Importance of Ethnomedicinal Flora of Sarai Alamgir (Boundary Side of River Jhelum) District Gujrat, Punjab, Pakistan

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Abstract

The present research work based on ethnobotanical surveys was conducted during the March 2015 to November 2015 in the designated areas of Sarai Alamgir, Gujrat, Pakistan. This study has investigated the traditional knowledge of local societies about the uses of native, medicinally important plants as ethnomedicines. Questionnaire method was used for the indigenous knowledge about native medicinal flora. The local community, knowledgeable persons and (Hakeem’s) who are the main users of medicinally valuable plants were collaborated in interviews about native plants. Plant specimens were collected, identified, preserved, mounted and voucher was deposited in the Department of Botany, University of Arid Agriculture Rawalpindi, for future references.

Keywords: Ethnobotanical; Indigenous; Traditional; Preserved; Questionnaire; Documentation

Introduction

Several medicinally important plants have been used historically as one of the vital source of food for communities [1]. Still the human beings considerably dependent of plants which are significantly used as drugs sources [2]. Various studies on medicinal plants have been conceded throughout the world that revealed the traditional knowledge of local communities about the medicinal practices accompanied with the help of plants [3-12]. Commercially, most of the allopathic drugs are also obtained from medicinal plants [13]. Mostly, the roots and barks of medicinal plants are abundantly used as curing agents; it is greater threats to the sustainability of medicinally important plants [14]. Inhabitants of diverse geographical zones use different plant parts as drug source for the treatment of various ailments that varies the traditional use of plants [15]. Only a single herb can be used for the curing of various types of diseases either in animals as well as human beings [16].

Sarai Alamgir is one among the three tehsils of district Gujrat, Punjab, Pakistan. The name of Sarai Alamgir is on the name of Mughal emperor Aurangzeb Alamgir who make sarai (resting place) there during his journey. It is situated on the eastern bank of River Jhelum and covers about 575 Km2. It is located at 32°54'00''N 73°45'00''E in the Gujrat district in the north of the Punjab province of Pakistan. It lies at 232 m (761 ft) above sea level. The district has a moderate climate. During the summer, temperatures can reach 45°C (113°F) for short periods. Winter months are mild, temperatures rarely falling below 2°C (36 °F). Sarai Alamgir is located south of Jhelum City, which lies across the river Jhelum. To the west of Sarai are the cities Mirpure and Bhimber. Mandi Bahauddin and Rasul are located to the east of Sarai Alamgir.

Pakistan is one of the most important countries that has enriched medicinal use which are being used as traditional medicines by Its 80% Population for health care [13,17,18]. About 6000 flowering plants species have been recorded in Pakistan including Kashmir [19]. A generous variety of economical and medicinal plants are abundantly found in Pakistan due to its variability in soil type and climate [20]. Analysis of each medicinal plant species in each territory has its own qualitative expression that showed its value among communities. Medicinal plants play a crucial role for herbal drugs preparation and cure several diseases due to their limited side effects and easily availability in nature [21,22]. In recent time the ethnobotanical studies have become more attractive for the development and enhancement of health care system in different areas of the world [23].

Most of the people especially rural societies forcefully dependent of traditional medicinal plants for the treatment of their common illness due to lack of modern communication, ignorance and poverty [24]. Medicinal plants have proved themselves as insecticidal to protect the crops, wood for material culture, houses, boats, utensils, crude drugs, fuel, agricultural tools and different ornaments [25]. Some phytochemicals are obtained from traditionally useful plants that crucially protect plants and animals from pathogenic fungi and bacteria [26]. All life forms directly or indirectly depend upon plants because these are primary producers and require sustainable development and conservation through the local people by whom plants were used medicinally [27].

Paste of medicinal plants made easily by pestle and mortar is the major drug form in ethnoveterinary practices [28]. Large tribe communities of the world typically rely on leaves for the preparation of herbal medicines [29-32]. Because these are easily collected than underground parts of plants, leaves are the major source of metabolites that’s actively involved in photosynthesis [33]. Medicinal plants are the assets of human beings and require more attention for their conservation because some of them are at of extinction risk [34].

Materials and Methods

Surveyed area and collection of medicinal data

The study about the medicinal plants was confined to worthwhile flora of Sarai Alamgir (Gujrat), Punjab, Pakistan (Figure 1). Regular
field trips were organized during March 2015 – November 2015 in different villages of the area for the collection of data. The focused people were local inhabitants, former and also herbal doctors (Hakims). Questionnaires were directed to identify the traditional knowledge of local people about medicinally important plants having the local names, parts used and ethnobotanical uses. About 57 informants including men and women [21] have been questioned randomly.

**Preservation of plant specimens**

Live specimens were collected during the surveys and a general collection of plant specimens were made. Plant specimens were preserved and mounted on the herbarium sheets. This data was equated with the "Flora of Pakistan" and identified. After identification plants were placed in Department of Botany, PMAS Arid Agriculture University Rawalpindi, for future references.

**Results**

In the present study 49 plants species including 18 herbs, 14 shrubs and 17 trees samples have been collected and identified which were used by local inhabitants as ethnomedicines in that areas. Various plant species have been listed in tabulated form along with their botanical names, local names, habit, family, part use and ethnomedicinal uses. Most plant species not only used as medicinally but economically also have great importance for making different tools like baskets, plough, buildings etc. and they need a stronger sustainability to allocate their benefits for mankind. This research will expose the precious nature of medicinal plants species and there is a stronger need for their conservation, keeping in mind the future aspects. This knowledge will help the communities for making links by the traditional knowledge of medicinally important plants [35] (Table 1).

**Discussion**

This is novelty in case of *Pongamia glabra* that it is practised in Snake bite, insect bites, poison bites, ephemeral fever and wound healing [36,37]. Interestingly *Melia azedarach* have insecticidal properties with repellency, antifeedancy, oviposition, growth inhibition and larvicidal activities but does not have any toxic or allergic effects to humans [38]. Traditionally Plants with insecticidal properties have been divided into two groups first, the plants with general anti-insect effects and second the plants with specific anti-insect effects such as mosquitoes, flies, moth, fleas, scorpions and ants [39].

The recent study will provide the information about the therapeutic uses of 49 plant species either these are used single or in combination with other plants parts. Most plants are of great importance for their unique and effective medicinal uses such as snake biting, ulcer, epilepsy, cancer and liver functions etc.

There was not a good conservation status of these medicinal plants because most of these plants are grazed by local animals or uprooted by...
| S. No. | Botanical Name          | Local Names        | Family       | Part Used                  | Ethnomedicinal Uses                                                                 |
|-------|-------------------------|--------------------|--------------|----------------------------|-------------------------------------------------------------------------------------|
| 1     | Abutilon indicum (L)    | Peeli bootli       | Herb         | Leaves and stem            | For boil treatment                                                                   |
| 2     | Achyranthes aspera (L)  | Puth kanda         | Herb         | Whole Plant                | Pneumonia, Diuretic, Dropsy, Piles, Skin eruptions                                  |
| 3     | Aloe vera (L)           | Kawar gandjal      | Liliaceae    | Fleshy leaves              | In skin diseases, Digestive disorders and gum bleeding                              |
| 4     | Althea rosea (L)        | Gul.e.khaira       | Herb         | Whole plant                | Asthma, jaundice, cough and irritated stomach                                        |
| 5     | Anagallis arvensis (L)  | Billi bulli        | Herb         | Whole plant                | Diuretic, vulnerary, diaphoretic, dropsy, skin infection, disorders of the liver and gall bladder |
| 6     | Argemone mexicana (L)   | Satyanashi         | Papaveraceae | Roots, seeds, and juice    | Skin-diseases, bilious fevers anthemicin, Diuretic, leprosy ophthalmia, purgative and kill tape-worm |
| 7     | Carthamus oxyanthus (M.)| Pohl                | Asteraceae   | Seeds, flowers and oil     | Iaxative, itching, Ulcers, tonic, measles strengthening                                |
| 8     | Convolvulus arvensis (L)| Lily               | Convolvulaceae| Leaves, flowers and root   | Reduce plentiful menstruation heal wounds, Spider bites, laxatives and fever          |
| 9     | Cucumis melo var. agrestis| Chiber            | Cucurbitaceae| Fruit                      | Stomach and digestion disorders                                                     |
| 10    | Euphorbia helioscopia (L)    | Chatri dhodak   | Euphorbiaceae| Leaves, stem, roots, seeds, oil | Anticancer properties, anthemicin, vermiligne and cholera                           |
| 11    | Euphorbia hirta (L)     | Dudi kalan        | Euphorbiaceae| Leaves and its extract     | Diarrhea, burn and wounds healing, Kill intestinal worms and for ulcer               |
| 12    | Euphorbia prostrate (L) | Dudi khurd        | Euphorbiaceae| Whole plant                | Vagina sterility, blood purification, Painful menstruation, inflammations, asthma and scorpion sting |
| 13    | Malva sylvæstis (L)     | Pick-cheese        | Malvaceae    | Leaves                     | Ulcers, bladder, infection diuretic, indigestion                                      |
| 14    | Mentha longifolia (L)   | Jangli podina      | Lamiaceae    | Leaves and stem            | Headache, fever, cough, urinary tract infections, Bronchial congestion, swelling, Menstrual disorders pulmonary infection, wound healing, indigestion |
| 15    | Ocimum basilicum (L)    | Niazo              | Lamiaceae    | Leaves, flowers, seeds, root| Snake bites, intestinal worms, diarrhæa, migraine, skin infections, indigestion, stomach cramps, depression, feverish illnesses, nausea and eyewash |
| 16    | Oxalis comulata (L)     | Khati booti        | Oxalidaceae  | Flowers and leaves         | Insect bites and burns, snakebite, diuretic, diarrhæa, Urinary tract infections, skin rashes, Anthemicin, harrowing injuries, fever, influenza |
| 17    | Solanum nigrum (M.)     | Makoo              | Solanaceae   | Whole plant                | For enlargement of spleen, Dropsy and Phthisis                                        |
| 18    | Taraxacum officinale (L)| Dandelion          | Asteraceae   | Roots and leaves           | Headaches, skin problems, constipation, eye problems, Liver toxic, gout and fatigue   |
| 19    | Calotropis procera (L)  | Ak                 | Asclepiadaceae| Leaves, Flowers, root and latex | Deafness, piles, baldness, wound healing, toothache, Pain reducing and skin diseases |
| 20    | Cannabis sativa (L)     | Bhang              | Cannabaceae  | Whole Plant                | Intoxication, loss of appetite and reduce general body inflammation                  |
| 21    | Cymbopogon Citrus (L)   | Lemon ghaas        | Poaceae      | Oil of whole plant         | Respiratory infections, tonic for nervous system, fever, indigestion, Headaches, insect repellent and infectious diseases |
| 22    | Datura alba (L)         | Dhatura            | Solanaceae   | Seeds and leaves           | Muscular rheumatism, emetic intoxication Asthma, digestion, haemorrhoids pain, spasms of the bladder and inflammation |
| 23    | Dodonaea viscosa (L)    | Aliar              | Sapindaceae  | Leaves bark and roots      | Toothache, sore throats, astringent, stings, skin rashes, Diuretic, odontalgic and febrifuge |
| 24    | Ipomea carnea           | Chota aik          | Convolvulaceae| Whole plant                | Anti-inflammatory, anti-cenogenic and ototoxic                                         |
| 25    | Justicia adhatod Linn.  | Baikar             | Acanthaceae  | Leaves                     | Cough, asthma and treating bronchitis                                                |
| 26    | Mimoso pudica (L)       | Lajwanti           | Mimosoideae  | Leaves, Leaves and Flowers | Swelling, wounds and antibacterial                                                   |
| 27    | Ricinus communis (L)    | Harnoli            | Euphorbiaceae| Leaves and Seeds           | Laxative, Boils, and to start Labour pain                                           |
| 28    | Sesbania bispinosa (J.) | Danchi             | Fabaceae     | Whole plant                | Headache, epilepsy and as food                                                      |
| 29    | Sonchus asper (L)       | Sgandi             | Asteraceae   | Aerial parts               | Cancer, liver function, regulate menstrual cycle, wounds, inflammation and fever     |
| 30    | Vernoninia cinerasens   | Simbha             | Asteraceae   | Whole plant                | Toothach, antimicrobial and Gingivitis                                             |
| 31    | Withania somnifera (L)  | Asgard             | Solanaceae   | Whole plant                | Analgestic, Diuretic and Leucoderma                                               |
| 32    | Zizyphus numuratlia (L) | Jangli beri        | Rhamnaceae   | Leaves, Fruit and roots    | Jaundice                                                                           |
| 33    | Acacia nilotica (L)     | Desi Kikar         | Fabaceae     | Leaves, Bark and fruit     | Coughs, cold, Ulcers, fever, dysentery, leprosy, smallpox, leucorhea, sclerosis, gallbladder, hemorrhages, tuberculosis and ophthalmia |
| 34    | Albizia lebbeck (L)     | Shrin              | Fabaceae     | Stem bark                  | string (insects) bites treatment, injury treatment, blood purification, Pain relieving and respiratory disorders |
| 35    | Azadirachta indica (L)  | Dhrek              | Meliaceae    | Leaves, Bark and flowers   | Insecticidal, malaria fever, Ulcers, rheumatism, diuretic, scabies, scorfula, tonic and anthemicin |
inhabitants for fuel purpose. Due to lack of awareness or narrow links among the local communities, they pay not much attention to protect these medicinal plants [40].

Conclusion

It is conclude that all these are highly medicinal plants of great importance and there is much need to expose their beneficial effects and uses among the communities. A single plant not only be used for the treatment of single disease it may be used to cure various diseases.

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