

STATUS OF WILD MEDICINAL PLANTS IN PAKISTAN AND THE NEED FOR MEDICINAL PLANTS INCORPORATION IN AGROFORESTRY SYSTEM

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Introduction

Medicinal plants growing in different ecological zones of Pakistan have been exploited to such an extent that their natural reproduction in their habitat can not be ensured any more. Due to unscientific and haphazard collection which involves even uprooting to save labour of cutting, it is hard to expect any recovery. The pace of deforestation on the other hand has resulted in site deterioration and the natural ground flora gets hardly any conducive conditions to re-establish a foot hold. Roots, tubers, flowers, fruits which used to be available in abundance are not there any more. Many a plants which flourished under the canopy of a mixture of conifers and broad leaved species can not sustain themselves due to the unfavorable microclimate. The pressure of grazing is another major factor for disappearance of the medicinal plants from the forest floor. In fact the resource base is under an unlimited stress.

Inspite of that Pakistan still can boast of 320 species of medicinal plants growing in different parts of the country. Some important ones are listed in Table 1.

Methods of collection and deficiencies

At present, medicinal plants are collected from the forest area under different systems followed by the provincial Forest Departments:

- Leasing-out the area for the collection of medicinal plants.
- Collection by traders through local people, paying a nominal royalty on the produce to the Forest Departments.
- Collection of raw material by the Forest Department through contractors for subsequent sale of the industry.
- Auctioning of area for the collection of minor forest produce.

There is a need to stream-line the method of collection and to ensure the natural propagation of medicinal plants from the forest areas, and, wherever possible, also to popularize the cultivation of those having commercial value.

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In general, the crude drugs are collected by the graziers herding their livestock in the high hills to earn some extra income. The material is brought to the traders having shops in the foothills, where they pay nominal prices in kind i.e. wheat flour, sugar, tea, pulses, etc. Thus, the major profit is earned by the shopkeeper from the sale and supply of medicinal plants to the various markets of Pakistan. In fact, the villagers do not even get back the cost of labour involved in their collection.

Market trends

Trade in crude drugs of vegetable origin is very erratic in Pakistan. The prices fluctuate greatly due to variations in external and internal demands within the country. The traders are often unscrupulous and try to keep the maximum benefit for themselves instead of benefiting the collectors or resource managers. Hence the availability of particular crude drugs remains very fluid and the market trends can not be determined easily.

Reasons for fluctuation:

- Medicinal plants grow in the far-flung hilly and desert areas of Pakistan, where the facilities for their collection and transportation are very poor. Non-availability of these facilities block the collection of this natural wealth and hence the supply position is generally erratic.
- The market rates generally fluctuate widely with the international and international demands. Lack of a stable market has created problems for the collectors and the drug dealers, as in general, the rising labor costs make collection and transportation uneconomical.
- Trade in crude drugs is monopolized by two or three wholesale drug dealers in most of the markets. The rest of the shopkeepers are small traders and generally depend on wholesale dealers for their supplies.
- The margin of profit earned by the traders is very large as they purchase the crude drugs at nominal rates and obtain the maximum price from the consumers.
- The export of crude drugs from Pakistan is very erratic due to the "Standards restrictions" imposed by the developed countries of the world.

Social benefits

Income earned by the rural population: It is not possible to estimate the income earned by the rural people from the collection of medicinal plants as they are generally paid in kind according to the quantity and quality of the material collected. However, one person on the average would not be getting more than Rs.20.00/day. If properly organized and fully compensated for the hard work done by the rural population, the people could make much more money, since without their active participation, the drug plants could never reach the market.

Other benefits derived by the rural population: Medicinal plants are used as household remedies for various ailments in the rural areas of the country where there are no facilities under the allopathic system. Thus, a large part of the population depends on crude drug treatment as practiced by the "Hakims" under the traditional system of medicine. The drugs used in this system have been known for their efficacy and therapeutic value for the last few centuries. Hence, the rural population has immense faith in the curing properties.

Folk medicine in Pakistan is as old as Harrapa civilization. It used to treat not only minor ailments but also severe ones like paralysis, B.P. and asthma. Folk medicines needs more attention and effort. The positive aspects - its decentralized nature, easy availability of medicine and cultural acceptability - need to be reinforced. Most important, it reduces dependance on imported and costly medicines. In India several voluntary efforts are being made to strengthen the system at local level, e.g. Health for Millions. Project (HFM) in Karala, Deshbandhu Medical System in Tamilnadu. Such organizations are required in Pakistan also. There is great need for clinical research as in China, e.g. Chinese scientists studied the effect of traditional herbal preparation on viral pneumonia in 3000 children.

Medicinal plants in agro-forestry system

Some medicinal plants are cultivated by the farmers for local use and sale to the pharmaceutical industry. Like agricultural crops medicinal plants could also be grown in conjunction with trees. Large scale cultivation of turmeric with poplars in Changa Manga plantations is a case in point. This was subsequently picked up by the neighboring farmers. Medicinal Branch of the PFI has also conducted some experiments on cultivation of medicinal plants on farm lands. The results should be circulated for the benefit of farming community. Punjab Forest Research Institute should set up experimental plots on private lands to assess the possibility of growing medicinal plants along with suitable species. In view of the large scale destruction of wild medicinal plants the only way out to ensure a sustained supply is to resort to artificial propagation.

TABLE 1. Important Medicinal Plants in Pakistan

BALUCHISTAN

Artemisia maritima (Afsantine)
Juniperus excelsa (Abhel)
Thymus serpyllum (Ban jawain)
Rhazya stricta (Vena)
Ferula foetida (hing)

Ephedra procera (Asmania)
Withania coagulans (Panir dodi)
Berberis lycium (Darhald)
Fumaria indica (Shahtra)
Rheum emodi (Revand chini)

SINDH

Cassia senna (Sanna)
Commiphora wightii (Gugal)
Rhazya stricta (Vena)

Ricinus communis (Arand)
Citrullus colocynthis (Hantal)
Fumaria indica (Shahtra)

PUNJAB

Jentiana kurro (Nilkanth)
Adiantum capillus-veneris (Persoshan)
Fumaria indica (Shahtra)
Adhatoda vasica (Berg bansa)
Datura metel (Dhatura)
Ricinus communis (Arand)
Solanum nigrum (Mako)
Berberis lycium (Darhald)
Valeriana wallichii (Mushkbala)
Viola serpens (Banafsha)

Geranium wallichianum (Rattan jot)
Cannabis sativa (Bhang)
Cassia absus (Chaksu)
Cassia fistula (Amaltas)
Plantago ovata (Aspaghool)
Abutilon indicum (Pill Buti)
Peganum harmala (Harmal)
Dioscorea deltoidea (Kanis)
Podophyllum emodi (Bankakri)
Zizyphus sativa (Unab)

N.W.F.P.

Cochicum luteum (Suranjane-Talkh)
Hyoscyamus niger (Ajwain-khurasani)
Valeriana wallichii (Mushkbala)
Atropa acuminata (Angoor shafa)
Aconitum heterophyllum (Atees Talkh)
Aconitum laeve (Zehar Buti)
Aconitum chasmanthum (Mohri)
Cannabis sativa (Bhang)
Rhazya stricta (Vena)
Swertia chirayita (Chirata)
Juniperus excelsa (Abhel)
Thymus serpyllum (Ban jawain)
Fumaria indica (Shahtra)
Abutilon indicum (Pili Buti)
Datura metel (Dhatura)
Angelica glauca (Chora)
Polygonum amplexicaule (Anjbar)
Viola serpens (Banafsha)

Artemisia maritima (Afsantine)
Dioscorea deltoidea (Kanis)
Berberis lycium (Darhald)
Podophyllum emodi (Bankakari)
Bergenia ciliata (Zakham-e-Hayat)
Paeonia emodi (Mamekh)
Withania coagulans (Panir dodi)
Peganum harmala (Harmal)
Adhatoda vasica (Berg bansa)
Lavatera Kashmiriana (Resha khatmi)
Cassia fistula (Amaltas)
Cassia absus (Chaksu)
Plantago ovata (Aspaghool)
Solanum nigrum (Mako)
Adiantum capillus-veneris (Persoshan)
Geranium wallichianum (Rattan jot)
Zizyphus sativa (Unab)

AZAD KASHMIR

Dioscorea deltoidea (Kanis)
Atropa acuminata (Angoor shafa)
Aconitum chasmanthum (Mohri)
Valeriana wallichii (Mushk Bala)
Cochicum luteum (Suranjane-Talkh)
Rheum emodi (Revand chini)
Gentiana kurroo (Nilkanth)
Berberis lycium (Darhald)
Swertia chirayita (Chirata)
Adhatoda vasica (Berg bansa)
Adiantum capillus-veneris (Persoshan)
Geranium wallichianum (Rattan jot)
Paeonia emodi (Mamekh)

Saussurea lappa (Kuth)
Aconitum heterophyllum (Atees Talkh)
Aconitum laeve (Zehar Buti)
Datura stramonium (Dhatura)
Ferula spp. (Hing)
Podophyllum emodi (Bankakri)
Viola serpens (Banafsha)
Lavatera Kashmiriana (Resha khatmi)
Bergenia ciliata (Zakham-e-Hayat)
Zizyphus sativa (Unab)
Angelica glauca (Chora)
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