MEDICINAL PLANTS IN THERAPY

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Therapy with medicinal plants started since the begining of history.In ecent years greater attention has been given to plant products for use in the-apy for several reasons:

The growing world wide worry from hazards and side effects of synthetic lrugs. Many developed countries have taken steps to create systems and set ıp specialised centres for the following-up of side effects of drugs even after heir registration, in the context of the new concept known as pharmacovigi-ance.

Plants synthesize complicate molecules from simple ones by means of-ıighly specific reaction mechanisms that would be either too difficult or too ostly to duplicate by classical chemical methods. There are certain phytoc-ıemicals that are more advantageous to extract as active ingredients of)lant products than to obtain by synthesis. The products obtained by ;ynthesis may be toxic or may have different therapuetic properties. In)lants these reactions take place at normal biological temperature and pres-ıures, so that the type and quantity of the substances produced will be those hat tehy need for their own metabolism and hence are normally free toxic ngredients.

In view of these factors, there is great demand for certain plant pro-lucts in the world despite the advancements in chemical technology and ıvailability of cheaper synthetic substitutes such as Morphine, Digitoxin, Emetine, Reserpine. In recent years, have a tremendous potential for use as aw materials in industrial pharmaceutical production from both economics ınd therapuetic points of view. Several herbs and plant extracts constitute a arge export market for several developing countries.

The following specimens are examples of medicinal plants of pharma-eutical use:

Catharanthus rosea for the anticancer alkaloids, Vincristine and Vinblastine

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Pyrethrum species as a source for insecticides,

Dioscorea and **Solanum** species as a source of intermediates for the synthesis of therapeutically active steroids including anti-fertility steroids,

Cinchona species for Quinine ond Quinidine,

Papaver somniferum for Opium alkaloids like Morphine, Codeine, Noscapine,

Claviceps purpurea for ergot alkaloids, Ergotamine, Ergometrine etc.,

Digitalis species for cardiac glycosides e.g. Digoxin, Digitalin,

Ipeca for the production of Emetine

Atropa and **Duboisia** for Atropine and Hyoscine,

Rauwolfia for hypertensive and central nervous system active total alkaloids and Reserpine,

Medicinal plants hava also been formulated in modern dosage forms e.g. tablets capsules and syrups.

Consequently, there is now a world-wide trend to go back to natural resources, mainly medicinal plants, even in highly developed countries such as the U.S.A. and Germany where prescriptions of drugs from plant origin are gradually increasing. In pharmaceutical industry most synthetic colouring agents have proven to possess harmful effects, some of them claimed to be carcinogenic. Developing countries are advised to take measures to develope the utilisation and full exploitation of their medicinal plant sources.

The following items may be recommended:

- Cultivation of medicinal plants should be planned to yield sufficient quantities of medicinal plants for pharmaceutical industry.

- Developing countries are rich in medicinal plants but lack specialised phytochemists and technicians. These countries should pay special attention for training specialized staff in this field.

- Plants have to be scientifiially screened pharmacologically through simple extracts to study its action, determination of dosage and toxicity. They should also canfirm efficacy further phytochemical studies can be made for separation of active ingredient which can be formulated in phar-

ceutical forms for easy use. Extraction, formulation and production of gs from medicinal plants must be considered parallel to other synthetic nulations. Therefore, medicinal plants are of great value in the field of atment and curing of diseases besides their strategic value in drug ply.

In conclusion, it is appropriate to stress that medicinal plant research rs three important applications:

- Compounds isolated from plants find direct therapeutic use such as re-pine, vincristine, digitoxin etc.,

- Constituents which are used as starting materials for synthesis of use-drugs such as steroid hormones are normally synthesized from steroidal ogenins,

- Natural products present us with new structures which are used in a rch for new drugs.

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