

## Book Review

**Quality standards of Indian medicinal plants**, Vol. 9, edited by Neeraj Tandon, published by Indian Council of Medical Research, New Delhi. 2011, pages xxv+415. Hardbound. Rs. 1792/=, US\$ 120/= ISSN: 0972-7213

Crude drugs are the starting raw material for manufacturing herbal medicines in all the indigenous systems of medicine. Efficacy and safety of any medicine depends on the genuineness and quality of the raw materials used in its preparation. Because of wide-spread belief that herbal medicines are safer than synthetic drugs, demand of medicinal plants has increased many folds in the national and international markets to meet the needs of traditional and modern medicines, nutraceuticals, food supplements, herbal cosmetics, and toiletry products. As cultivation of medicinal plants in India is limited, over 90% medicinal plants are being harvested from the wild habitats to meet ever-growing demands of national and international market. But, due to various factors natural habitats of medicinal plants are destroying. As a result, natural population of medicinal plants is depleting. Consequently, availability of these medicinal plants is decreasing. This has resulted in a gap in demand and supply, leading to adulteration and substitution for genuine material. The usages of such adulterated or spurious raw materials for manufacturing medicine deteriorates the quality and efficacy of the finished product. Moreover, the adulterants may have toxic compounds that can produce deleterious effect on human health. Therefore, correct botanical identity and authenticity of the crude drug materials must be ensured before using the same for preparing medicine. Keeping the above in view, the Indian Council of Medical Research (ICMR) is bringing out a series titled, Quality standards of Indian medicinal plants. The volume 9 of the series contains monographs on 35 plants.

This volume is divided into three main sections i.e. Monographs, Appendices and Indices. Each monograph starts with the parts used, correct

botanical name with authority and synonyms along with main trade name followed by habit and distribution of the plant. Good photographs of the plants and their parts and vernacular names known in different languages are appended. Under the description, detailed macroscopic and microscopic characters of different parts of the plant with special emphasis on diagnostic characteristics, organoleptic examination of the raw material and its powder are given. The macro and microscopic descriptions of the raw drugs are supported by good microphotographs of each monograph. Under the subhead, Chemical constituents, major and minor chemical constituents have been described. Identification of crude drug samples by Thin Layer Chromatography (TLC) has been described with good details giving  $R_f$  values, the colour bands along with colour photographs of TLC patterns. Analytical methods for the identification of each drug are described in detail. Quantitative standards such as foreign matter, acid insoluble ash, ethanol soluble extractive and water soluble extractives, which play an important role in drug standardization are also provided for each drug. Other important aspects of the herbal drugs described are: pharmacology, major therapeutic claims, safety and recommended dose. Since many herbal sources of a drug and its adulterants are quite common, adulterants and substitutes of the drugs have also been provided wherever available. Therapeutic claims, dose and safety aspects of each drug have also been given.

Under the Appendix I, methods of evaluation of crude drugs have been describes in detail. Phytochemical evaluation of raw materials is described in Appendix II. Methods for isolation of the marker compounds have been provided in Appendix III. Proper drying and adequate storage facilities are required for maintaining quality of the raw materials. These facilities have been described in Appendix IV. The guideline of FAO and WHO for analytical methods for pesticides residues and microbial contaminations are given in Appendix V. Plant

allotted to different ICMR institutions for developing these quality standards are listed in Appendix VI.

Botanical names, chemical constituents and other names of the plants are given in Index I, II and III respectively.

The volume will be useful for academicians, researchers, drug testing laboratories, health professionals and regulatory authorities, plant base pharmaceutical industries, crude drug dealers, and

those who are engaged in identification and standardization of crude drugs.

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