

FOLKLORE USES OF AMARANTHACEAE FAMILY FROM NARA DESERT, PAKISTAN

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Abstract

The present paper is a result of floristic and ethnobotanical project on the Nara Desert, Sindh which was carried out during 1998-2001. Six plant species distributed across four genera of Amaranthaceae family are extensively used ethnobotanically by the people of Nara Desert. They utilize various parts of these plants to accomplish their primary needs, like food, medicine, forage and fuel. Cross-checking of data with literature revealed that these species possessed some new uses not reported earlier in Indo-Pak medicinal literature. Besides, this enumeration also highlights the ethnoveterinary and other folklore uses for the first time from this remote area.

Introduction

Nara desert, an extension of Great Indian Desert, is located in Sindh which is the southeastern Province of Pakistan. It lies between 26° to 28° north and 68° to 70° east (Bhatti *et al.*, 2001; Qureshi, 2004). This desert is comprised of about 23000 km² (Anon., 1992). It covers Taleka Aubaro, Deharki, Mirpur Mathelo & Khan Pur Mahar of Ghotki District, Rohri and Saleh Pat talekas of Sukkur District, Nara, Kotdeji, Faiz Ganj Talekas of Khairpur district, Taleka Sanghar and Khipro of district Sanghar. Rajasthan, India (Jodhpur & Jaisalmer) marks eastern side boundaries of all these talekas. The topography is distinctly marked with sandy hills, steep slopes and vast low laying areas locally known as *Patt*. The accumulation of sand in huge mass in the form of a hill is known as sand dune/ridge. Dune has *Crest*; the topmost portion, *Swale (Flank)*; the middle portion and *Foot*; the base of the dune. The area between two successive dunes is called interdunal valley.

This area is classified as an arid tract, characterized by extreme temperatures; severe droughts accompanied by high wind and very scanty rainfall. Temperature ranged between 40-52°C in summer and freezing in winter. The average annual rainfall varies from 100 to 250 mm, mostly received during July and September (Qureshi & Bhatti, 2005).

Previously Bhatti *et al.*, (2001) and Qureshi (2004) had carried out an extensive floristic survey from the study area. A few papers are also reported from this area (Bhatti *et al.*, 1998, 2001, 2002; Qureshi *et al.*, 2001, Qureshi & Bhatti, 2006; 2008a; 2008b; 2008c). Since the area has rich heritage of indigenous knowledge, therefore an ethnobotanical survey of the Nara Desert has been investigated (Qureshi, 2004). The present paper is the part of that project and deals with the comparison of previously medicinal uses and present uses of the family members of Amaranthaceae from the study area.

Materials and Methods

The study area was thoroughly surveyed for the collection of plant specimens during 1998-2001. Six species of Amaranthaceae family were recorded from the Nara Desert. The collected specimens were identified with the help of Flora of Pakistan (Townsend, 1974) and are deposited in the Herbarium of Shah Abdul Latif University, Khairpur as voucher specimens. Local inhabitants of different age groups in between 40-70 years were interviewed to get vernacular names of these plants along with their uses. In addition, local *Hakeems* (Herbalists) from the study area were also interviewed to record medicinal uses. Past record of uses (literature) was consulted to cross-check of their uses. Use value frequency and ranking was calculated by following the work of Martin (1995).

Results

The people of the area fulfilled six needs from the reported species i.e. fodder, human ailments, veterinary uses, potheb, fuel and stuffing pillows (Table 1). Fig. 1 reveals that *Aerva javanica* possessed highest use values followed by *Achyranthus aspera* and *Amaranthus* spp. All the species are alphabetically arranged and described in detail as follows:

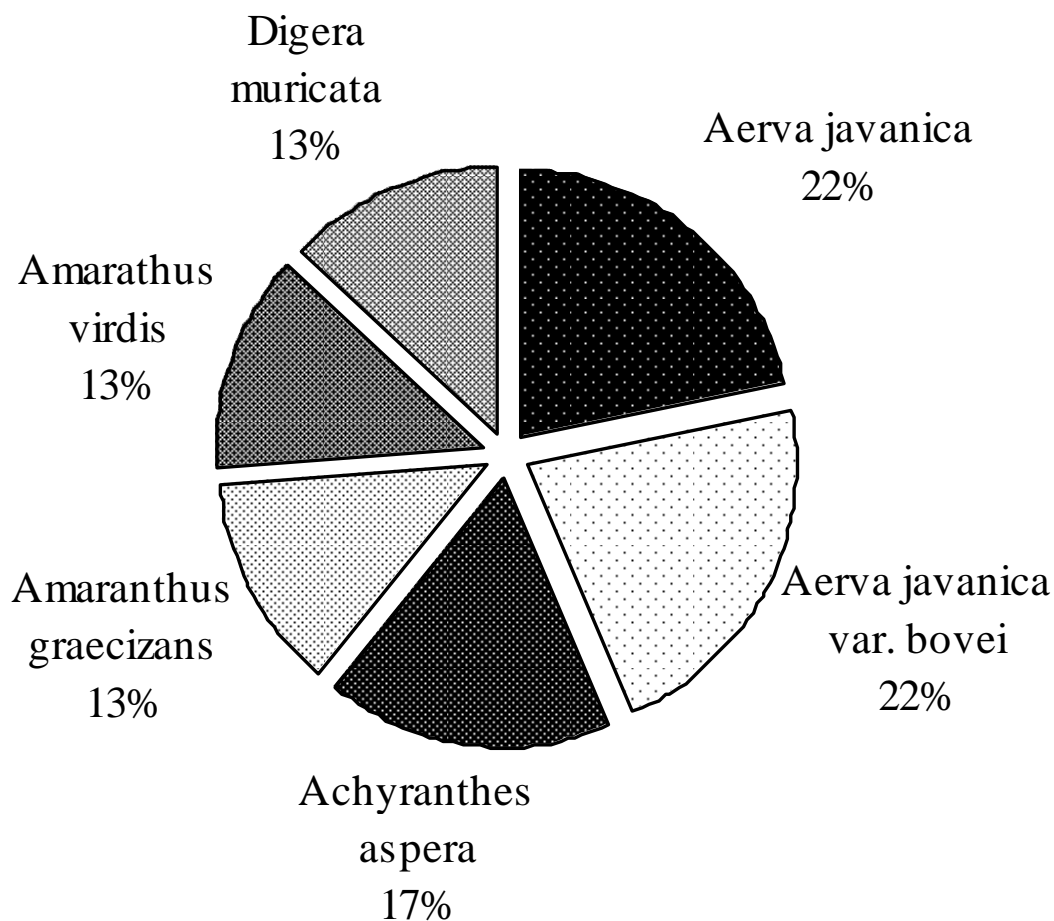


Fig. 1. Use value frequency of the recorded species.

Table 1. Showing plant species and uses along with use values recorded from the Nara Desert, Pakistan.

Plant species	Fodder	Human ailments	Veterinary uses	Potherb	Fuel	Stuffing pillows	Total score	Ranking
<i>Achyranthes aspera</i> Linn.	1	1	1	0	1	0	4	2nd
<i>Aerva javanica</i> (Burm. f.) Juss ex J. A. Shultes.	1	1	1	0	1	1	5	1st
<i>Aerva javanica</i> var. <i>bovei</i> Webb.	1	1	1	0	1	1	5	1st
<i>Amaranthus graecizans</i> subsp. <i>thellungianus</i> (Nevski) Gusev.	1	1	0	1	0	0	3	3rd
<i>Amaranthus viridis</i> L.	1	1	0	1	0	0	3	3rd
<i>Digera muricata</i> (L.) Mart.	1	1	0	1	0	0	3	3rd

1. *Achyranthes aspera* L.

Local name: *Ubat Kandri*

Occurrence: Common

Flowering period: September-December

Part used: All parts

Medicinal uses found in literature: The species has cooling, pungent, mild astringent, diuretic, antifibril, antiperiodic, emetic, expectorant, stomachic, digestive, purgative, laxative, emmenagogue, abortifacient, styptic, anodyne and resolvent properties (Perry, 1980; Usmanghani *et al.*, 1997).

The paste of the root is given to stop bleeding after abortion and to facilitate delivery and stimulate labor pain (Nadkarni, 1979). The infusion and decoction of the root are used for stitch, toothache and cleansing teeth (Perry, 1980).

Leaves are used for boils and abscesses (Singh *et al.*, 1981). The juice of the leaves is externally applied to eyes to brighten dimmed vision (Perry, 1980). The decoction of the leaves is used in early stage of diarrhea and dysentery (Agarwal, 1986). The paste of the leaves is externally applied over bites of poisonous insect, wasp, bees and burns (Nadkarni, 1979, Perry, 1980). The leaves and seeds are used as emetic and paste is externally applied to inflamed and enlarged glands hydrophobia and snakebite (Chopra *et al.*, 1956).

The seed are used as an emetic, expectorant, brain tonic and is effective in biliousness and bleeding piles. The ash of the plant is said to be effective in cough, chest pain and acidity. The plant is regarded to possess antidiabetic and anti-rheumatic property (El-Kheir and Salik, 1980). It is also observed effective in abdominal tumor (Zafar, 1994).

Uses in the study area (Nara Desert): This species was utilized in the same way as mentioned in literature though the compound made by different ingredients is new inventory from the area. Moreover, tea made up this plant and veterinary use is also new record for this species.

Medicinal uses: The powdered of the roots mixed with honey is used in asthma, cough, cold & pneumonia and joints pain. The paste made up of roots is applied to cuts to stop bleeding. The roots are also used as a tooth stick.

Fresh leaves are crushed with black peppers and given in intermittent fever. The leaves are ground to form paste is which externally applied to insect bites, to hasten the maturity of abscess and to expel thorn form the feet. Tea is made from inflorescence and seeds for cough, cold, nausea, chest pain, fever and colic. The paste of the inflorescence is used in scorpion bite. The ash soaked in water for 48 hours is dried over fire and residual powder is used in acidity, stomach pain, cough, cold, fever, rheumatic pain, piles, leprosy and micturation.

Veterinary uses: The decoction of the plant is given to cattle for cough, indigestion, joint pain and inflammation of the breast/teats. The paste is applied to heal the wounds of cattle especially of camels.

Fodder: The plant is used as fodder to cattle, sheep and goat.

2. *Aerva javanica* var. *bovei* Webb.**Local name:** *Booh***Occurrence:** Common**Flowering period:** September-December.**Part used:** All parts**Medicinal uses found in literature:** The plant is diuretic and demulcent and is effective in lithiasis. The flowers and seeds are externally applied as paste to inflamed parts of body and face acne. The roots are used for headache and wooly seeds are also used for stuffing pillows to relieve headache and protect rheumatic pains. The decoction of flowers is used to remove inflammation (Asolkar *et al.*, 1992).**Uses in the study area (Nara Desert):** This species possessed new additional uses not found in medicinal literature. Besides, veterinary uses are also first time reported for this species.**Medicinal uses:** The decoction of the plant is used as a gargle for toothache. Paste made up of leaves and inflorescence is used externally to heal the wounds and inflammation of joints.**Veterinary uses:** The decoction of the inflorescence and seeds is used as a purgative and anthelmintic in cattle. The paste of leaves is used for healing wounds and inflammation.**Stuffing pillows/matrices:** The cottony seeds are employed for stuffing pillows, which is said to be hotter than cotton and is supposed to be used in chorea and lumber pain. Furthermore, young branches and cottony seeds are also used in making bed sheet/matrices.**Fuel & fodder:** The plant is used as a fuel and leaves used for fodder to goats.**3. *Aerva javanica* var. *javanica* (Burm. f.) Juss ex J. A. Shultes.****Local name:** *Booh***Occurrence:** Common**Flowering period:** July-September.**Part used:** All parts**Medicinal uses found in literature:** Roots and flowers are reported to possess medicinal properties against rheumatism and kidney problems. Plant is reported as anthelmintic, diuretic, demulcent (Dymock *et al.*, 1972). It is used for the treatment of headache. The decoction of the plant is administered to remove swellings (Baquar & Tasnif, 1984), applied to acne like conditions of the face (Perry, 1980).**Uses in the study area (Nara Desert)****Local Medicinal/veterinary uses:** Same uses as under *Aerva javanica* var. *bovei* Webb.**4. *Amaranthus graecizans* subsp. *thellungianus* (Nevski) Gusev.****Local name:** *Malero***Occurrence:** Common

Flowering period: April-June

Part used: All parts

Uses in the study area (Nara Desert)

Fodder: The plant is used as fodder to sheep and goats, donkeys and deer.

5. *Amaranthus viridis* L.

Local name: *Mariro*

Occurrence: Common

Flowering period: October-April

Part used: All parts

Medicinal uses found in literature: Plant is light, cooling, acrid, carminative, diuretic, urolithiasis and laxative. It promotes appetite, improves digestion. It is also used in calcium (Said *et al.*, 1986) and vitamin A deficiency (Srikantia, 1978; Said *et al.*, 1986). The whole plant is used against burning sensation, dyspepsia, hemophilic conditions, urinary tract diseases and poisonous affections (Kurup *et al.*, 1979).

Uses in the study area (Nara Desert)

Medicinal uses: The paste of the root is applied on scorpion sting. The plant use as potherb is in common practice in this area for the alleviation of heat from the body as well as in removing kidney and gall bladder stones.

Potherb/fodder: The plant is used as potherb and fodder to sheep and goats.

6. *Digera muricata* (L.) Mart.

Local name: *Lulur*

Occurrence: Common

Flowering period: September-October

Part Used: All parts

Medicinal uses found in literature: Plant is laxative. Flowers and seeds are given in urinary discharges (Srivastava, 1989).

Uses in the study area (Nara Desert)

Folk medicinal uses: It is cooked as vegetable and given to relieve constipation.

Potherb/fodder: The plant is used as potherb and fodder to sheep and goats.

Discussion

Richard Ford (1978) redefined Ethnobotany as "The study of direct interaction between human and plant population through its culture and each human population/groups/community classified plants, developed attitude, beliefs and learned the use of plants, while human behaviors had a direct impact on the plant communities with which they interact (Pei, 1995). These mixture interactions are the focus of ethnobotany.

The inhabitants of remote places possess knowledge about the utilization of plants because of non-availability and accessibility of modern medicines. The main objective of ethnobotany is to record the indigenous knowledge of plants. Curing diseases is very important aspect of the life. For the survival, dwellers of the area use plant-based drugs growing close to their settlements. Over the centuries they discovered the therapeutic uses of these plants for curing particular diseases. This knowledge is generally transferred from parents to their offspring and if this knowledge will not be recorded then there is dearth of being lost forever. Chaudhary (1961) estimated more than 1500 medicinal plant species in Pakistan. The local people of Nara Desert have good knowledge of plants and they use plants for curing various ailments. Most of the plants discussed in this communication are used singly but different recipes are frequently used by them which are described in detailed. In addition, *Aerva javanica* possessed additional uses not recorded in Indo-Pak medicinal literature. Whereas *Achyranthus aspera* is used in the same way as mentioned in literature, however its compound use is reported for the first time from this area.

Conclusion

The local inhabitants of Nara Desert have good knowledge about the utilization of these plant species. They depend upon wild plants and livestock for their livelihood. Medicinal plants of the study area being exploited by local *Hakeems*/elderly known people and are taken away in large quantities for commercial purposes. This over-exploitation by the dwellers and over grazing is resulting in gradual decreasing the populations of these species day by day. So efforts must be made to conserve these important species for futuristic use by the coming generations.

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