiversity conservation and its use as evidence in solving complex taxonomic & phylogenetic problems.

7 & 8 Taxonomic Hierarchy & Principles and rules of Botanical Nomenclature and classification

These two chapters are inherent components of classical taxonomy. The language and explanation is very lucid. Taxonomic ranks - Domain, Kingdom, Phylum/Division, Order, Family, Genus and Species are also given in Hindi and the basis of inclusion/ exclusion of any organism in any rank is described, although very briefly . The chapter also explains how to identify a rank, through naming procedure, for example the names of division, order, Family, ends with , phyta , -ales, acrae respectively.
Genus and Species names do not have any such norm.
The concept of species impartialy explains biological, morphological, evolutionary, molecular and ecological point of classification, along with biological, morphological, evolutionary and molecular problems.
The method of specialisation in plant classification explains why a plant has been alloted or designated a particular taxonomic rank. The basis included morphological, biochemical, phylogenetic, molecular, genetic, ecological similarities or dis similarities.
Although students are familiar with scientific naming procedure i.e., Binomial nomenclature system but still there are many misconceptions. The section clearly stated the evolution of Binomial nomenclature system & ICBN , it's Principles, rules, pertaining to valid publication & rejection of names with special reference to the Principle of priority. It briefly touched naming of hybrids involving different texa.

9 & 10 Systems of classification and Classification of Angiosperms
These two chapters covers the syllabus well and elucidates the topic well

11 Molecular Systematics

- Molecular systematics uses molecular data—primarily DNA, RNA, and protein sequences—to analyze genetic differences, identify species, and reconstruct the evolutionary relationships (phylogeny) of organisms. By evaluating molecular variations, it provides an objective, often cladistic approach to classification, complementing traditional morphological methods to determine precise evolutionary lineages. Molecular Systematics: The inclusion of DNA Sequencing, DNA Barcoding, and the creation of Cladograms

ensures students are introduced to the most current biotechnological methods of plant identification

Overall Assessment

The book is a very good attempt to provide concise account of the subject to the students of Hindi language. It strictly follows the syllabus for B.Sc IV Botany of statutory university. Hindi translations of the texts are nearly accurate but in a few places the English text has grammatical errors.

References, Bibliography or web links for further studies, although not mandatory in unified text books at graduation level, but if included could satisfy the students seeking more information