

Textbook of Pharmacognosy and Phytochemistry I

is aimed at the semester IV students of BPharmacy, and is structured as per the latest syllabus recommended by Pharmacy Council of India (PCI) for Bachelor of Pharmacy course effective throughout India from the academic year 2016-17.

The textbook focuses on the • fundamentals of pharmacognosy, • classification of crude drugs, • their identification, • evaluation, • marine drugs, • tissue culture techniques, • phytochemicals present in the drugs and their • medicinal properties.

The textbook will help the undergraduate and postgraduate students of pharmacognosy to understand:

- techniques in cultivation and production of crude drugs
- crude drugs, their uses and chemical nature
- evaluation technique for herbal drugs
- microscopic and morphological evaluation of crude drugs.

This textbook will also serve as a valuable information source for MPharm students as well as undergraduate/postgraduate students of courses in alternative systems of medicine.

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During his academic and research career, Dr Kalia has supervised about 65 MPharm theses and 7 PhD students, conducted/coordinated UGC/AICTE sponsored research projects, and organized AICTE/DST sponsored scientific conventions. He has to his credit over 75 publications in international and national journals of repute. He is also reviewer of many national and international journals.

He is Vice-President of Society of Pharmacognosy (India), North Region. He has received "Lifetime Achievement Award 2016" from Society of Pharmacognosy for his contribution to science and excellence in teaching and research in pharmacognosy and phytochemistry. He has served as an expert member of AICTE and PCI inspection teams as well as NBA committees, as a member of academic council of university body, and as examiner of a number of universities.

He is author of very popular *Textbook of Industrial Pharmacognosy* published by CBSPD.

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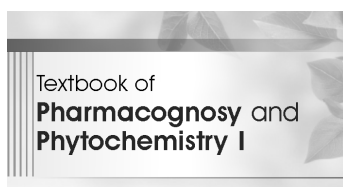
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to

*Almighty Hare Krishna
Hare Rama and to the fond
memories of my better half
Mrs Swaraj Kalia*



Preface

The syllabus of this book is newly introduced course for B Pharmacy students of semester IV, under the revised syllabus recommended by Pharmacy Council of India (PCI), New Delhi, under Bachelor of Pharmacy Course Regulation 2014. It is effective throughout India from the academic year 2016–17.

The Council has recommended the division of the course contents into five units with the certain scope and objective:

Scope: The subject involves the fundamentals of pharmacognosy like, classification of crude drugs, their identification and evaluation, phytochemicals present in them and their medical properties.

Objective: Upon completion of the course. The student shall be able to: (i) Know the techniques in cultivation and production of crude drugs, (ii) Know the crude drugs their uses and chemical nature, (iii) Know the evaluation techniques for herbal drugs, and (iv) Carry-out the microscopic and morphological evaluation of crude drugs.

With an extensive experience in the field of teaching in pharmaceutical sciences at different levels such as B Pharm, M Pharm and PhD in the subject of pharmacognosy and after attaining the popularity from wide acceptance of my previous book *Textbook of Industrial Pharmacognosy* by the students and teachers community aimed to write this *Textbook of Pharmacognosy and Phytochemistry I* for B Pharm students of semester IV.

Therefore this book is divided into five units:

Unit I provides a general introduction to pharmacognosy to cover the objective, the text is discussed under subheading (a) Definition, history scope and development. (b) Organised and unorganised drugs with examples as per recommendation; classification of drugs and quality control of drugs of natural origin with respect to adulteration evaluation by physical, chemical, microscopic and biological methods and properties.

Unit II provides the knowledge of cultivation, collection, processing and storage of drugs of natural origin as well as conservation of medicinal plants.

Unit III explains the development and applications of plant tissue culture in pharmacognosy as well the edible vaccines.

Unit IV discusses the role of pharmacognosy in various system of medicines (Ayurveda, Sidha, Unani and Homeopathy) and also the introduction of secondary metabolites of plants useful in medicines.

Unit V provides the knowledge about the biological source, chemical nature and uses of drugs of natural origin with examples such as fibers, hallucinogens, teratogens, natural allergens and primary metabolites such as carbohydrates, proteins and enzymes; lipids (waxes fats and fixed oils) and the novel medicinal agents from marine source.

The information cited in this book are procured from published books, scientific periodicals, websites of government agencies like AYUSH, WHO; internet and current science. To acknowledge for thanks all the information sources have been given as bibliography. My aim of compiling the information in the form of textbook is for easy access of students at one place to achieve the objective of Pharmacy Council of India's recommendation for semester IV.

I am highly grateful to my daughters, Dr Aparna and Dr Vandana and son-in-law's Dr Ajay and Dr Mahendera for their generous help in the preparation of this book.

I would like to thank CBS Publishers & Distributors Pvt. Ltd., New Delhi for their cooperation in the publication of this book.

I will be grateful to have any criticism and suggestion from readers for further improvement of the book.

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