



## CHECK LIST OF ETHNO PHARMACOLOGICAL IMPORTANT PLANTS OF MULTAN PAKISTAN

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**Abstract:** This study was carried in Rata basti, Labar basti, Bagh wala, Buch khosro and Nehaly wala areas lying around the Bahaudin Zakariya University Multan (Pakistan). The method implemented for documentation of native knowledge was based on direct communication with the local inhabitants, local hakims and gardeners of the area. The aim of the study was to collect original knowledge of natives about the use of native plants, which were being consumed by the people for the treatment of different diseases. The ethno medicinal uses of 44 plant species belonging to 26 families were documented during field tours from the study area. The check list and ethno medicinal register was established by botanical, local, family name, part used and folk medicinal uses. Plant varieties were collected, identified, preserved, attached and voucher was deposited from the Department of pure and applied Biology, Bahaudin Zakariya University, Multan for future references.

**Key Words:** Medicinal plants, Folk medicinal use, Multan Pakistan

### INTRODUCTION

The study area is located in the surrounding of Bahaudin Zakariya University Multan. It consists of Rata basti, Labar basti, Bagh wala, Buch khosro and Nehaly wala is located between 28°-32' North latitudes and 69°-74' East longitudes. The area organizes the basic of arid region of Pakistan and the weather situations are severe and subject to extremes of temperature. Winter is the cold with temperature falling nearly to freezing point in January. In summer hot winds carrying dust make life miserable and maximum temperature rises to over 45°C in June. The hottest month being in June. The area has low annual rainfall about 155mm. The rainy days hardly exceeds 30 annually. The greater part of the area occupied with sandy clay texture but there is considerable variation from heavy clay to loose sand. The soil is saline alkaline over much area in general and particularly in the areas around the Bahaudin Zakariya University Multan Pakistan. The common medicinal plants of the area are *Calotropis procera*, *Sonchus arvensis*, *Chenopodium album*, *Suaeda fruticosa*, *Salsola foetida* and *Cynodon dactylon*.

The herbal medications occupy separate position right from the embryonic period to present day. The ethno botanical pharmacology is as old as man himself. In Indo-Pak first record of herbal medicine were collected in Rig Veda between 4500-1600 BC and Ayurveda between 2500-600BC. This method traces its origin to Greek medicine, which was accepted by Arabs and then extent to India and Europe. About 80% population of the world depends on the old system of health care (Ahmad 1999). These remedies have less side effects and man can get it easily from flora. Greek system is leading in Pakistan but the ethno

medicinal plants use is also seen in the rural areas. (William 2002).

Traditional and indigenous medical knowledge of plants, both oral and organized, are unquestionably eroding. Keeping in view the importance of medicinal flora of Multan, the study was confined to collect and document the native knowledge of local people about medicinal uses of native plants. The present study was aimed to document the traditional knowledge of Multan.

### MATERIALS AND METHODS

The research area was surveyed by the researchers and Plant varieties were collected from various zones of the area identified, preserved, attached and voucher was deposited from the Department of pure and applied Biology, Bahaudin Zakariya University, Multan. The check list and ethno medicinal register was established by botanical, local, family name, part used and folk medicinal uses. The study was based on direct communication with the local inhabitants, local hakims, herb seller and gardeners of the area. This information was then compared with available literature and found to be authentic.

### RESULTS AND DISCUSSION

Table 1 indicated that a total of 20 people were interviewed for traditional use of medicinal plants Multan. Additionally, 17 of them were males while the remaining 3 were females. Entirely the herb sellers interviewed were male and In addition, majority of the respondents were within the age group of 30 to 49 (Twelve). Only 1 of the respondents was a University

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graduate, the rest were Hakeem (3), herb seller (6), Agriculture (3), Gardner (5), Apart the University graduate, majority were under matric (17).

**Table 1:** Descriptive Summary for Study Participants (N = 20)

Variable	Frequency	Percent
Age		
Under 30 years	0	0%
30 to 49 years	12	60%
50 to 59 years	5	25%
60 years or older	3	15%
Gender		
Male	17	85%
Female	3	15%
Level of education		
Uneducated	2	10%
Less than matric	17	85%
Above to bachelor	1	5%
Occupation		
Hakeem	3	15%
Herb seller	6	30%
Agriculture	3	15%
Gardener	5	25%
Other	3	15%

The data on ethno medicinal of forty four plant species belonging to twenty six families, were collected. Information regarding their botanical name, local name, family, part used and their ethno medicinal uses are listed in the Check List (Table 2) (Table 3).

This study express that outdated medicinal Practices have been widely known and has a Long history among the people. Majority of the herbal formulas were observed to be poly-herbal. Poly-herbal treatment is said to be an up-to-date pharmacological principle having the benefit of producing maximum therapeutic effectiveness with less side effects (Ebong, Patrick Ekong, 2008). According to Tiwari, poly-herbal treatments have the synergistic, agonistic/antagonistic pharmacological agents within themselves that work together in a dynamic way to produce therapeutic efficacy with less side effects. Also, it could be observed that water was the key solvent used for infusion, boiling, decoction, concoction and other combinations (Tiwari 2002). The results in this study conform too many earlier conducted ethno medicinal studies and

pharmacological studies in other parts of Southern Punjab of Pakistan.

Herbal medicine, there pharmacognostic classification and their balanced uses are really the folk assets lying feasible and remained well preserved in the remote cut off areas. Pakistan has a different flora having about six thousand species of phanerogams. Assessments indicate that around seven hundred plant species are used as medicinal plants (Pei, 1992). In Pakistan eighty percent of the people belonging to the country side parts still depends upon the herbal medicines (Anonymous, 1997). In the recent years, more struggles have been made to document the traditional knowledge. In this respect traditional use of one hundred and sixty plants have been described, gathering the information form Margalla Hills National Park. The preservation rank has also been discussed (Shinwari & Khan, 2000). About fifty eight species of medicinal plants have been initially listed from Ayubia National Park-Galliat (Shah, 2001). Native knowledge of about twenty five medicinal herbs from Kahuta-Rawalpindi district has been described (Qureishi and Khan, 2001). Also traditional uses of about 43 plants have been recorded from Cholistan Desert (Mansoor Hameed et al., 2011). Ethnobotanical importance of about fifty two families has been documented from Southern Punjab (Mughal TA, 2009). Folk medicinal uses of sixty six different plant species were documented Dera Ghazi Khan (Allah Bakhsh Gulshan et al., 2012).

The people of the research are entirely rural and mostly poverty-stricken, undernourished and illiterate. The conservation program can protect the medicinal plants by help of local people regeneration of plants is also badly affected due to heavy grazing. The area is highly disturbed and degraded due to many factors and man is the prime source in removing the flora and the degradation of flora through cutting and burning. However, sustainable use of plant assets is required in the area, as ruthless use of these plant assets will result in the loss of important flora. If the interferences could somehow, be controlled, the local flora will definitely take a turn near to improvement.

**Table 2:** Ethno pharmacological important plants of Multan

Sr.	Botanical Name	Local name	Family	Part used	Folk medicinal use
1	<i>Trianthema portulacastrum</i> Linn.	At Set	Aizoaceae	Leaves	UIT and LD
2	<i>Amaranthus viridis</i> Linn.	Phot booti	Amaranthaceae	Whole plant	GD, ED, RD and GI
3	<i>Aerva persica</i> (Burm.f) Juss	Kandere	Amaranthaceae	Leaves, Stem	AA, GI, GD
4	<i>Alternanthera sessilis</i> Linn	Gandal Boti	Amaranthaceae	Whole plant	ED, MSD, RD, GIT and LD
5	<i>Cataranthus roseus</i> Linn	Sada bahar	Apocynaceae	Roots, Shoots	DM, ANC
6	<i>Thevetia aperiuviana</i> (Pers.) Schum.	Pela Kanar	Apocynaceae	Seed, Bark	DD, ED, SD
7	<i>Leptadenia pyrotechnica</i> (Forssk) Decne	kip	Asclepiadaceae	Root, Bark and Leaves	UTI, GIT, RD
8	<i>Calotropis procera</i> (Willd.); R.Br.	aak	Asclepiadaceae	Flowers, Leaves, Bark and Root	RD, GIT, GI
9	<i>Ageratum houstonianum</i> Mill	osari	Asteraceae	Whole plant	CW
10	<i>Ageratum conzeoides</i> Linn	Agira	Asteraceae	Root, Stem, Leaves	SD, GI, DD
11	<i>Sonchus arvensis</i> Linn	Malai boti	Asteraceae	Root, Shoot	UTI, LD and GI
12	<i>Launaea procumbens</i> (Roxb)	Bhatar boti	Asteraceae	Whole plant	GIT, GI

13	<i>Sonchus asper</i> Linn.	Bhtal boti	Asteraceae	Whole plant	GIT, UTI and GI
14	<i>Echinops spinosus</i> Linn	Onth ktara	Asteraceae	Whole plant	ANB, ANF, GI and MSD
15	<i>Heliotropium indicum</i> Linn	Brandi	Boraginaceae	Leaves, shoots	CW, GI, SD and ANB
16	<i>Sisymbrium irio</i> Linn.	Jangli sarsoon	Brassicaceae	Whole plant	GIT, RD and RD
17	<i>Coronopus didyma</i> Linn	Chareni boti	Brassicaceae	Whole plant	GI and RD
18	<i>Spergularia rubra</i> Linn	unknwon	Caryophyllaceae	Leaves	UTI
19	<i>Capparis decidua</i> (Forssk)	Kalido	Capparaceae	Fruit , Root	GIT and CD
20	<i>Chenopodium album</i> Linn	Batho	Chenopodiaceae	whole plant	SD, LD, AF and ANB
21	<i>Saueda fruticosa</i> (L) Forsk	Kori lanee	Chenopodiaceae	Whole Plant	ED and SD
22	<i>Salsola foetida</i> Linn	Lannan	Chenopodiaceae	Whole plant	GI
23	<i>Convolvulus arvensis</i> Linn	Wunweehr bail	Convolvulaceae	Whole plant	GIT
24	<i>Euphorbia helioscopia</i> Linn	Chatre dudhak	Euphorbiaceae	Whole plant	AA, RD and BW
25	<i>Alhagi mauroorum</i> Medic.	jwansa	Fabaceae	Whole plant	ANC, GIT, RD and UTI
26	<i>Mellilotus indica</i> Linn	sinji	Fabaceae	Whole plant	ED and GI
27	<i>Medicago denticulata</i> Willd	Minha	Fabaceae	seeds	GD, RD and GIT
28	<i>Vicia sativa</i> Linn.	Mattri	Fabaceae	Whole plant	GIT, RD and UTI
29	<i>Trigonella corniculata</i> (Linn.)	Jangli methi	Fabaceae	Whole plant	MSD, UTI, GD and GIT
30	<i>Fumaria parviflora</i> (Hausk.)	Shahtra	Fumariaceae	Whole Plant	CVS, DD
31	<i>Asphodelus tenuifolius</i> Cav.	Jangli piyaz	Liliaceae	Whole plant	ANB, AF and GI
32	<i>Malva neglecta</i> Wallr	khabasi	Malvaceae	Leaves, Flowers and fruits	RD, GIT and SD
33	<i>Albizia lebbek</i> Linn	Shirin	Mimosaceae	Bark, Leaves and Flowers	DD, GI and SD
34	<i>Oxalis corniculata</i> Linn	Khat meth boti	Oxalidaceae	Leaves and roots	GIT, SD and ED
35	<i>Cymbopogon javaracusa</i>	Khawi boti	Poaceae	Whole plant	DD, RD and GI
36	<i>Cynodon dactylon</i>	khabal	Poaceae	Root and leaves	ANB and ANF
37	<i>Protulaca oleracea</i> Linn.	Loonak	Portulacaceae	Whole plants	UTI, GI and ANB
38	<i>Anagallis arvensis</i> Linn.	Neli boti	Primulaceae	Whole plant	GI, RD, RD, ND and LD
39	<i>Salvadora persica</i> Linn	Meetha jal	Salvadoraceae	Whole plant	MSD, ANB, GI, UTI and RD
40	<i>Dodonaea viscosa</i> Jacq.	Snatha	Sapindaceae	Leaves	RD and GIT
41	<i>Mazus goodenifolius</i> (Homem.)	Unkown	Scrophulariaceae	Whole plant	ANB
42	<i>Withania somnifera</i> Linn.	Aksan	Solanaceae	Fruit	GD, GI, DD, ANC and SD
43	<i>Lantana camara</i> Linn	Ghaneri	Verbenaceae	Leaves, Root and Flowers	ANB, AF, GIT , RD and ANC
44	<i>Phyla nodiflora</i> Linn	Unknown	Verbenaceae	Whole plant	ANF, UTI, ANC, LD, SD and DM

\*Key to the medical terms:

ND Neurological diseases  
CVS Cardiovascular system  
DD Diabetes diseases  
LD Liver diseases

UTI Urinary tract infection  
AA Allergies  
MSD Male sexual disorder  
ED Eye diseases

GI General Infection  
GD Gynecological diseases  
RD Respiratory  
ANC Anticancer

ANF Antifungal  
ANB Antibacterial  
SD Skin disorder  
GIT Gastro intestinal tract

**Table 3:** Information of Species of Ethno Pharmacological Important Plants of Multan

Family	Species	% age
Aizoaceae	1	2.2
Amaranthaceae	3	6.8
Apocynaceae	2	4.5
Asclepiadaceae	2	4.5
Asteraceae	6	13.6
Boraginaceae	1	2.2
Brassicaceae	3	6.8
Caryophyllaceae	1	2.2
Capparaceae	1	2.2
Chenopodiaceae	3	6.8
Convolvulaceae	1	2.2
Euphorbiaceae	1	2.2
Fabaceae	5	11.3
Fumariaceae	1	2.2
Liliaceae	1	2.2
Malvaceae	1	2.2
Mimosaceae	1	2.2
Oxalidaceae	1	2.2
Poaceae	2	4.5
Portulacaceae	1	2.2
Primulaceae	1	2.2
Salvadoraceae	1	2.2
Sapindaceae	1	2.2
Scrophulariaceae	1	2.2
Solanaceae	1	2.2
Verbenaceae	2	4.5

## REFERENCES

- Conklin DE, vitamin requirements of juvenile Penaeid shrimp. *Advances in Tropical Aquaculture*, 1989, 9, 287-308.
- Mukhopadhyay PK, Rangacharyulu PV, Mitra G, Jana BB, Applied nutrition in fresh water prawn, *Macrobrachium rosenbergii* culture, *J App Aquacult*, 2003, 13, 317-340.
- Heinen JM, Vitamin requirements of freshwater prawn *Macrobrachium rosenbergii*, *J World Aquacult Soc*, 1988, 19 (1) 36(A), 116.
- Patricia MM, JR Tomasso, TM Brandt, Effects of Dietary Vitamin C on Growth, Caudal Fin Development, and Tolerance of Aquaculture-Related Stressors in Channel Catfish, *The Progressive Fish-Culturist*, 1987,49(1), 13-16.
- Hunter B, PC Magarelli, Jr DV Lightner, LB Colvin, Ascorbic acid dependent collagen formation in Penaeid shrimp, *Comp Biochem Physiol*, 1979, 64B, 381-385.
- Guillaume J. Generalites. In: Guillaume J, Kaushik S, Bergot P, Metailler R. (Eds.) *Nutrition et Alimentation des poissons et crustaces*, INRA ed. Brest, France, 1999, 25- 39.

7. Deshimaru O, K Kuroki, Studies on a purified diet for prawn, VII. Adequate dietary levels of ascorbic acid and inositol Bull Jpn Soc Sci Fish, 1976. 42, 571-576.
8. Lightner DV, B Himtea, PC Magarelli Jr, LB Colvin, Ascorbic acid: Nutritional requirement and role in wound repair in penaeid shrimp, Proc World Maricult Soc, 1979, 10, 513-528.
9. Durve VS and Lovell RT, Vitamin C and disease resistance in channel catfish (*Ictalurus punctatus*), Can J Fish Aquat Sci, 1982, 39, 948-951.
10. Arup Tewary, Bidhan C Patra, Use of vitamin C as an immunostimulant, Effect on growth, nutritional quality, and immune response of *Labeo rohita* (Ham.), Fish Physiology and Biochemistry (Impact Factor: 1.55), 2008, 34(3), 251-9.
11. Guary M, Kanazawa A, Tanka N, Ceccaldi HJ, Nutritional requirements of prawn-IV Requirement for ascorbic acid, Memoris of the Faculty of Fisheries, Kangoshima University, 1976, 25, 53-57.
12. Conklin DE, Vitamin requirements of juvenile Penaeid shrimp, Advances in Tropical Aquaculture, 1989, 9: 287-308.
13. Racotta IS, Palacios E, Hernandez-Herrera R, Bonilla A, Perez-Rostro CI, Ramirez JL, Criteria for assessing larval and Postlarval quality of pacific white shrimp (*Litopenaeus vannamei* Boone), Aquaculture, 2004, 233, 181-195.
14. Halver JE, The vitamins, In *Fish nutrition* 2nd edition, Halver JE (Ed) Academic Press Inc, New York, 1989, 31-109
15. Lightner DV, Colvin LB, Brand C, Donald DA, "Black Death" a disease syndrome of penaeid shrimp related to a dietary deficiency of ascorbic acid, Proc World Maricul Soc, 1977, 8, 611-618.
16. Magarelli PC jr, B Hunter, DV Lightner, LB Colvin, Black death: an ascorbic acid deficiency disease in Penaeid shrimp, Comp Biochem Physiol, 1979, 63A, 103-108.
17. He H, AL Lawrence, Vitamin C requirement of the shrimp *Penaeus vannamei*, Aquaculture, 1993, 114 a, 305-316.
18. Felix S, K Sivakumar, 'Pro-p assay' to measure immune enhancement in *Penaeus monodon* (Fabricius). J Aquacult Trop, 2003, 18: 111-119.
19. Dabrowski K, Ascorbic acid status in the early life of white fish (*Coregonus laveratus*. L) Aquaculture, 1990, 84, 61-70.
20. Kitabayashi K, Shudo K, Nakamura K, Ishikawa S, Studies on formula feed for Kuruma prawn, On the utilization values of glucose, Bull Japan Soci Sci Fish, 1971b, 65, 109-118.
21. Harrison KE, The role of nutrition in maturation, reproduction and embryonic development of decapod crustaceans a review, Journal of Shellfish Research, 1990, 9, 1-28.
22. Iwata M, Shigeno K, Vitamin-C deficiency symptoms of prawn, *Penaeus japonicus*, Meeting of the Japanese Soci Sci Fish, Abstract, 1980, 8.
23. Shiau SY, FL Jan, Ascorbic acid requirement of grass shrimp *Penaeus monodon*, Nippon Suisan Gakkaishi, 1992, 58, 363.
24. Louis R. D'Abramo, Cynthia A.Moncreiff, Felix P. Holcomb, J. Labrenty Montanez and Randal K. Buddington (1994) Vitamin C requirement of the juvenile freshwater prawn, *Macrobrachium rosenbergii*. Aquaculture, 128 (3-4): 269-275.
25. Sherief PM, CM Nair, V Mallika, The cholesterol requirement of larval and postlarval prawn (*Macrobrachium rosenbergii*), In Fresh water prawns, EG Silas (Ed), 1992, 213-217.
26. AOAC, Official methods of analysis Association of Analytical Chemists, Inc, Arlington USA, 1990.
27. Omaye ST, JD Tumbull, HE Sauberlich, Selected methods for the determination of ascorbic acid in animal cells, tissues and fluids, In *Methods in Enzymology* Vol 62, (DB Mc Cormick and LD Wright (Eds) Academic press, Inc, Newyork, 1979, 3-11.
28. Petriella, AM, Study of the moulting cycle of the argentine prawn, *Artemesia longinaris*, Bate III Influence of cholesterol, J Aquacult Trop, 1990, 6, 77-86.
29. Turchini GM, Mentasti T, Froyland L, Orban E, Caprino F, Moretti VM, Valfrè F, Effects of alternative dietary lipid sources on performance, tissue chemical composition, mitochondrial fatty acid oxidation capabilities and sensory characteristics in brown trout (*Salmo trutta* L) Aquaculture, 2003, 225, 251-267.
30. Hari B, BM Kurup, Vitamin C (Ascorbyl 2 Polyphosphate) Requirement of Freshwater Prawn *Macrobrachium rosenbergii* (deMan), Asian Fisheries Science, 2002, 15, 145-154.
31. Lopez N, G Cuzon, G Gaxiola, G Taboada, M Valenzuela, C.Pascual, A Sanchez, P Rosas, Physiological, nutritional, and immunological role of dietary beta 1-3 glucan and ascorbic acid 2-monophosphate in *Litopenaeus vannamei* juveniles, *Aquaculture*, 2003, 224, 223-243.
32. Gopal C, Nutritional studies on juvenile *Penaeus indicus* with reference to protein and vitamin requirement, Cochin University of Science and Technology, Cochin, India, 1986.

33. Lovell RT, Protein requirement of cage cultured channel catfish, Proceedings, Southeast Asian Association of game and fisheries commission, 1972, 26, 357-361.
34. Patricia M Mazik, JR Tomasso, TM Brandt, Effects of Dietary Vitamin C on Growth, Caudal Fin Development, and Tolerance of Aquaculture-Related Stressors in Channel Catfish, The Progressive Fish-Culturist, 1987, 49, 1, 13-16.
35. Boonyaratpalin M, Pongmaneerat J, Ascorbic acid derivative requirement of *Penaeus monodon*, Phuket Mar Biol Cent Res Bull, 1995, 60, 65-73.
36. Reddy HRV, MG Naik and TS Annappaswamy, Evaluation of the essentiality of vitamins for *Penaeus monodon*, Aquaculture Nutrition 5, 4, 1999a, 267-275.
37. Shiau SY, FL Jan Ascorbic acid requirement of grass shrimp *Penaeus monodon*, Nippon Suisan Gakkaishi, 1992, 58, 363.
38. New MB, A review of dietary studies with shrimp and prawns, Aquaculture, 1976, 9, 101-144.
39. Chew BP, Antioxidant vitamins affect food animal immunity and health, Journal of Nutrition, 1995, 125, 1804S-1808S.
40. FAO, The state of World fisheries and aquaculture food and agriculture Organization of the United Nation, Rome, 2006,
41. Gapasin RSJ, Bombeo R, Lavens P, Sorgeloos P, Nelis H, Enrichment of live food with essential fatty acids and vitamin C effects on milkfish (*Chanos chanos*) Larval performance, Aquaculture, 1998, 162, 269-286.
42. Anh NTN, Hien TTT, Mathieu W, Hoa NV, Sorgeloos P, Effect of fishmeal replacement with Artemia biomass as a protein source in practical diets for the giant freshwater prawn *Macrobrachium rosenbergii*, Aqua Res, 2009, 40, 669-680.

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