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Modern Trends in Medicinal and Aromatic Plants

Dr. Geeta Tewari
Dr. Penny Joshi
Dr. Lalit M. Tewari

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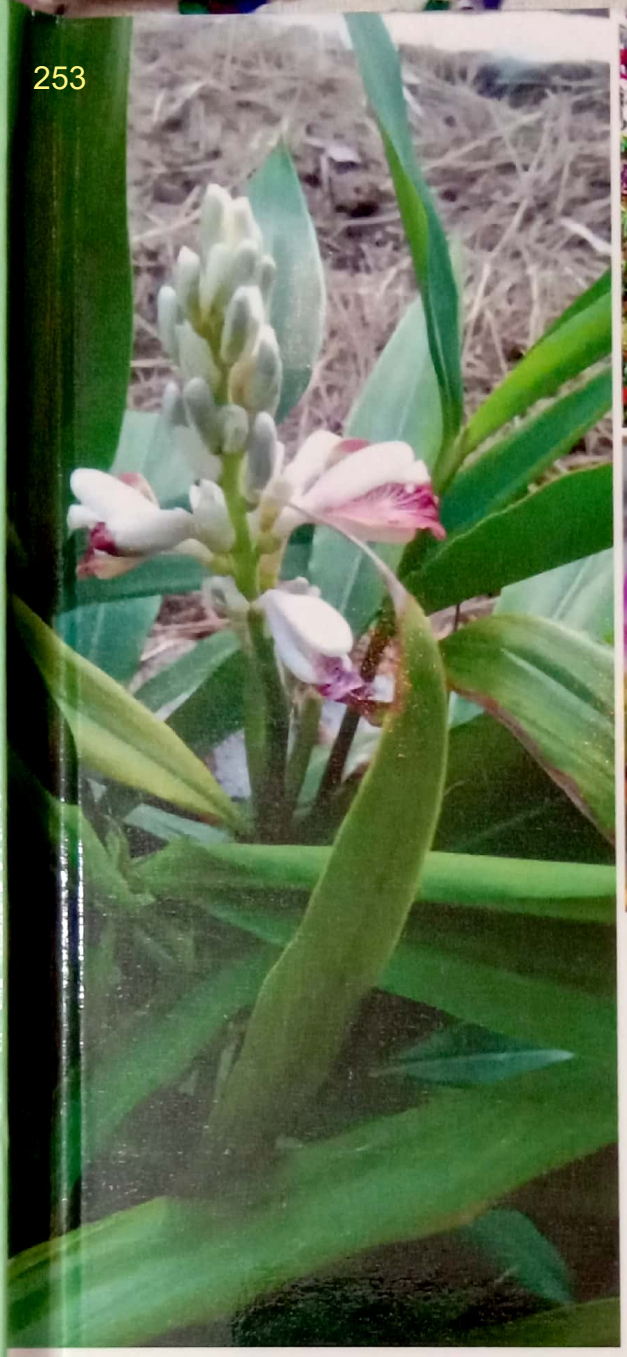

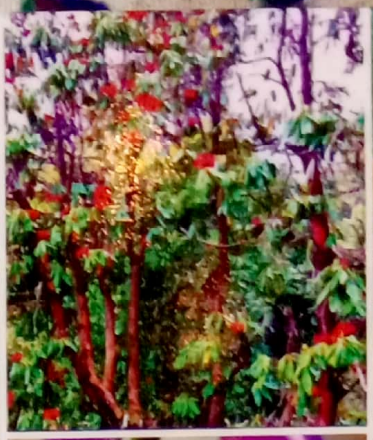

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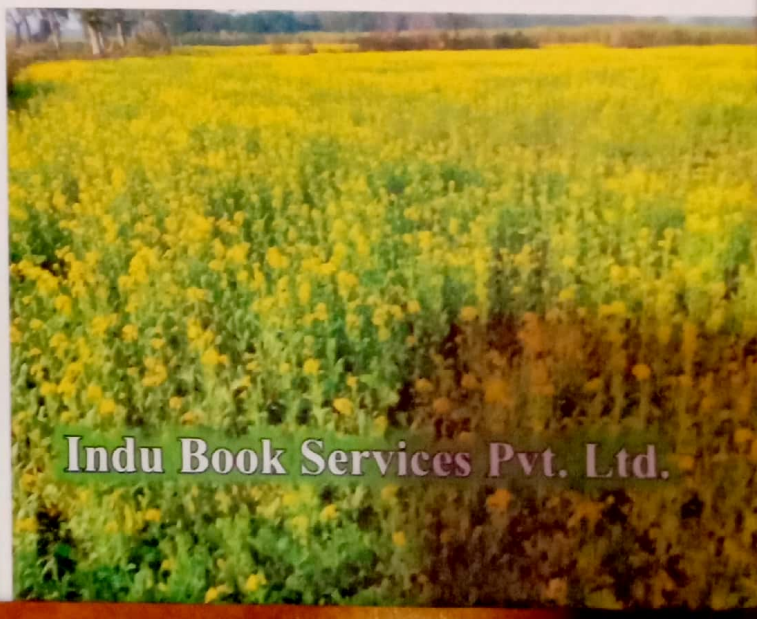

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ABOUT THE BOOK

The book "Modern Trends in Medicinal and Aromatic Plants" presents recent advances and research in the field of medicinal and aromatic plant. These plants synthesize different classes of secondary metabolites such as alkaloids, carbohydrates, lipids, phenols, saponins, and terpenes which are commercially important in pharmaceutical, cosmetic and food and flavouring industries. The book includes 16 chapters highlighting different aspects of commercially important plant-based flavor compounds and their therapeutic potential. The phytochemical screening and antioxidant and antimicrobial potential of *Hedychium spicatum, Rhododendron arboreum, Urtica dioica, Ageratum conyzoides, Rubia cordifolia, Pogostemon benghalensis, Aloe* strains, *Phyllanthus amarus, Salvia* species, *Crassocephalum crepidioides* and *Rhodiola wallichiana* were explored in detail. Other chapters consider the usefulness of medicinal plants as spices and anthelmintic agents. Book also includes the study on phytological, pharmacological overview of Fabaceae trees, phytochemical, morphological, biological properties of *Cynoglossum* and anti-polycystic ovarian syndrome potential of some medicinal plants. The book is an effective reference for undergraduate and postgraduate students along with chemists working in the field of natural product, environmental, pharmaceutical, cosmetic, medicinal and nutrition chemistry.

Dr. Geeta Tewari, M. Sc., NET, GATE, Ph. D. is working as Professor in the Department of Chemistry, Assistant Dean Student Welfare, D. S. B. Campus and Deputy Director, IQAC, Kumaun University, Nainital. She has authored 04 edited books (03 National and 01 International) and two text books. Her publications include 85 research papers in reputed national and international journals, 20 book chapters and more than 20 popular articles in different magazines. She has completed eight research projects of UGC, UCOST, USERC, MOEn and IERP. She is member of various professional societies. She got Teacher of the Year Award 2021, Prof D N Agrawal Award 2022 and Prof Y P S Pangtey Research Award 2022. She is also a recipient of Young Scientist and Women Scientist Awards. Sixteen students completed their M. Sc. Dissertation and eight students completed Ph. D. under her supervision. Her Ph. D. scholar received Governor's Award for best research in 2015.

Dr. Penny Joshi, M.Sc., Ph.D. from University of Delhi, India, Post-doctoral Scientist, Department of Cell Stress Biology at the Roswell Park Cancer institute (RPCI), Buffalo, United States is presently working as an Assistant Professor, in the Department of Chemistry, D. S. B. Campus, Kumaun University, Nainital. Her area of interests includes synthetic chemistry, medicinal chemistry and cancer chemoprevention. She has published 30 research papers in reputed National and International Journals and 07 book chapters. Two US patents also go to her publication credit. One student has been awarded Ph. D. degree under her supervision and currently eight students are pursuing Ph. D. under her guidance. She has completed three research projects funded by UGC, DRDO and MoEF&CC and currently there is one ongoing DST-SERB project. She is a recipient of Prof. K. S. Valdiya Research Award in the year 2022.

Dr. Lalit M. Tewari, M. Sc., Ph. D. is working as Professor in the Department of Botany, Coordinator, IGNOU, D. S. B. Campus, and Director, Research and Development Cell, Kumaun University, Nainital. He has authored fourteen books and ten edited magazines on Uttarakhand culture. He has published 171 research papers in reputed national and international journals, 14 floras and 24 book chapters and more than 100 popular articles in different magazines. He has completed eleven research projects of UGC, UCOST, MOEn, DBT, NMPB and IERP. He got Uttarakhand Ratna Award 2016, Appreciation Certificate from Hon'ble Governor, Uttarakhand for NSS in the year 2017 & 2018, Teacher of the year Award 2020, Director of the year Award 2021, Asia Top 50 Scientists by EETCRS, Mumbai in 2021 and Prof Y P S Pangtey Research Award 2022. He is also a Fellow of Botanical Society (FBS). Forty one students completed Ph. D. and two students completed M. Phil. under his supervision. Administratively, he served as OSD, Deputy Controller, Exam, Programme Coordinator, NSS, Kumaun University, Nainital.

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indubook@ymail.com

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Contents

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Chapter 8

Antihelmintic Activity of Different Medicinal Plants

Divya Mahar[1], Manjunath Chatti[2], Nitish Semwal[1] and Mahesh Chandra Arya[1*]

[1]Department of Chemistry, DSB Campus, Nainital, Kumaun University, Uttarakhand 263002 India

[2]Australian Centre for Electromaterials Science, School of Chemistry, Monash University, Clayton, Victoria 3800, Australia

*Corresponding author email: mcary181@gmail.com

Abstract

Medicinal plants have been used by tribal communities since ancient times for the treatment of several diseases. Tribal people are known to have rich tradition of using a number of plants for their anthelmintic, antioxidant, antibacterial, antifungal activities. The medicinal plants have lesser side effects in comparison to the synthetic drugs. Worldwide helminthiasis is one of the major health problems of organisms, they cause diseases in humans, terrestrial and aquatic animals and sometimes it can cause serious health hazards. Though pharmaceutical drugs are used to cure these diseases due to their effectiveness and fast relief but these drugs are not only expensive but may also have many side effects. There are so many plants, on the other hand which show anthelmintic activities with little or no sideeffects. This chapter sum-up the anthelmintic activity of traditional medicinal plants. The rude extract of leaves, stem, bark, rhizome, fruit, root, and shoot of medicinal plants are used to cure different diseases caused by different species of Platyhelminthes. The specific bioactive molecules isolated from medicinal plants can be used for further analysis of herbal drugs.

Keywords: anthelmintic activities, medicinal plants, tapeworm, trematodes, monogeneans, turbellarians

8.1 INTRODUCTION

The term 'Platyhelminthes' comprises of two Greek terms; platy and helminths; which means "flatworms". They belong to the kingdom Animalia and are commonly known