

erosion has prevented us from achieving levels of excellence in science and education which otherwise we are capable of achieving in all walks of life. The author has compiled available data and dwelt on his personal experiences to support his thesis. Further, he has given suggestions to combat the deadly disease (as he calls it) of Erosion of Ethical and Moral Values (EEMV).

The book consists of three parts. Part A deals with ethical and moral values (EMV) for excellence in science. Part B discusses EMV for excellence in education while part C analyses the subject related to society. Despite the inevitable repetitions and disjointed compilations of various lectures and addresses, the book is well written and is indeed informative and thought-provoking. The contents provide a lot of food for thought for both teachers and the taught, for the researcher at any level, and for the managers of education, science and technology. In summary, the book is a good first attempt to focus the attention of patriotic citizens to a deadly disease which we must tackle before it assumes an epidemic proportion. And, it points out forcefully the need to make ethics as a fundamental subject for students at all levels. It is hoped that this book will inspire more critical discussion, practical initiatives and study materials.

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Neem. N. S. Randhawa and B. S. Parmar, eds. New Age International (P) Ltd. 4835/124, Ansari Road, Daryaganj, New Delhi 110 002. 1996. Price: Rs 500. 332pp.

The multiple efficacy of neem derivatives has attracted the attention of scientists from diverse disciplines, in particular agriculture, public health and medicine. Universal interest is evinced in neem products and their active ingredients. Its utility in plant protection has aroused

interest in the fields of agronomy, soil science, entomology, nematology, pathology and chemistry. Viewed in this context, the book under review is a very relevant publication serving to integrate information in the different fields.

Beginning with the taxonomic and vegetative features, reproduction and embryology, wood characters and gum, the book seeks to explain gene resources and breeding potential of neem, in particular seed sources, genetic variation and seed viability storage. Genetic resources of neem and its wild related types are discussed with emphasis on species diversity as well as ethnobotanical aspects relating to local, native and traditional uses and beliefs. Silvicultural aspects including nursery techniques, stand formation and afforestation, growth stabilities, economics of neem plantations and management are highlighted, besides the importance of neem in various agroforestry systems, agrisilviculture, energy plantation and biomass productivity.

The diversity of insect pests of neem and the nature of damage, fungal and bacterial diseases are emphasized and since many pests suffer from natural epizootics, systematic research on insect pathogens hold great promise for IPM programmes. Stress has been made on botanical pest control, also an important component of IPM, involving neem products in pest management and compatibility of biochemicals with biocontrol agents. Chemical aspects of neem involving isoprenoids and non-isoprenoids and their biosynthesis are enumerated with emphasis on limonoids, azadirachtins and melacinins. Steam volatile components of neem seed/oil have also been indicated, besides methods of processing, standardization and product formulation.

An important aspect of neem studies pertains to its nitrification-inhibiting property as well as effects of its application on ammonia volatilization and on the efficacy of nitrogen utilization by crops. Results are also provided in the relative efficacy of urea and neem-cake coated urea in different crops, as well as comparative efficiency of meliacins and nitrapyrin as nitrification retarders in soil. Since neem

represents the leading edge of a new wave of botanical bioefficacious products, the need for a standardized evaluation procedure, particularly of the active ingredients in a neem product has been emphasized. In tune with this, different parts of the neem tree, its seed cake, different extracts, oil and gum have been evaluated for their bioactivity against plant parasitic nematodes. Bioactivity against insects, information on their antifeedant activity, insect growth regulating effects, toxicity, effect on fertility and reproduction, oviposition deterrent effect, and effect on natural enemies are adequately stressed. Naturally interest is centred on the mode of action of azadirachtin on these pests, notably physiological mechanisms including endocrines and chemosensory mechanisms.

Neem as an ancient veterinary medicine, livestock production and health and ancient human medicine are documented, besides pharmacological studies for therapeutic potentiality in malaria control. Review has been made of pharmacological studies for therapeutic potential relevant to a number of human diseases, along with commercialization of neem. Since it is a renewable resource of various useful products, opportunities for commercialization are great and useful information is provided relating to this aspect on pesticides and allied agrochemicals, medical application, toiletries and cosmetics, cattle and poultry feed and thermal efficiency of wood for fuel.

In view of the increased consciousness of the role of biopesticides in reducing pollution and their overall efficacy, this superplant neem, has increased potential for multisided utilization. This book is a very useful compendium of diversified information which will go a long way towards kindling further interest in the biological, biochemical and physiological aspects of neem.

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