Ethnomedicinal Survey for Important Plants of Jalalpur Jattan, District Gujrat, Punjab, Pakistan

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Abstract

An ethnomedicinal survey was carried out in Jalalpur Jattan District Gujrat, Punjab-Pakistan for documentation of important flora and information from local community about their medicinal uses. The indigenous knowledge of local traditional uses was collected through questionnaire and personal interviews during field trips. Plants with their correct nomenclature were arranged by family name, vernacular name, part use, ethnomedicinal remedies and ethnomedicinal uses. The identification and nomenclature of the listed plants were based on The Flora of Pakistan. A total of 88 plants species were identified by taxonomic description and locally by ethnomedicinal knowledge of people existing in the region. Plant specimens collected, identified, preserved and mounted were deposited in the department of botany, University of Gujrat, Pakistan for future references.

Key words: Ethnomedicinal Survey; indigenous knowledge; Jalalpur Jattan; District Gujrat.

Introduction

Pakistan is a fairly large country endowed with a variety of climates, ecological zones and topographical regions (Hussain et al., 2008). The flora is, likewise, extremely varied and diverse and highly fascinating. Nearly six thousand species of flowering plants are reported from Pakistan and Kashmir (Shinwari, 1996). The history of discovery and use of different medicinal plants is as old as the history of discovery and use of plants for food (Ibrar, 2002). Medicinal plants play a key role in traditional health care system for human and animals. Most of allopathic drugs also comprise extracts taken from medicinal plants (Rashid and Arshad, 2002).
Gujrat is an ancient district of Pakistan located between two famous rivers, the Jhelum River and the Chenab River. Because of its proximity with the rivers, the land is good for cultivation with rice and sugar cane as main crops. It is bounded on the northeast by Jammu and Kashmir, on the northwest by the Jhelum River which separates it from Jhelum District, on the east and southeast by the Chenab River, separating it from the districts of Gujranwala and Sialkot; and on the west by Mandi Bahauddin District. District Gujrat is spread over an area of 3,192 square kilometres and comprises the three tehsils of Gujrat, Kharian and Sarai Alamgir. The District Gujrat lies between 32° to 35° North latitudes and 73° 45’ East longitudes. This district has moderate climate. During peak summer, the daytime temperature shoots up to 45°C, but the hot spells are relatively short due to the proximity of the Azad Kashmir Mountains. During the winter months the minimum temperature may fall below 2°C. The average rainfall on the Kashmir border is over 100 cm; at Kharian it is 75 cm, at Gujrat 67 cm, at Dinga 50 cm and at Sarsal 48 cm.

About 80% population of the world depends on the traditional system of health care (Ahmad, 2005). These medicines have less side effects and man can get the herbs easily from nature. Unani system is dominant in Pakistan but the ethno medicinal plants use is also seen in the remote areas. (Ahmad et al. 2003). The indigenous traditional knowledge of herbal plants of communities where it has been transmitted orally for many years is fast disappearing from the face of world due to transformation of traditional culture (Hussain et al., 2008). The people, who are native to the area in which the plants occur, use around 90% of the medicinal species (Baquar, 1989). This is indicative of the vast repository of knowledge of plant medicine that is still available for global use, provided of course that it does not get lost before it can be tapped or documented. Traditional and indigenous medical knowledge of plants, both oral and codified, are undoubtedly eroding (Mujtaba and Khan, 2007).

Keeping in view the importance of medicinal flora, this study was arranged to document and collect Ethnomedicinal tibb and ethnomedicinal knowledge about the wild plants of District Gujrat-Pakistan.

**Materials and Methods**

**Sample collection and preservation**

Four field trips were arranged in order to collect information about the Ethnomedicinal tibb and ethnomedicinal uses of plants by the local people during 2009 in Jalalpur Jattan District Gujrat,
Punjab-Pakistan. Standard methods were followed with regard for collection of plant materials, drying, mounting, preparation and preservation of plant specimens described by Nasir and Ali (2001). Voucher specimens of medicinal plants in triplicates were collected, prepared and identified. Plants with their correct nomenclature were arranged alphabetically by family name, vernacular name, ethnomedicinal tibb and ethnomedicinal uses. The identification and nomenclature of the listed plants were based on The Flora of Pakistan (Nasir and Ali, 1978).

**Ethnomedicinal knowledge**

A questionnaire method was adopted for documentation of ethnomedicinal knowledge. The interviews were carried out from local community to document local name and ethnomedicinal uses. About 200 informants have been interviewed on random basis. The indigenous medicinal plants having traditional knowledge of utilization among the people have been selected as reference specimens.

**Results**

During the present study, ethnomedicinal data on 88 plant species was collected. Information regarding their botanical name, vernacular name, family, part used and their ethnomedicinal uses are listed below starting with family name and binomial.

1. Amaranthaceae: *Achyranthes aspera* L.
   - **Common Names**: Puth Kanda, Chaff Plant
   - **Parts used**: Whole Plant
   - **Ethnomedicinal uses**: kidney problems and cough.

2. Anacardiaceae: *Mangifera indica* L.
   - **Common Names**: Aam, Mango
   - **Parts used**: Leaf and Seed
   - **Ethnomedicinal uses**: Ear ache, Vomiting.

3. Apocynaceae: *Nerium indicum* Mill.
   - **Common Names**: Kanhera, Oleander
   - **Parts used**: Root
   - **Ethnomedicinal uses**: Root is ground into powder and used for abortion.

4. Arecaceae: *Phoenix dactylifera* L.
   - **Common Names**: Khajur, Date
   - **Parts used**: Fruit
   - **Ethnomedicinal uses**: General body weakness.
5. Asclepiadaceae: *Calotropis procera* (Aiton) W.T. Aiton
   - **Common Names**: Ak, Sodom’s Apple
   - **Parts used**: Leaf
   - **Ethnomedicinal uses**: In the treatment of asthma.

6. Asphodelaceae: *Aloe vera* (L.) Burm. f.
   - **Common Names**: Kwargandal, Aloe
   - **Parts used**: Leaf
   - **Ethnomedicinal uses**: Rheumatism, body weakness and in the treatment of pimples or acne.

   - **Common Names**: Jhahoo, Wormwood
   - **Parts used**: Whole plant
   - **Ethnomedicinal uses**: Used as a purgative and in the treatment of burns.

   - **Common Names**: Poli, Carthamus
   - **Parts used**: Seed
   - **Ethnomedicinal uses**: Grind seed flour is used to treat ulcer problems.

   - **Common Names**: Sofed Banghra
   - **Parts used**: Leaf
   - **Ethnomedicinal uses**: leaf paste applied to treat allergy, athlete’s foot and ringworm.

10. Cannabaceae: *Cannabis sativa* L.
    - **Common Names**: Bhang, Indian Hemp
    - **Part used**: Whole Plant
    - **Ethnomedicinal uses**: Used to reduce general body inflammation, intoxication, loss of appetite

11. Chenopodiaceae: *Chenopodium album* L.
    - **Common Names**: Bathu, Goose Foot
    - **Parts used**: Whole Plant
    - **Ethnomedicinal uses**: Jaundice

12. Convolvulaceae: *Convolvulus arvensis* L.
    - **Common Names**: Vahri, Bind Weed
    - **Parts used**: Whole Plant
    - **Ethnomedicinal uses**: Constipation, control dandruff,

    - **Common Names**: Akash Bail, Dodder
Parts used: Stem
Ethnomedicinal uses: Paralysis, Hair treatment.

14. Cucurbitaceae: Cucumis melo var. agrestis Naudin
   Common Names: Chibbar, Wild Water Melon
   Parts used: Fruit and seed
   Ethnomedicinal uses: Dried powdered plant used to treat skin infections, stomach problems.

15. Euphorbiaceae: Ricinus communis L.
   Common Names: Hernoli, Castor oil
   Parts used: Seed
   Ethnomedicinal uses: Constipation, Stomach and bowels problems.

   Common Names: Phulai
   Parts used: Bark and Stem
   Ethnomedicinal uses: Gastric pains, protection of teeth,

17. Mimosaceae: Acacia nilotica (L.) Delile.
   Common Names: Kekar, Gum Arabic
   Parts used: Pod
   Ethnomedicinal uses: Gonorrhea,

18. Mimosaceae: Cassia fistula L.
   Common Names Amaltas, Golden Shower
   Parts used: Seed
   Ethnomedicinal uses: Gastric problems,

19. Mimosaceae: Dalbergia sissoo Roxb.ex DC.
   Common Names: Tali, Rosewood
   Parts used: Bark
   Ethnomedicinal uses: Nosebleed,

20. Malvaceae: Abutilon indicum (L.) Sweet.
   Common Names: Peeli Booti, Indian Mallow
   Parts used: Leaf and seed
   Ethnomedicinal uses: Piles, laxative.

   Common Names: Chembarathi, Shoe Flower
   Parts used: Flower
   Ethnomedicinal uses: Burning sensation and inflammation.
22. Malvaceae: *Malva parviflora* L.
   - **Common Names**: Sonchal, Mallow
   - **Parts used**: Leaf and seed
   - **Ethnomedicinal uses**: Common Cold, cough and constipation.

23. Malvaceae: *Melia azedarach* L.
   - **Common Names**: Dherak, Chinaberry
   - **Parts used**: Leaf and fruit
   - **Ethnomedicinal uses**: Skin infection, skin diseases.

24. Menispermaceae: *Tinospora cordifolia* (Willd.) Miers
   - **Common Name**: Glow, Heart Leaved Moon Seed
   - **Parts used**: Seed
   - **Ethnomedicinal uses**: Tuberculosis.

25. Moraceae: *Ficus benghalensis* L.
   - **Common Names**: Boher, Banyan
   - **Parts used**: Latex
   - **Ethnomedicinal uses**: Gonorrhea.

26. Moraceae: *Ficus religiosa* L.
   - **Common Names**: Pipal, Sacred Fig
   - **Parts used**: Bark
   - **Ethnomedicinal uses**: Gonorrhea.

27. Moraceae: *Morus nigra* L.
   - **Common Names**: Kala Toot, Mulberry
   - **Parts used**: Root, leaf and fruit
   - **Ethnomedicinal uses**: Bad thorax, stomach worms.

   - **Common Names**: Sofeda, Eucalyptus
   - **Parts used**: Leaf
   - **Ethnomedicinal uses**: Common cold, nose infections, common cold.

29. Myrtaceae: *Psidium guajava* L.
   - **Common Names**: Amrood, Guava
   - **Parts used**: Fruit
   - **Ethnomedicinal uses**: Improvement of appetite, and stomach problems.

30. Myrtaceae: *Syzygium cumini* (L.) Skeels
   - **Common Names**: Jaman, Jambolan
31. Amaranthaceae: *Amaranthus graecizans subsp. silvestris*
   **Common Name:** Phulari
   **Parts used:** Leaves
   **Ethnomedicinal uses:** Inflammations, Piles, Gonorrhea

   **Common Name:** Itsit
   **Parts used:** Root
   **Ethnomedicinal uses:** Jaundice.

33. Poaceae: *Arundo donax* L.
   **Common Name:** Nerra
   **Parts used:** Leaf and stem
   **Ethnomedicinal uses:** Fever, to treat dysfunctional organs of cattle.

34. Poaceae: *Cynodon dactylon* (L.) Pers.
   **Common Names:** Khabal, Bahm Grass
   **Parts used:** Whole Plant
   **Ethnomedicinal uses:** Treatment of wounds.

35. Poaceae: *Desmostachya bipinnata* (L.) Stapf.
   **Common Names:** Dab, Tail Grass
   **Parts used:** Leaf
   **Ethnomedicinal uses:** Decoction made from leaves is used to treat fever.

36. Poaceae: *Saccharum spontaneum* L.
   **Common Name:** Sarrout
   **Parts used:** Whole plant
   **Ethnomedicinal uses:** Improvement of appetite and in the treatment of abdominal pain.

37. Brassicaceae: *Cleome viscosa*
   **Common Name:**
   **Parts used:** Leaves, seeds root
   **Ethnomedicinal uses:** Wounds, earaches and ulcers. The seeds are anthelmintic, carminative, stimulant and vesicant.

38. Portulacaceae: *Portulaca oleracea* L.
   **Common Names:** Kulfa, Purslane
   **Parts used:** Whole plant
   **Ethnomedicinal uses:** Jaundice, typhoid, iron deficiency and skin allergy.
39. Punicaceae: *Punica granatum* L.
   - **Common Names**: Anar, Pomegranate
   - **Parts used**: Exocarp of fruit
   - **Ethnomedicinal uses**: Dysentery and menstrual irregularities.

40. Rhamnaceae: *Ziziphus jujuba* Mill.
   - **Common Names**: Baer, Jujube
   - **Parts used**: Leaf and fruit
   - **Ethnomedicinal uses**: Skin infections where pus is present and iron deficiency.

41. Rosaceae: *Rosa indica* L.
   - **Common Names**: Gulab, Rose
   - **Parts used**: Flower and seed
   - **Ethnomedicinal uses**: Eye disorders and heart disease.

42. Rutaceae: *Citrus limon* (L.) Burm. f.
   - **Common Names**: Nimboo, Lemon
   - **Parts used**: Fruit
   - **Ethnomedicinal uses**: Toothpowder for teeth diseases and in infections.

43. Sapindaceae: *Dodonaea viscosa* Jacq.
   - **Common Name**: Sanatha
   - **Parts used**: Leaf
   - **Ethnomedicinal uses**: Stomach acidity and skin allergy

44. Solanaceae: *Datura inoxia* Mill.
   - **Common Names**: Datura, Thorn Apple
   - **Parts used**: Seed
   - **Ethnomedicinal uses**: Gonorrhea

45. Solanaceae: *Solanum nigrum* L.
   - **Common Names**: Kainch Mainch, Nightshade
   - **Parts used**: Leaf
   - **Ethnomedicinal uses**: Abnormal and painful secretions from ears.

46. Solanaceae: *Withania somnifera* (L.) Dunal
   - **Common Name**: Ak San, Winter Cherry
   - **Parts used**: Whole Plant
   - **Ethnomedicinal uses**: Asthma, Rheumatic disorders, insomnia, fever, constipation and eye diseases, painful swellings and ulcer.

47. Tamaricaceae: *Tamarix aphylla* (L.) H. Karst.
Common Name: Rokh, Tamarisk
Parts used: Leaf
Ethnomedicinal uses: Skin worms and internal worms of nose and ear, Toothache.

48. Zygophyllaceae: *Tribulus terrestris* L.
   Common Name: Bhakra, Puncture Vine
   Parts used: Seed
   Ethnomedicinal uses: Back pain, Gonorrhea, Urinogenital diseases.

49. Apocynaceae: *Alstonia scholaris* (L.) R.Br.
   Common Name: Chhatiwan, sat-patia (S).
   Parts used: Bark, Leaves
   Ethnomedicinal uses: Fever, headache, asthma, to increase lactation, ulcer, astringent, antipyretic, stomachic properties, diarrhoea and dysentery.

50. Liliaceae: *Asparagus racemosus* Willd
   Common Name: Satmuli
   Parts used: Roots
   Ethnomedicinal uses: Tonic, aphrodisiac, diuretic, carminative, appetizer, antispasmodic, mental disorders, dyspepsia, Diarrhea, dysentery and rheumatism.

51. Malvaceae: *Bombax ceiba* L.
   Common Name: Simbal
   Parts used: Flowers, Roots, bark and seeds
   Ethnomedicinal uses: Dysentery, Stimulant, blood purification, constipation, snake bite and gonorrhoea.

52. Cyperaceae: *Cyperus rotundus* L.
   Common Name: Deela
   Parts used: Rhizomes
   Ethnomedicinal uses: Fever, diarrhoea, dysentery and blood disorders. Tuberous, indigestion, diarrhoea, dysentery, cholera, stomachic and diuretic.

53. Rutaceae: *Murraya exotica*
   Common Name: Marva
   Parts used: Leaves & roots
   Ethnomedicinal uses: Anthelmintic, blood disorders, skin diseases, carminative, tonic, purgative, Stomachic, leprosy, diarrhoea and dysentery

54. Pinaceae: *Pinus roxburghii* Sarg.
   Common Name: Chir
Parts used: Bark, Resin
Ethnomedicinal uses: Burns and scalds, boils, cough and gastric troubles.

55. Fabaceae: *Tephrosia lupinifolia* DC
   Common Name: Fish Poison
   Parts used: Roots, Leaf, Stem bark
   Ethnomedicinal uses: Stomach ache, diarrhoea, rheumatism, asthma and urinary disorders.

56. Malvaceae: *Abutilon indicum* L.
   Common Name: Peeli buti
   Parts used: Leaves and flowers
   Ethnomedicinal uses: As a resolvant, analgesic, inflammations, diarrhea, bleeding piles and toothache.

57. Moraceae: *Ficus religiosa* L.
   Common Name: Pipal
   Parts used: Bark, Fruit, Seed
   Ethnomedicinal uses: Asthma, urinary problems, constipation and vomiting

58. Myrtaceae: *Eucalyptus globules*
   Common Name: Sufaida
   Parts used: Leaves, Seeds
   Ethnomedicinal uses: Cold, cough, throat lozenges, malaria and toothache.

59. Poaceae: *Zea mays*
   Common Name: Makai
   Parts used: Stigma of female flowers
   Ethnomedicinal uses: Urinary disorders, Bladder cleaning and kidney disorders.

60. Solanaceae: *Withania coagulens* L.
   Common Name: Chota ak
   Parts used: Fruit & Seed
   Ethnomedicinal uses: Digestive disorders, gastritis, diabetes and blood purification.

61. Lamiaceae: *Leucas aspera* (Jacq.)Ait. f.
   Common Name: Jhumka booti
   Parts used: Leaves
   Ethnomedicinal uses: Gastritis

62. Convulvulaceae: *Ipomea pentaphyllum*
   Common Name: Beli
   Parts used: Leaves and Seeds
**Ethnomedicinal uses:** Skin diseases, Constipation, Vomitting

63. Asteraceae: *Vernonia scinerecens*
   - **Common Name:** Simbla
   - **Parts used:** Leaves, Rhizomes
   - **Ethnomedicinal uses:** Gastritis, Urinary infections, Male sterility, navel-aches constipation and internal ulcers

64. Asteraceae: *Xanthium strumarium* Linn.
   - **Common Name:** Chhota Dhatura, Cocklebur
   - **Parts used:** Roots, fruit & Seeds
   - **Ethnomedicinal uses:** Stomach diseases, demulcent, smallpox and dysentery.

62. Aizoaceae: *Trianthema portulacastrum* L.
   - **Common Name:** Itsit, Hog weed
   - **Parts used:** whole plant
   - **Ethnomedicinal uses:** Joint swellings, Asthma, Jaundice, abdominal diseased, Useful for fever.

63. Poaceae: *Avena sativa* Linn.
   - **Common Name:** Jao, Oat
   - **Parts used:** Seeds
   - **Ethnomedicinal uses:** Tension and skin alergies.

64. Euphorbiaceae: *Euphorbia helioscopia* Linn.
   - **Common Name:** Chattri dodak, Lun spurge
   - **Parts used:** Whole plant
   - **Ethnomedicinal uses:** Cathoratic, Antiheleminthic, Purgative.

64. Euphorbiaceae: *Euphorbia hirta* Linn.
   - **Common Name:** Aam dodak, Doddak
   - **Parts used:** Whole plant
   - **Ethnomedicinal uses:** Expectorant, used in bronchitis, cough and asthma.

66. Oxalidaeae: *Oxalis Corniculata* Linn.
   - **Common Name:** Khuti booti, Yellow oxalis
   - **Parts used:** Leaves
   - **Ethnomedicinal uses:** Diarrhoea & dysentry.

67. Euphorbiaceae: *Euphorbia hypericifolia*
   - **Common Name:** Pui Booti.
   - **Parts used:** Whole plant
   - **Ethnomedicinal uses:** Fresh milky juice which is acrid irritant is applied externally to relieve warts.
68. Poaceae: *Desmostachya bipinnata* Stapf.
   
   **Common Name**: Ghar Chichona  
   **Parts used**: Leaves  
   **Ethnomedicinal uses**: As diuretic and in dysentry and menorrhagia.

69. Euphorbiaceae: *Euphorbia hirta* L.
   
   **Common Name**: Dodhi, Spurse  
   **Parts used**: Leaves and inflorescence  
   **Ethnomedicinal uses**: Treatment of eye complaints such as redness of eyes and to remove foreign body from eyes and hair tonic.

70. Asteraceae: *Conyza canadenisis* Linn.
   
   **Common Name**: Horse weed  
   **Parts used**: Whole plant  
   **Ethnomedicinal uses**: Inflammations, asthma and diseases.

71. Euphorbiaceae: *Euphorbia prostrata* L
   
   **Common Name**: Hazar daani  
   **Parts used**: All plant  
   **Ethnomedicinal uses**: Skin diseases, itching and for ringworms.

72. Asteraceae: *Launea procumbus*
   
   **Common Name**: Bhattar  
   **Parts used**: Whole plant  
   **Ethnomedicinal uses**: Tooth diseases, diabetes, constipation, intestinal disorders, painful urination, gonorrhea, relief in cold, cough, flu and wound infection.

73. Convulvulaceae: *Convulus arvense*
   
   **Common Name**: Leli/weli  
   **Parts used**: Leaves & seeds  
   **Ethnomedicinal uses**: Inflammations and stomach disorders.

74. Amaranthaceae: *Digera arvensis* L.
   
   **Common Name**: Tandla  
   **Parts used**: Leaves  
   **Ethnomedicinal uses**: It is used cure weak bones, Infections etc.

75. Mimosaceae: *Albizzia lebbeck*  
   
   **Common Name**: Siris  
   **Parts used**: Bark  
   **Ethnomedicinal uses**: Inflammations, boils, **cough**, eye infections, **flu**, gingivitis, **lung** problems,
pectoral problems, tonic, abdominal tumors, hernia, secondary infertility.

76. Asteraceae: *Sonchus asper*
   - **Common Name:** Asgandh, dodak
   - **Parts used:** Whole plant
   - **Ethnomedicinal uses:** Whole plant is ground and powder is applied on burns

77. Moraceae: *Ficus benjamina*
   - **Common Name:** Weeping fig
   - **Parts used:** Whole Plant
   - **Ethnomedicinal uses:** Blood purifications

78. Rubiaceae: *Gardenia jasminoides*
   - **Common Name:** Chandna
   - **Parts used:** Leaves and flower buds
   - **Ethnomedicinal uses:** Used in Stomach ache.

79. Malvaceae: *Hibiscus rosa sinensis* L.
   - **Common Names:** Gurhal, Shoe Flower
   - **Parts used:** Flower
   - **Ethnomedicinal uses:** Apply paste to reduce burning sensation

80. Apocynaceae: *Catharanthus roseus*
   - **Common Name:** Sada Bahar
   - **Parts used:** Leaves
   - **Ethnomedicinal uses:** Diabetes mellitus

81. Poaceae: *Paspalidium flavidum*
   - **Common Name:** Madhana Ghas
   - **Parts used:** Leaves
   - **Ethnomedicinal uses:** Skin diseases, eyes, teeth, heart, skin itching, headache liver diseases, dropsy, prevent abortion, miscarriage and uterine pains after delivery.

82. Araceae: *Syngonium podophyllum*
   - **Common Name:** Nephthytis
   - **Parts used:** Leaves
   - **Ethnomedicinal uses:** It is effective against cancer and cure mouth and feet diseases.

83. Papilionaceae: *Meliolotus parviflora*
   - **Common Name:** Sainji
   - **Parts used:** Whole Plant and seeds
   - **Ethnomedicinal uses:** It is useful in treatments of swellings and bowel complaints.
84. Annonaceae: Polyalthia longifolia  
**Common Name:** Ulta ashok  
**Parts used:** Leaves, Root, stem  
**Ethnomedicinal uses:** Fever, diabetes, hypertension, skin diseases & helminthiasis

85. Apocynaceae: Plumaria obtusa  
**Common Name:** Chelota  
**Parts used:** Flower  
**Ethnomedicinal uses:** Skin diseases, fever & ague.

86. Amaranthaceae: Althernanthera punjens  
**Common Name:** Haglon/waglon  
**Parts used:** Leaves, Fruits  
**Ethnomedicinal uses:** Itching.

87. Typhaceae: Typha latifolia  
**Common Name:** Typha  
**Parts used:** Leaves and Pollens  
**Ethnomedicinal uses:** Astringent, diuretic, sedative and anticoagulant. It is used in the treatment of kidney stones and painful menstruation.

88. Fabaceae: Rhyncosia minima  
**Common Name:** Jungli moath  
**Parts used:** Whole plant  
**Ethnomedicinal uses:** Used for bath after delivery for body care.

**Discussion**  
The need for a specific definition of traditional knowledge is impelled by the push from the formal sector to control, manage and market the knowledge and to bring it under a regulatory framework (Shinwari and Khan, 1999). Traditional knowledge provides useful leads for scientific research, being the key to identifying those elements in a plant with a pharmacological value that is ultimately destined for the international markets. Indeed, such traditional knowledge is very valuable. Annual global sales of products derived from the manipulation of genetic resources lie between US$500 and US$800 billion annually (Kate and Laird, 1999). Due to the lack of modern communications, as well as poverty, ignorance and unavailability of modern health facilities, most people especially rural people are still forced to practice traditional medicines for their common day ailments (Azaizeh et al. 2003). Most of these people form the poorest link in the trade of medicinal plants (Khan, 2002). A
vast knowledge of how to use the plants against different illnesses may be expected to have accumulated in areas where the use of plants is still of great importance (Diallo et al. 1999).

References

Karachi, Pakistan, pp 343-344.