

The Medicinal Plants of Salt Range

Habib Ahmad, ¹Ashiq Ahmad and Mian Mohib Jan
Department of Botany, Government Jahanzeb Postgraduate
College Saidu Sharif, Swat, Pakistan, ¹WWF- Peshawar Pakistan

Abstract: Besides preserving mines of salts, minerals, fossils, archeological and cultural heritage; the mountainous terrain of the Salt Range also has immense potential for its biodiversity in the broadly overlapping " the subtropical dry evergreen and the thorny subtropical semi deciduous" types of forest ecologies. *Olea ferruginea*, *Acacia modesta*, *Reptonia buxifolia* and *Salvadora oleoides* represent the apparent arboreal landscape of the terrain. More than 92 medicinal plants are not only used for curing ailments ranging from mild infections to the chronic ulcers but are also contributing a lot to the rural economy of the area. Floral diversity in general, the species of *Litsea*, *Neolitsea* and *Colchicum* in particular, are exposed to severe collection and the habitat loss pressures. Commonly known medicinal plants of the Salt Range, Punjab and their therapeutic uses are presented in this paper.

Key words: The salt range, floristics, medicinal flora, therapeutics

Introduction

The mountain terrain of Salt Range spreads over the administrative districts of Attock, Chackwal, Mianwali, Sargodah, Khushab and Jehlam in the Punjab, Pakistan. It can be traced in between 3223-3300 N and 7130-7330 E. Physically the salt range consists of two distinct hill tracts running parallel to each other, broadly in the east to southern west direction. The parallel series of mountains are repeatedly intervened by ridges, spurs and even hills leading to the formation of valleys and lakes of the diverse phytogeographic and agroclimatic regimes. Soon Valley and Lake Uchali are famous among valleys and lakes of the Salt Range, which are visited by thousands of the tourists annually, from within the country and abroad.

The area is occupied by variety of people preserving diverse culture of managing nature in traditional ways. Most of the areas of the Salt Range is under developed and in the rural community the people primarily depend upon the traditional system of health care (TSHC), which is mainly based upon the plants collected the natural forest. In Indo-Pak Sub Continent TSHC emerged, flourished and was documented in the form of Rig-Veda from 4500-1600 BC and Ayur Veda from 2500 to 600 BC (Zaman and Khan, 1972). The latter is still in practice under the name of Vedic medicines. After the invasion of Greeks, Vedic System was transformed into Unani medicine and was in turn modified into Hikmat or Tib with dawn of Islam (Khan, 1951). European Medical Botanists botanized the Sub Continent in Eighteen-Century AD (Stewart and Ferguson, 1996). Their explorations and inventions provided base to bridge the gape between traditional experiential and the modern scientific knowledge of plant use.

The isolation of the effective anticarcinogenic drugs (vincacine and taxol), cholestine a cholesterol lowering herbal supplement in the United States and tea for longevity in Malaysia, increased the enthusiasm of people, of finding the products of their special interests in plants. Keeping in view the increasing demands for natural drugs in a state of eroding folk knowledge along with the diminishing traditional societies, it is imperative to preserve the floral diversity along with folk knowledge of therapeutics. This paper is an attempt to introduce the medicinal flora of Salt Range. Which can be used as an easy reference for future studies of the eroding flora, of this fragile ecosystem.

Materials and Methods

Survey of literature and computer search regarding the medicinal flora of the Salt Ranges, included in Punjab Province (Pakistan) was carried out in the libraries of the Universities of the Punjab and Peshawar, PFI Peshawar, Quaid-I-Azam University and NARC, Islamabad. Extensive survey (Kent and Coker, 1995; Akber, 2000) of the area was done and the visible realities (qualitatively) regarding vegetation were included in this paper. Survey of the area was carried out from October 1999 to March 2000. Identification of plants was done with the help of Nasir and Ali

(1971-1995) and Ali and Qaiser (1995-1998). Field information regarding plant use were confirmed from Baquar (1989) and Awan (1978).

Results and Discussion

Results of the survey shows that 94 species belong to 45 angiospermic families (Table 1) are traditionally popular as healing agents and are in common practice in the traditional system of health care of the Salt Range. Besides the listed angiosperms there are however, still a large number of plants whose medicinal evaluation is yet to be done. Local therapeutic uses of each species are listed in Table 1. Majorities of the listed species are under variable physical and anthropogenic stresses. Some of the species e.g. *Litsea*, and *Neolitsea* are ruthlessly exploited for their marketable bark product "Meda Lakri". These trees are of special healing importance in the traditional system of health care. Besides their use as topical antiseptic in poultice applications, they are also used as general and bone tonic. They are also extensively used in the in the ethno- veterinary medicine. The extensive bark extraction of these trees has not only decreased their productivity but has also hampered its seed development and the regeneration potential. All these factors are diminishing the availability of these trees. They have narrow ecological amplitude and their unwise use has threatened their existence in the salt range. The bulbs and seed of *Colchicum aitchisonii* are also collected and exported under the trade name Suranjan-e-sherin. Urgent check on the extraction of these species is imperative, otherwise their irreversible loss will not only shatter the ecosystem of Salt Range but will also hamper the alternate earning means of the rural poor. The common forest species like *Olea ferruginea*, *Acacia modesta*, *Salvadora oleoides*, *Reptonia buxifolia* and *Grewia tenax* etc. has but relatively wide distribution and do not face much conservation problem due to their strong regeneration capacity and limited misuse. But their intact forest is essential for providing shelter to the fragile biodiversity resources of the Salt Range.

The traditional drug market survey shows that, salt range contribute a lot in term of species to the market. The species taken under consideration, their production size and average price (Table 2) shows that only 18 commercial species available in the Salt Range contribute Rs. 18678 thousands to the circulation of the trade of medicinal herbs. The Salt Range has thus retained the treasury of valuable plant resources along with the communities having the inherent traditional knowledge of plant use. Extensive survey of the area showed that all these healing resources are eroding with alarming rate from the Salt Range due to the: unsustainable development at the expense of natural resources, the disintegration of the traditional resource management culture and unplanned population growth.

Floristically two overlapping natural forests i.e., the subtropical dry evergreen type and thorny subtropical semi deciduous (Khan,

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Table 1: Locally known medicinal plants found in the salt range

Botanical name	Local name	Part used	Therapeutics
<i>Abutilon indicum</i>	Pataka	Whole plant	Urethritis, gonorrhoea, diuretic, aphrodisiac
<i>Acacia farnesiana</i>	Walayati kikar	Gum and bark	Demulcent, astringent
<i>Acacia modesta</i>	Phlai	Gum	Restorative lumbago
<i>Acacia nilotica</i>	Kikar	Gum	Restorative lumbago
<i>Achyranthus aspera</i>	Puthkanda	Whole plant	Diuretic, purgative, astringent
<i>Adhatoda vasica</i>	Baikar	Whole plant	Bronchitis, asthma, antiseptic
<i>Ajuga bracteosa</i>	Booti	Shoot	Blood purifier, hypertension, epilepsy
<i>Ajuga parviflora</i>	Booti	Shoot	Blood purifier, hypertension, epilepsy
<i>Alhagi maurorum</i>	Kandera	Whole plant	Expectorant, laxative and blood purifier
<i>Allium ascalonicum</i>	Gandana	Whole plant	Thought to be aphrodisiac
<i>Anisomeles indica</i>	*	Whole plant	Astringent, tonic and carminative
<i>Asparagus adscendens</i>	Sufaid musli	Root and tubers	Diarrhea, dysentery and glactogogue
<i>Asparagus capitatus</i>	Dus	Roots	Tonic, dysentery, aphrodisiac
<i>Berberis lycium</i>	Kashmal	Root bark	Tonic, febrifuge
<i>Boerhavia diffusa</i>	Itsit	Whole plant	Anemia, expectorant febrifuge, jaundice
<i>Buxus papillosa</i>	Peppar	Whole plant	Diaphoretic, purgative antirheumatic
<i>Calotropis procera</i>	Ak	Latex	Applied to necks bulls for regeneration of hairs.
<i>Cannabis sativa</i>	Bhang	Shoots	Analgesic, narcotic and antispasmodic
<i>Cappris decidua</i>	Karir	Whole plant	Laxative, diaphoretic, astringent, cardiac troubles
<i>Cappris spinosa</i>	Kakri, kabra	Young leaves, fruit and root	Condiment, edible fruit, analgesic, tonic and expectorant
<i>Caralluma tuberculata</i>	Choungan	Whole plant	A costly vegetable, tonic, febrifuge and carminative
<i>Carissa opaca</i>	Garanda	Roots	Purgative, used in veterinary
<i>Chenopodium album</i>	Bathu	Whole plant	Enlarged spleen, laxative and hepatic disorders
<i>Chenopodium ambrosioides</i>	*	Whole plant	Anthelmintic and carminative
<i>Chenopodium botrys</i>	*	Whole plant	Sugar and anthelmintic
<i>Chrozophora tinctoria</i>	Kuronda	Whole plant	Emetic and cathartic
<i>Cichorium intybus</i>	Kasni	Whole plant	Tonic, pot herb and febrifuge
<i>Cirsium arvense</i>	Pholi	Seed	Diaphoretic, tonic and emetic
<i>Cissampelos piperia</i>	Akandi	Leaves, roots	Purgative, diuretic and stomachache
<i>Citrus colocynthis</i>	Indryan	Fruit and roots	Constipation, jaundice intestinal disorders
<i>Cordia dichotoma</i>	Lasora	Whole plant	Dyspepsia, febrifuge, expectorant.
<i>Cordia vestita</i>	Kumbi	Fruit	Expectorant, astringent and demulcent
<i>Datura metel</i>	Datoora	Seeds, leaves	Analgesic, antiseptic and expectorant
<i>Desmodium gangeticum</i>	Salpan	Roots	Asthma, coughs, diuretic and tonic
<i>Dicleptera roburghiana</i>	Kirich	Shoots	Tonic
<i>Dioscorea deltoides</i>	Kanis	Rhizome	Fish poison, applied to ulcer and anti lice
<i>Dodonaea viscosa</i>	Sanatha	Leaves and bark	Fish poison, topical antirheumatic
<i>Eclipta prostrata</i>	Bhangra	Shoot	Fixative, tonic and antiasthmatic
<i>Ehretia obtusifolia</i>	Chamror	Root	Used in vernal diseases
<i>Ficus racemosa</i>	Gular roomul	Bark & fruit	Its edible fruit is carminative, bark and roots are astringent
<i>Fumaria indica</i>	Shahtra	Whole plant	Diaphoretic anthelmintic scrofula
<i>Galium aparine</i>	Banafsha	Sape	Diuretic, antiscorbic
<i>Geranium ocellatum</i>	Banafsha	Whole plant	Roots are diuretic and astringent
<i>Geranium rotundifolium</i>	Banafsha	Roots	Roots are diuretic and astringent
<i>Hyoscyamus insanus</i>	Dewana bhang	Whole plant	Antiasthmatic, laxative and demulcent
<i>Incarvillea emodi</i>	Kaur	Whole plant	Used as febrifuge
<i>Isodon rugosus</i>	Lana booti	Roots	Roots decoction used as atimalarial
<i>Jasminum officinale</i>	Chambely	Young shoots	Oral candidacies, emmenagogue and anthelmintic
<i>Lallemantia royleana</i>	Tukhm balanga	Seed	Sedative, constipation
<i>Litsea monopetala</i>	Maida lakri	Bark	Applied to bone fractures, diarrhea and astringent
<i>Malva neglecta</i>	Khubasi	Whole plant	Piles, expectorant, constipation
<i>Malvastrum coromendelianum</i>	Jhar	Whole plant	Emollient and resolvent
<i>Martynia annua</i>	Hathjory	Shoot and fruits	Laxative, throat sore and epilepsy
<i>Colchicum aitchisonii</i>	Suranjane sherin	Root	Tonic, purgative
<i>Mimosa himalayana</i>	Arlu	Root	Antiemetic
<i>Neolitsea chinensis</i>	Maida sak	Bark	Anodyne, aphrodisiac, antiseptic and analgesic.
<i>Nepeta hindostana</i>	Badrangboua	Shoots	As gargle for sore throat, cardiac tonic and gonorrhoea
<i>Cerium indicum</i>	Kaner	Leaves	Applied externally to ulcers
<i>Ocimum americanum</i>	Kali tulsi	Young shoots	Paste applied on infected skin
<i>Olea ferruginea</i>	Kau	Leaves, oil	Demulcent, gonorrhoea
<i>Onosma hispidium</i>	*	Roots	Applied in mustard oil to make the hair soft and beautiful
<i>Otostagia limbata</i>	Awani	Leaves	Gum diseases and ophthalmia
<i>Oxalis comiculata</i>	Khatta metha	Shoots	Scurvy, antiscorbic
<i>Plantago ovata</i>	*	Seed and husk	Cooling, antidyentery and anti constificient.
<i>Papaver hybridum</i>	Gule lala	Petals	Diaphoretic
<i>Peganum hemala</i>	Armal	Whole plant	Aphrodisiac, emmangogue hypnotic, antispasmodic
<i>Pergularia extensa</i>	Siali	Root bark and leaves	Leucoderma, antiperiodic, anthelmintic and amenorrhoea.
<i>Periploca aphylla</i>	Bata	Bark and latex	Bark decoction is purgative and antibiotic. Latex is applied to ulcers
<i>Pistacia integerrima</i>	Kakar singi	Galls and bark	Antiseptic, expectorant, tonic, antiseptic and used agianst jaundice
<i>Plantago ovata</i>	Ispaghol	Seed and husk	Constipation, cronic dysentery
<i>Rhamnus trigueta</i>	Batkatkar	Bark	Tonic, astringent, sore throat and febrifuge
<i>Rhazya stricta</i>	Vena	Leaves	Tonic, throat sore
<i>Rosa damascena</i>	Gule surkh	Petals	Cephalic tonic astringent aromatic
<i>Rumex vesicarius</i>	Khatti booti	Shoot	Aperient, cooling, diuretic and astringent.

Table 1: Continued

Botanical name	Local name	Part used	Therapeutics
<i>Salvadora oleoides</i>	Wand, thal	Seed, oil and bark	Coughs, rheumatism
<i>Salvia aegyptica</i>	Kuchan	Seed	Diarrhea, gonorrhoea, hemorrhoids
<i>Salvia moorcroftiana</i>	*	Leaves	Applied to tumors and ulcers
<i>Sida compressa</i>	Mukhniboti	Whole plant	Tuberculosis, rheumatism
<i>Sida cordifolia</i>	Bariar	Whole plant	Rheumatism, gonorrhoea and spermatorrhoea
<i>Sisymbrium irio</i>	Khaksir	Seed	Condiment, expectorant asthma
<i>Solanum indicum</i>	Mahokarti	Root, leaves and fruit	Expectorant, carminative analgesic, febrifuge
<i>Solanum surattense</i>	Mahukri	Whole plant	Vasodilator, astringent expectorant
<i>Sophora mollis</i>	Khumbi	Seed	Anthelmintic
<i>Taraxicum officinale</i>	Dudal	Root and leaves	Tonic, chronic renal disorders
<i>Tecomella undulata</i>	Lahura	Bark	Syphilis
<i>Teucrium stocksianum</i>	Koondibooti	Shoot	Blood purifier hypertension, epilepsy
<i>Trachyspermum ammi</i>	Ajwain	Seed	Carminative, stimulant, colic dyspepsia
<i>Trigonella incisa</i>	Mianipluni	Seed	Dyspepsia
<i>Vernonia anthelmintica</i>	Kaljiri	Seed	Tonic, diuretic, anthelmintic
<i>Viola cineria</i>	Banafsha	Leaves and flowers	Febrifuge, expectorant, astringent and laxative.
<i>Withania coagulans</i>	Panir dodi	Whole plant	Sedative, emetic, diuretic
<i>Woodfordia fruticosa</i>	Dhawi	Flowers	Astringent, stimulant hemorrhoids
<i>Zanthoxylum armatum</i>	Thimer	Fruit and seed	Aromatic, tonic, dyspepsia, toothache
<i>Zizyphus numularia</i>	Malla	Leaves, fruit	Scabies, constipation

*Local names not confirmed

Table 2: Rapid drug market survey to which the salt range contribute

Botanical name	Local name	Part used	Consumption (Tons)	Price (Rs .000)
<i>Cassia absus</i>	Chasku	Seed	48	1008
<i>Cichorium intybus</i>	Kasni	Seed & roots	53	795
<i>Fumaria indica</i>	Shahtra	Whole plant	26	182
<i>Lallemantia royleana</i>	Tukhme Balanga	Seed	57	684
<i>Lawsonia alba</i>	Hina	Leaves	200	80
<i>Mallotus philippensis</i>	Kamila	Fruit	20	5280
<i>Colchicum aitchisonii</i>	Suranjane Sherin	Roots	23	805
<i>Nigella sativa</i>	Kalenji	Seed	55	550
<i>Paganum hamala</i>	Harmal	Seed	98	294
<i>Plantago ovata</i>	Ispaghool	Seeds	256	1792
<i>Pongamia glabra</i>	Karanjawa	Seed	12	132
<i>Rosa damascena</i>	Gule surkh	Flowers	164	3280
<i>Sisymbrium irio</i>	Khaksir	Seed	81	810
<i>Terminalia arjuna</i>	Bhera	Fruit	124	744
<i>Trapa bispinosa</i>	Singhara	Fruit	23	1265
<i>Vetiveria zizanioides</i>	Khas Khas	Roots	21	662
<i>Withania coagulans</i>	Panir dodi	Fruit	105	315
<i>Zanthoxylum alatum</i>	Thimer	Seed	31	310
Total			1366	18678

Source: Khan (1985).

1960; Champion *et al.*, 1965) form vegetational landscape of Salt Range. *Acacia modesta*, *Olea ferruginea*, *Reptonia buxifolia* and *Dodonaea viscosa* characterize the former type of forest. Whereas the later is represented by highly degraded scrubs of *Acacia modesta*, *Salvadora oleoides*, *Capparis decidua*, *Carrisa opaca* and *Maytenus royleanus* etc. A part of the forest in the Salt Range has got the status of protected forest, its history and management considerations can be met with in Khan (1960).

Biodiversity is a global concern (Josephson, 2000). Neither any record of biodiversity of the Salt Range exists, nor any census of its floral composition associated with the genetic diversity of the area is reported. Its protection for the prosperous livelihood of the coming generations and the socioeconomic/ecological needs of the communities associated-with seems very difficult. It can only be achieved through the creation of database regarding the conservation status of the ecologically important species of the area. Development of the effective buffer zone around the core-protected areas, identified thereby, will minimize direct intervention into the ecological resources. *Colchicum*, *Litsea* and *Neolitsea*, which are apparently disappearing at the alarming rate, needs urgent rehabilitation, imposing ban on their extraction in any form, will be the immediate strategy. Encouraging the cultivation of *Litsea monopetala*, *Neolitsea chinensis*, *Pistacia integerima* and *Colchicum aitchisonii* as minor crops may not only be the long-term conservation strategy but may also be an additional income generating source for the people.

As nothing can done without the effective involvement of the civil society. People shall be made aware regarding the disastrous degradation of vegetation in general and the extinction of medicinal plant in particular. Collectors may be educated regarding

the life cycles of plants, so that the impact of improper collection time on the quality and conservation of the species are refuted.

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