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Research Paper

Relative importance of indigenous medicinal plants from Layyah district, Punjab Province, Pakistan

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ABSTRACT

Ethnopharmacological relevance: Ethnomedicinal reports are important for the discovery of new crude drugs from reported medicinal plants with high use value. The current study aimed to document the medicinal flora as well as medicinal knowledge of indigenous plants of local communities from Layyah district, Punjab Province, Pakistan.

Material and methods: Rapid appraisal approach (RAA), semi-structured interviews, group meetings with herbalists, landowners and local people having awareness about the medicinal action of plants were employed to collect the data. Use values (UV) and frequency of citation (FC) were calculated to check the relative importance of plants.

Results and discussions: The current ethnomedicinal study reported 125 medicinal plant species diversified from 106 genus belonging to the 43 different families and Poaceae was the predominant family over others with 16 reported medicinal plants. Wild herbaceous plants were the predominant over other life forms while among plant parts, leaves contributed 32% followed by the stem (27%), fruit and flowers (15%). *Allium sativum* exhibited the highest use value (UV) 0.92 while the lowest UV was exhibited by *Lasiurus scindicus* which was 0.15.

Conclusion: Local communities of district Layyah still have a strong faith on herbal medicines for basic healthcare needs. Indigenous plants having high UV and FC should be subjected to the detailed phytochemical investigations to explore new natural drugs.

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1. Introduction

Medicinal plants, since times immemorial, have been used practically in all cultures as a source of medicine (Malik et al., 2005). Pakistan is rich in diversity of medicinal and aromatic plants due to its unique phytogeography with diverse climatic conditions. About 400–600 medicinal plant species out of 5700 are estimated to be found in Pakistan. In the early 1950s, about 84% of population was dependent on traditional medicines for their basic healthcare needs (Hocking, 1958; Mahmood et al., 2011a) but now this practice is limited only in the remote areas due to the urbanization and modernization (Ibrar et al., 2007).

Ethnomedicinal studies are significant for the discovery of new drugs from indigenous medicinal plants. Right from the commencement of ethnobotany, with special emphasis on the documentation of traditional medicinal knowledge of plants, has discovered a number of modern drugs (Cox, 2000; Gilani and Atta-ur-Rahman, 2005). At present, about 25% drugs included in the modern pharmacopeia are plant derived and many others are synthetic analogs built on proto-type compounds isolated from plants (WHO, 2002; Mahmood et al., 2013a, 2013b). Revival of awareness in traditional health practice all over the world has diverted the attention of scientists towards the ethnomedicines and the use of herbal remedies in current scenario.

In Pakistan, attention has been paid to the field of ethnobotany (Gilani and Atta-ur-Rahman, 2005; Qureshi et al., 2006, 2009; Ahmad and Husain, 2008; Husain et al., 2008; Mahmood et al., 2011a, 2011b, 2011c, 2011d, 2012, 2013a, 2013b) and few reports

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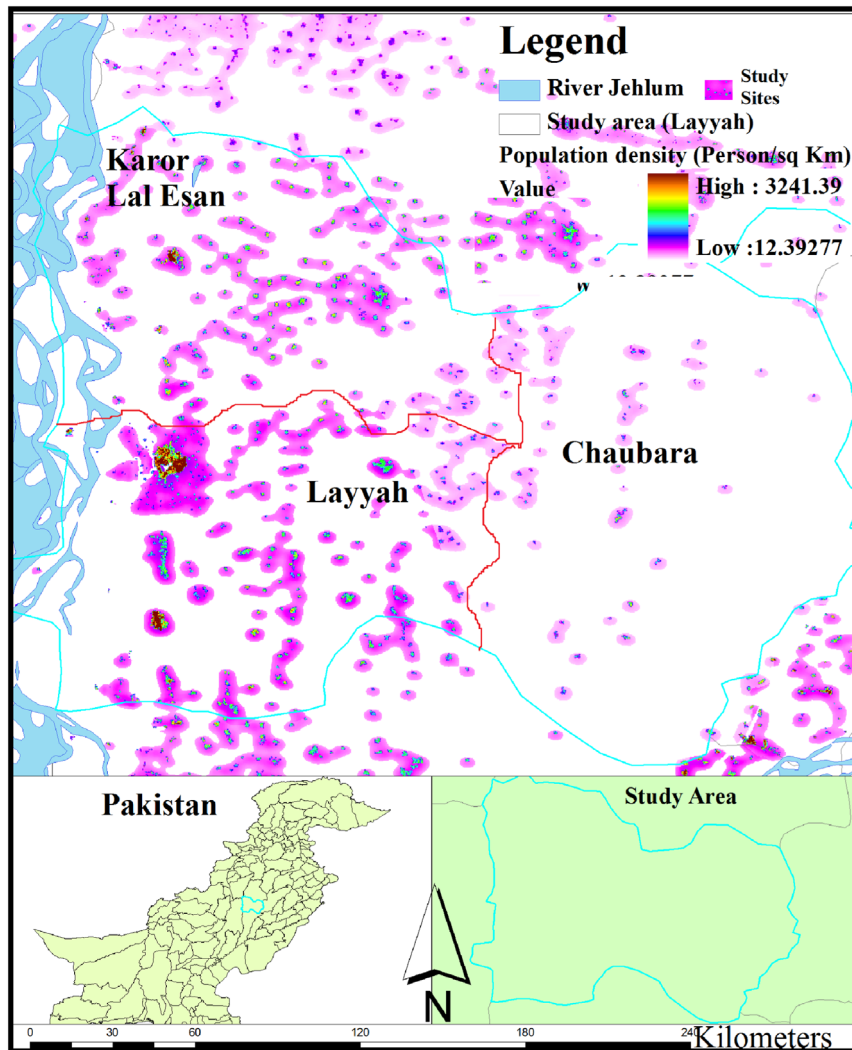


Fig. 1. Map of the study area showing the population density and study sites from Pakistan.

have been published in the recent past (Mahmood et al., 2011c, 2011d, 2013a, 2013b; Ullah et al., 2013; Saqib et al., 2014). However, still sound efforts are needed to save this treasure that is being diminished with the passage of time (Mahmood et al., 2011a; Saqib et al., 2014). In this scenario, the present research was conducted to document the medicinal flora as well as medicinal knowledge of indigenous plants of local communities from Layyah district, Punjab Province, Pakistan. The key objective of this report was to document the medicinal flora, indigenous medicinal remedies and to investigate the trend of medicinal plants usage in the local healthcare system of the study area.

2. Materials and methods

2.1. Study area

Layyah is a district of Punjab Province (South region), Pakistan which is divided into three administrative parts [locally called [as] Tehsils], namely Tehsil Layyah, Tehsil Karor Lal Ehsan and Tehsil Choubara. The total population of district Layyah is 11,00,000 persons having 13% urban population load and 87% rural population load with the population density of 178 persons/km². Layyah is situated between 30°57'40" N and 70°56'20" E and is surrounded by districts Bhakar, Jhang, Dera Ghazi Khan and

Mozaffargarh of Punjab Province. The total covered area is 6,291 km² having an altitude of 1525 meter above the sea level and 35% of the total area is cultivated land while 65% is non-cultivated land. Layyah district lies in the sub-tropical continental plain zone of the climate of Pakistan with the sandy soil. Climate is extremely hot in summer while in winter temperature goes to 0 °C (Fig. 1).

2.2. Selection of informants

Ethnobotanical study was conducted in Layyah district to document the indigenous medicinal wealth. During survey we visited to District Administration that has authority to register the local herbalists to get the information about the local herbalists as key informants. After detailed discussion with the local herbalists, Layyah City and two adjoining Tehsils Karor Lal Ehsan and Choubara were selected for detailed ethnomedical survey. The rural communities usually dependent upon the traditional use of indigenous plants for ailment treatments due to low income and far health facilities so, they were targeted/focused on priority basis.

2.3. Data collection

Ethnobotanical study of the Layyah district, Punjab Province, Pakistan was conducted during June 2012 to May 2013. Rapid

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