Journal of Ethnopharmacology 171 (2015) 273–279

Contents lists available at ScienceDirect

Journal of Ethnopharmacology

journal homepage: www.elsevier.com/locate/jep

Ethno veterinary uses of medicinal plants of district Karak, Pakistan

Noor Saeed Khattak [a], Faisal Nouroz [a,c,*], Inayat Ur Rahman [a], Shumaila Noreen [b]

[a] Department of Botany, Hazara University Mansehra, Pakistan
[b] Department of Zoology, University of Peshawar, Pakistan
[c] Department of Bioinformatics, Hazara University Mansehra, Pakistan

ARTICLE INFO

Article history:
Received 20 February 2015
Received in revised form
26 May 2015
Accepted 29 May 2015
Available online 6 June 2015

Keywords:
Medicinal plants
Ethno veterinary
Livestock
Domestic birds
Karak

ABSTRACT

Ethnopharmacological relevance: In the study area, the traditional knowledge regarding the uses of local wild medicinal plants for treating diseases of domestic animals and birds is totally in the custody of elders of the existing community. The young ones are not much aware about such important practices.
Aim of the study: The main aim of the study was to document and to release this knowledge from the custody of elders and share with the community.
Materials and methods: Total 115 people between 20 and 80 years of age were interviewed and information was collected through semi-structured questionnaires. The data obtained were quantitatively analyzed using the use value (UV) formula. The collected specimens were pressed, dried, preserved, mounted on Herbarium sheets, identified properly and were submitted in the Herbarium, Department of Botany, Hazara University, Mansehra, Pakistan.
Results: With the co-ordination and cooperation of the local people, 46 plant species of 42 genera belonging to 31 families were collected, 3 were monocotyledons while 43 plant species belonged to dicotyledonae class. Considering taxonomic characteristics, it was confirmed that 12 trees, 10 shrubs and 22 herbs were commonly used by the local people in ethno veterinary practices. Two plants like *Cistanche tubulosa* and *Cuscuta reflexa* from family Orobanchaceae and family Cuscutaceae respectively lack chlorophyll and are parasites on host plants like *Doedonia*, *Ziziphus*, *Calligonum* and *Calotropis*. The powder of both plants showed great ethno veterinary value. The parts of 46 plant species commonly used for ethno veterinary practices were whole plants (32.60%), leaves (26.08%), fruits (17.39%), stems (13.04%) and roots (10.86%). Medicinal plants were administered through various routes i.e. oral (78.26%), skin (17.21%) and smoke (4.34%).
Conclusion: The traditional knowledge of local plants of ethno veterinary values is mainly possessed by elders and transmitted from generation to generation with chances of elimination of such traditional knowledge due to less awareness. The present study was designed to document this ethno veterinary related knowledge and to share it with community members for use in future.

1. Introduction

1.1. Ethno veterinary medicinal plants

The local plants used for the treatment of conventional diseases of livestock and domestic birds are generally called ethno veterinary medicinal plants. The branch of biological science dealing with medicinal plants and their uses in traditional practices is termed as ethno veterinary botany, while ethno veterinary medicine (EVM) is the sub field of ethno veterinary botany. EVM deals with all the traditional techniques applied by humans not only to control the common diseases of livestock but also to improve the breeding practices in them (McCorkle, 1986). Another appropriate definition was laid down by McCorkle (1995). According to him; EVM is the conventional knowledge and its allied skills used for the health care of animals and to increase their products for the human welfare. The knowledge about EVM is commencing from generation to generation in a descendent order like unbroken series of chain up to the first ancestor. The modern civilization favors the modern technologies and modern discoveries of treatment, so old tradition is reducing day by day. Due to these reasons, most of the organizations and researchers are trying to conserve this fragile knowledge in written form (McCorkle et al., 1997). Due to easy availability and low cost of EVM plants, the livestock owners of the remote areas use them as a first aid for their animals (Jabbar et al., 2006).

It is generally observed that most of the cattle have displayed several stomach complaints, which are solved by majority of the livestock keepers by using the dose prepared from local plants such

* Corresponding author.
E-mail address: faisalnouroz.hu@gmail.com (F. Nouroz).

http://dx.doi.org/10.1016/j.jep.2015.05.048
0378-8741/

as the diluted juice extracted from the leaves of *Calotropis procera* bring relief in stomach flatulence of cattle (Abbasi et al., 2013).

The indigenous plants, the domestic animals and the human community have interdependency. Their presence for each other is the guarantee for their survival. It is admissible fact that the livestock provide a wide range of dairy products, so their protection from diseases is the major responsibility of the human being. The people of remote and rural areas of Pakistan have no access or affordability for English drugs due to their high costs. As a result, they carry on the treatment of their domestic animals and birds with the local herbal remedies. Presently the knowledge about usage of ethno veterinary medicinal plants is in the guardianship of elders of the villages. Their documentation is necessary to transfer this traditional ethno veterinary knowledge to other community members. The main aim of the present study was to preserve the knowledge of elders by sharing with community members of District Karak in written form.

2. Materials and methods

2.1. Study area

Karak is the highly educated District of Khyber Pakhtunkhwa Province in Pakistan. It is located at 33°7'12 N and 71°5'41E. The head quarter of Karak is located on Indus Highway just 123 km away from the capital of KP at the south of Peshawar. The District Bannu is located on south-west, Lakki District on south and Kohat District on north (Fig. 1). Total area of District Karak is 3372 km^2, while the total population according to the 2011 census is 734,765 (Wikipedia.org/wiki/karak). Total area of the District is 3372 km^2 and average annual temperature and rain fall are 30 °C and 330 mm respectively (Table 1). The low rain fall due to the geographical position and the restricted varieties of habitats caused poor vegetation in the reported area. It is semi-arid, which support mainly xerophytes and mesophytes. *Acacia*, *Dalbergia*, *Ziziphus*, *Rhazyia stricta*, *Calotropis* and *Deodonia* represent the dominant flora of the research area, while fauna includes buffaloes, cows, dogs, cats, goats, camels, sheeps, horses, donkeys and poultry.

2.2. Data collection and questionnaires formulation

Total 50 visits to hilly and 50 visits to plain areas were made for the collection of plants and information with ethno veterinary values was initiated from February to October, 2014. The main target sites were the rural and remote villages of the District Karak. All these plants were collected after their recognition from old villagers. Different people of different age were interviewed through questionnaires but the authentic informations of experienced elders (male and females) were recorded, which were later on confirmed by the authentic literature or studies (publications) conducted in other areas

Table 1
Age and gender distribution of ethnic informants.

Informant	Age	No. of informants	Percentage (%)
Young	18–25	20	17
Women	60–70	35	31
Men	70–80	60	52

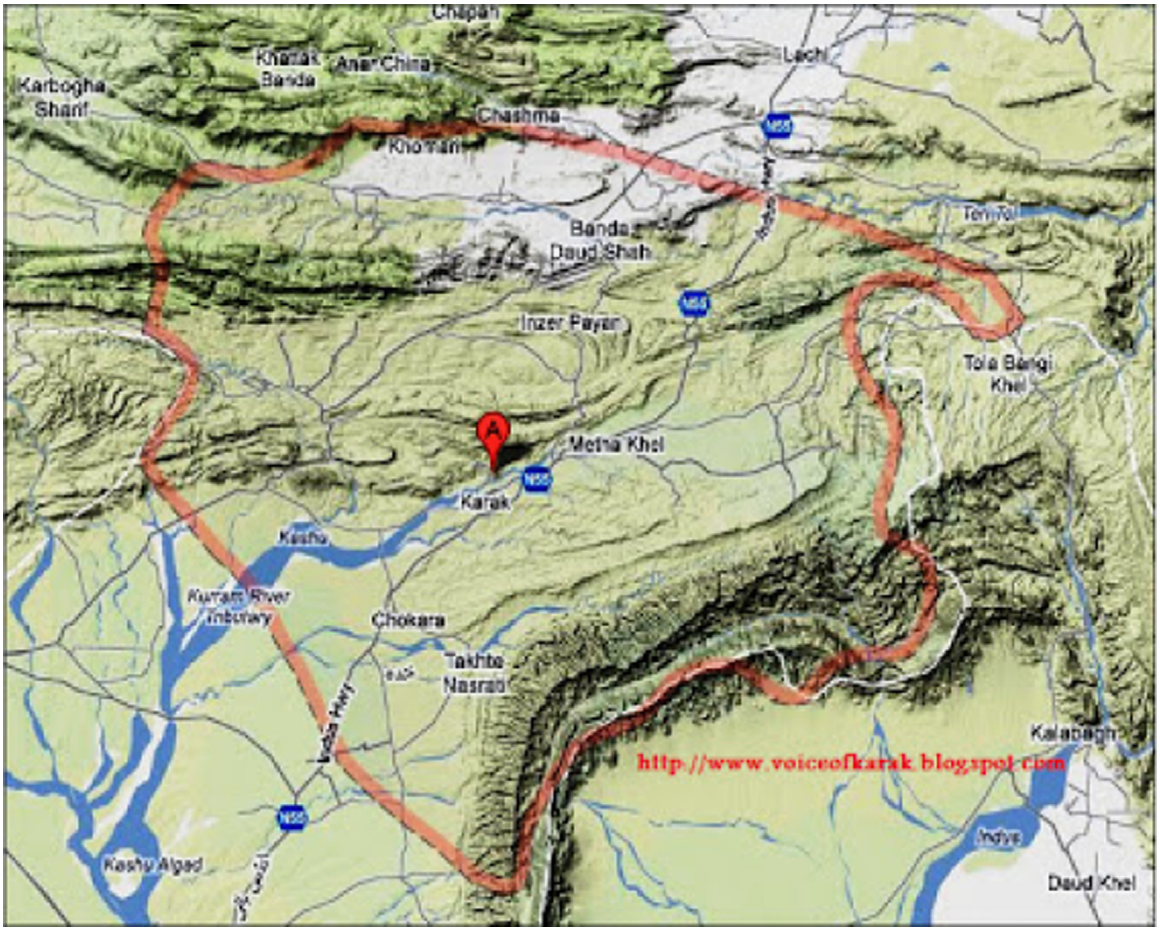

Fig. 1. Map of the study area District Karak, Khyber Pakhtunkhwa, Pakistan.