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Ethnobotanically Important Plants of Humzoni, Nwa, Kpk, Pakistan

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This study documented the ethnobotanical values of the most commonly used plants of the Humzoni (NWA), Pakistan in the year 2011-2012, and reports on the indigenous knowledge of different communities of the study area. A total of 51 plant species belonging to 32 families were found to be valuable for medicinal, food, fodder/forage, fuel, timber, shelter and agricultural purposes. Local people used indigenous plants for their common day ailments. The largest families among these are Rosaceae (6 Genera), Solanaceae (5 Genera), Asclepiadaceae (3 Genera), Moraceae (3 Genera), Ruteaceae(2 Genera) and Lamiaceae (2 Genera). It was reported that most common part of the plant used are leaves (21%) and Fruit (18%). As there is no river or other sources of water, that's why most of the plants were found wild. More over there is no trend of cultivation of medicinal plants in the said area. The ethnobotanical important plants are *Citrus limon*, *Cydonia oblonga*, *Withania coagulens*, *Vitex negundo*, *Mentha sylvestris* and *Fagonia Cretica*.

Keyword: Ethnobotany, Common Plants, Humzoni.

1. Introduction

North Waziristan is the northern part of Waziristan, a mountainous region of northwest Pakistan, bordering Afghanistan and covering 11,585 square kilometres (4,473 sq mi). Waziristan comprises the area west and south-west of Peshawar between the Tochi river to the north and the Gomal river to the south, forming part of Pakistan's Federally Administered Tribal Areas (FATA). Miranshah is capital of North Waziristan. Khyber Pakhtunkhwa lies immediately to the east. Humzoni is situated on both the side of the Touchi valley of about 15 kilometers in east, west direction and 18 kilometers wide from north, south, flanked by mountain ridges about 1500 to 2100 meters height. The highest mountain among Humzoni is Wezda Pamani Sar

which is about 1600 meters to 2100 meters respectively. The total population of Humzoni is about 30000.



Ethnobotany plays an important role in understanding the dynamic relationships between biological diversity and social and cultural systems. Ethnobotanical approaches are significant in highlighting locally important plant species, particularly for new crude drugs. Documentation of indigenous knowledge, in particular the medicinal values of plant species, provided various vital modern drugs. About 25% of drugs originate from plants and many other drugs are synthetic analogues of compounds isolated from plants. About 80% of the people of developing countries are still dependent on traditional indigenous medicines for their basic healthcare^[1,2,3,4].

Pakistan has a high diversity of plants that are being used by local communities for medicinal purposes. Proper usages of these plants are commonly practiced at the community and end-user level. However, there are many parts of the country which remain unexplored by ethnobotanists; there is no report available for the proper usage of plants. Azad Jammu and Kashmir (AJK) is rich with medicinal plants and diversified plant habitats. Reports on the traditional medicinal uses of plants by the local communities of AJK are increasing^[5,6,7].

The present study reports on the ethnobotanically important resources from the Humzoni (NWA), Pakistan and analyzes the indigenous traditional knowledge on the utilization of the most commonly used medicinal plants.

2. Materials and Methods

Ethnobotanical surveys were conducted during 2011-2012. Information on local uses of plants was collected from various localities by arranging meetings, interviews, dialogues and discussions with rural, knowledgeable people, hakims and shepherds. The plants were tagged with signified data, local and other characteristic about the plant species. The specimens were

pressed in a presser with blotting paper between the adjacent specimens. The blotting papers and News Papers were changed from time to time depending upon the weather and situation of plant. Dried species were treated by 2% solution of Mercuric Chloride and Ethyl Alcohol, mounting of specimens was made on standard herbarium of sheets of size (41.25cm) x 28.75cm.

The plant species collected during surveys were identified by taxonomists using the Flora of Pakistan and voucher specimens were submitted to the Department of Botany, UST, Bannu^[8,9,10,11].

3. Results and Discussion

The present research work reported a total of 51 plant species belonging to 32 families to be valuable for medicinal, food, fodder/forage, fuel, timber, shelter and agricultural purposes. The largest families among these are Rosaceae (6 Genera), Solanaceae (5 Genera), Asclepiadaceae (3 Genera), Moraceae (3 Genera), Ruteaceae (2 Genera) and Lamiaceae (2 Genera). It was reported that most common part of the plant used are leaves (21%) and Fruit (18%). The ethnobotanical important plants are *Citrus limon*, *Cydonia oblonga*, *Withania coagulens*, *Vitex negundo*, *Mentha sylvestris* and *Fagonia Cretica*. All the collected plants species have great medicinal values. The research highlighted the traditional and local uses of the selected plants species. The collected data contains herbs, shrubs and trees belonging to different families. The documented plants are used by the residents for various diseases. During the study it was noted that generally the people are ignorant about the uses of medicinal plants. As there is no river or other sources of water, that's why most of the plants were found wild. Moreover, there is no trend of cultivation of medicinal plants in the said area. Each plant species is cited with botanical name, local

name, family, habit, part used and their uses in Table No.1.

Table 1: Floristic Composition and Their Uses

Botanical Name	Family	Local Name	Part Used	Habit	Uses
1. <i>Acacia nilotica</i>	Mimosaceae	Kikar	Leaves Bark Pod	Tree	<ul style="list-style-type: none"> • Ulcer • Respiratory inflammation • Digestion • Urinary tracts inflammation • Diarrhea • Dysentery • Tuberculosis
2. <i>Alhaji maurorum</i>	Papilionaceae	Tandah	Whole plant	Shrub	<ul style="list-style-type: none"> • Anti-bacterial activities • Diaphoretic • Diuretic • Expectorant • Laxative • Piles
3. <i>Amaranthus viridis</i>	Amaranthaceae	Ranzaka	Root & Leaves	Herb	<ul style="list-style-type: none"> • Abscesses • Diuretic • Dysentery • Anemia • Constipation • Skin clearing • Snake bite • Scorpion sting • Leprosy • Stomach problems
4. <i>Bauhinia variegata</i>	Fabaceae	Kachnar	Flower, Bark & Shoot	Tree	<ul style="list-style-type: none"> • Blood purifier • Ulcer • Skin diseases
5. <i>Calotropis procera</i>	Asclepiadaceae	Spalmaka	Whole plant	Shrub	<ul style="list-style-type: none"> • Spleen Diseases • Ulcer • Anti-inflammation • Decrease intestinal transit • Leprosy • Tumour • Piles • Antipyretic • Anticancer
6. <i>Cannabis sativa</i>	Cannabinaceae	Banga	Leaves & Bark	Herb	<ul style="list-style-type: none"> • Gonorrhoea • Skin Inflammation • Placenta & Post partum hemorrhage • Swelling of liver • Abortion

					<ul style="list-style-type: none"> • Sterility • Tetanus • Tuberculosis • Asthma
<i>7.Capparis spinosa</i>	Capparidaceae	Krherha	Buds, Roots, seeds & Leaves	Shrub	<ul style="list-style-type: none"> • Rheumatism • Anti-inflammation • Anti-carcinogenic • Anti-oxidant
<i>8.Caralluma edulis</i>	Asclepiadaceae	Pamana	Arial parts & Flowers	Herb	<ul style="list-style-type: none"> • Prevention of aging • Alzheimer • Diabetics • Hypertension
<i>9.Citrullus colocynthis</i>	Cucurbitaceae	Maraginye	Root & Fruits	Herb	<ul style="list-style-type: none"> • Abortion • Against parasitic worm • Iliac passion • Jaundice • Asthma • Bronchitis • Abdominal disorder
<i>10.Citrus limon</i>	Rutaceae	Nimbo	Fruit, Roots & Seeds	Shrub	<ul style="list-style-type: none"> • Mosquito repellent • Digestive • Diuretic • Laxative • Constipation • Diarrhea • Skin disease • Tumors • Asthma • Cough • Vomiting
<i>11.Citrus maxima</i>	Rutaceae	Malta	Fruit, Roots & Seeds	Tree	<ul style="list-style-type: none"> • Back pain • Ulcer • Cough • Aggregation • Anti-oxidant • Anti-cancer • Anti-viral • Anti-diabetic • Vomiting • Nervous disorder • Anti-allergic • Analgesic
<i>12.Cydonia oblonga</i>	Rosaceae	Behii	Fruit,see ds & Flower	Tree	<ul style="list-style-type: none"> • Sore throat • Cough • Pneumonia • Intestinal discomfort • Lung diseases
<i>13.Dalbergia sisso</i>	Papilionaceae	Shawa	Root, Leaves & Bark	Tree	<ul style="list-style-type: none"> • Nose disorder • Scabies • Urine scalding • Stimulant

					<ul style="list-style-type: none"> • Gonorrhea • Stomach problem • Nausea • Syphilis • Anthelmintic • Anti-pyretic • Expectorant • Anal disorder • Blood disorder
<i>14.Datura alba</i>	Solanaceae	Burbaka	Seeds, Fruit, Leaves & Bark	Shrub	<ul style="list-style-type: none"> • Asthma • Muscle spasm • Whooping cough • Ulcer • Hemorrhoids • Rheumatism
<i>15.Dodonaea viscosa</i>	Sapindaceae	Zerawana	Leaves & Bark	Shrub	<ul style="list-style-type: none"> • Anodyne • Astringent • Diaphoretic • Toothache • Sore throat • Wounds • Skin rashes • Fever treatment
<i>16.Elaeagnus angustifolia</i>	Elaeagnaceae	Sanzalla	Seed & Flower	Herb	<ul style="list-style-type: none"> • Fever • Bronchial affection • Cough • Blood purifier • Thatching • Hedging
<i>17. Ephedra procera</i>	Ephedraceae	Mowah	Pollen & Whole plant	Shrub	<ul style="list-style-type: none"> • Cardiach • Prevention against asthmatic attack • Rheumatism • Syphilis • Cold • Flue • Typhoid • Cough • Bronchial asthma
<i>18.Eriobotrya japonica</i>	Rosaceae	Alokat	Leaves & Fruit	Tree	<ul style="list-style-type: none"> • Sedative • Vomiting • Expectorant • Diarrhea • Depression
<i>19.Fagonia cretica</i>	Zygophyllaceae	Spelaghzii	Arial parts	Herb	<ul style="list-style-type: none"> • Stomach trouble • Small pox • Skin disease • Fever • Thirst • Vomiting • Urine problem

					<ul style="list-style-type: none"> • Asthma • Liver problem • Dropsy • Typhoid • Toothache
<i>20.Ficus carica</i>	Moraceae	Inzar	Fruit & Latex	Tree	<ul style="list-style-type: none"> • Laxative • Mouth cleaner • Inflammation • Wounds • Bronchitis • Cough • Skin sagging
<i>21.Allium sativum</i>	Liliaceae	Yeeza	Bulb & Leaves	Herb	<ul style="list-style-type: none"> • Influenza • T.B • Asthma • Cough • Heart disease • Blood pressure
<i>22.Lycopersicum esculentum</i>	Solanaceae	Tamatar	Fruit	Herb	<ul style="list-style-type: none"> • Furuncles • Scorpion and other insect bite • Kidney and liver problem • Digestion
<i>23.Melia azedarach</i>	Meliaceae	Bakana	Bark, ripen fruit & Gum	Tree	<ul style="list-style-type: none"> • Burns • Gingivitis • Gonorrhoea • Headache • Piles • Pyrexia • Diabetes • Spleen enlargement
<i>24.Mentha sylvestris</i>	Lamiaceae	Lewanii Vellana	Whole plant, Oil & Powder	Herb	<ul style="list-style-type: none"> • Stomachache • Chest pain • Teeth whitening • Diuretic • Anti-pyretic • Insect bite
<i>25.Mentha viridis</i>	Lamiaceae	Vellana	Whole plant	Herb	<ul style="list-style-type: none"> • Carminative • Antispasmodic • Stimulant • Scalding of urine • Suppressed urine • Painful hemorrhoids
<i>26.Morus alba</i>	Moraceae	Bedana toot	Leaves, Fruit, Root & Root bark	Tree	<ul style="list-style-type: none"> • Against food poisoning of microorganism • Leukemia • Hypoglycemia • Neuro-protective • Dyspepsia • Cough

<i>27.Morus nigra</i>	Moraceae	Toor toot	Fruit & Leaves	Tree	<ul style="list-style-type: none"> • Antibacteria • Astringent • Diaphoretic • Diuretic • Analgesic • Emollient • Sedative • Hypoglycemia • Ophthalmic • Expectorant • Constipation
<i>28.Nanorrhops richiana</i>	Areaceae	Mazara	Leaves	Tree	<ul style="list-style-type: none"> • Purgative • Diarrhea • Dysentery
<i>29.Olea cuspidate</i>	Oleaceae	Shwana	Leaves & Oil	Tree	<ul style="list-style-type: none"> • Reduce blood sugar level • Malaria • Antioxidant • Antipyretic • Antiseptic • Mental fatigue • Astringent • Laxative • Sedative • Reduce gastric secretion
<i>30.Peganum harmala</i>	Zygophyllaceae	Sponda/ Spellanii	Seeds	Herb	<ul style="list-style-type: none"> • Menstrual problems • Mental & nervous illness • Digestive • Diuretic • Narcotic • Against tapeworm • Baldness • Ophthalmic • Stomach problem • Urinary & sexual problem
<i>31.Prunus amygdallus</i>	Rosaceae	Badam	Oil, Fruit & Seed	Tree	<ul style="list-style-type: none"> • Brain tonic • Nervous system • Gastric problem • Reduce lipo-protein level in blood
<i>32.Periploca aphylla</i>	Asclepiadaceae	Barara	Leaves & Stem	Herb	<ul style="list-style-type: none"> • Asthma • Inflammation • Cough • Sedative • Spasmodic
<i>33.Pinus gerardiana</i>	Pinaceae	Zanghozii	Leaves, Seeds & Bark	Tree	<ul style="list-style-type: none"> • Stimulant • Wounds • Ulcer • Antiseptic • Diuretic

					<ul style="list-style-type: none"> • Tonic
34. <i>Prunus domestica</i>	Rosaceae	Alocha	Fruit & Bark	Tree	<ul style="list-style-type: none"> • Cooling • Digestive • Laxative • Hypertension • Nausea • Asthma • Fever • Miscarriage • Vomiting • Headache
35. <i>Populus</i> sp.	Salicaceae	Spedar	Bark & Leaves	Tree	<ul style="list-style-type: none"> • Vesicle irritation • Nervous disorder • Urinary infection • Lumbricoid worm
36. <i>Prunus armeniaca</i>	Rosaceae	Mandatha	Seeds & Fruit	Tree	<ul style="list-style-type: none"> • Asthma • Expectorant • Constipation
37. <i>Psidium guajava</i>	Myrtaceae	Amrood	Leaves, Fruit & Juice	Tree	<ul style="list-style-type: none"> • Diarrhea • Menstrual problem • Mouth ulcer • Active against amoeboid dysentery
38. <i>Punica granatum</i>	Punicaceae	Nargesa/ Volangii	Seeds, Flower, Bark, Juices of fruit & bark	Tree	<ul style="list-style-type: none"> • Spasmodic • Anti-cancer • Anti-diabetic • Leprosy • Against tapeworm • Diarrhea • Immune-stimulatory • Anti-oxidant • Dysentery • Bronchitis • Hypertension
39. <i>Pyrus malus</i>	Rosaceae	ManRa	Fruit	Tree	<ul style="list-style-type: none"> • Tonic • Constipation • Astringent • Reduce cholesterol level • Heart tonic • Laxative
40. <i>Ricinus communis</i>	Euphorbiaceae	Randah	Leaves, Seeds & Root	Shrub	<ul style="list-style-type: none"> • For diseases of liver, spleen & sciatica • Induction of milk • Cough • Bronchial asthma • Abdominal pain • Intestinal worm • Piles • Constipation
41. <i>Salix alba</i>	Salicaceae	Walla	Leaves	Tree	<ul style="list-style-type: none"> • Heart burn • Headache

					<ul style="list-style-type: none"> • Arthritis • Analgesic • Anti-rheumatic • Astringent • Stomach problem • Reduce inflammation • Ear pain
42. <i>Schinus molle</i>	Anacardiaceae	Toor maruch	Bark, Fruit & Leaf	Tree	<ul style="list-style-type: none"> • Diuretic • Toothache • Menstrual disorder • Anti-bacterial • Anti-septic • Digestive • Stimulant • Wound healer • Antiviral
43. <i>Tamarix aphylla</i>	Tamaricaceae	Ghaz	Bark, Leaves	Tree	<ul style="list-style-type: none"> • Tonic • Astringent • Aphrodisiac
44. <i>Solanum nigrum</i>	Solanaceae	Gorgorii	Leaves, Barries and Flower	Herb	<ul style="list-style-type: none"> • Fever • Skin problems • Tumor • Inflammation • Ulcer • Ring worm • Earache • Mouth wash • Hepatitis • Liver diseases
45. <i>Vitex negundo</i>	Verbenaceae	Marmandi	Leaves, Branches , Root and Flower	Shrub	<ul style="list-style-type: none"> • Rheumatic • Swelling of joints and in sprains • Anti inflammatory • Skin infection • Analgesic • Antifungal • Antibacterial • Fever • Diarrhea • Injuries • As tooth brush • Back pain
46. <i>Vitis vinefera</i>	Vitaceae	Mellawa	Leaves, Stem, Seeds and Flower	climber	<ul style="list-style-type: none"> • Tuberculosis • Constipation • Thirst • Cancer • Cholera • Small pox • Nausea • Skin eye infection • Kidney and liver diseases

					<ul style="list-style-type: none"> • Anemia
47. <i>Withania coagulans</i>	Solanaceae	Shapianga	Fruit & leaves	Shrub	<ul style="list-style-type: none"> • Cooling agent • Constipation • Gastric trouble • Abdominal pain
48. <i>Withania somnifera</i>	Solanaceae	Barbaka	Leaves, Fruit Seeds and Roots	Shrub	<ul style="list-style-type: none"> • Diabetes • Panic disorder • Anticancer • Anti-stress • Anti-anxiety • Immune stimulants • Physical weakness • Anti-aging
49. <i>Xanthium strumarium</i>	Asteraceae	Shpozoka	Seeds	Herb	<ul style="list-style-type: none"> • Anti rheumatic • Appetizer • Diaphoretic • Diuretic • Laxative • Sedative • Tuberculosis • Reduce perspiration
50. <i>Zizyphus mauritiana</i>	Rhamnaceae	Bera	Leaves, Bark, Seeds and Roots	Tree	<ul style="list-style-type: none"> • Abdominal pain • Pregnancy • Dysentery • Applied on cuts • Ulcer • Fever • Biliousness • Mild laxative • Sedative • For nausea and vomiting • Eye lotions • Liver trouble • Asthma
51. <i>Zizipus nummularia</i>	Rhamnaceae	Karkana	Leaves and bark	Shrub	<ul style="list-style-type: none"> • Anthelmentic • For treatment of mental retardation

4. Conclusion

This research work conducted in Humzoni, (NWA) during session 2011-2012, showed that the numbers of plant species are less as compared to the area due to the reason of scanty rainfall, scattered population and no proper irrigation system. As there are no health facilities in the area, majority of the people used these medicinal plants traditionally as medicines for different diseases. The older people of the area knew

the importance of these plants and they transfer their knowledge to the younger. This is the first research work attempt in this area in which medicinally important plants were identified, classified and collected. The results showed that this area contain a valuable plant species which need conservation and proper management.

Table 2: List of Families Having Number of Genera

S.No	Family Name	No. Of Genera
1	Rosaceae	6
2	Solanaceae	5
3	Asclepiadaceae	3
4	Moraceae	3
5	Ruteaceae	2
6	Lamiaceae	2
7	Zygophyllaceae	2
8	Papillionaceae	2
9	Salicaceae	2
10	Rhamnaceae	2
11	Mimosaceae	1
12	Liliaceae	1
13	Asteraceae	1
14	Meliaceae	1
15	Euphorbiaceae	1
16	Fabaceae	1
17	Sapindaceae	1
18	Ephedraceae	1
19	Myrtaceae	1
20	Cucurbitaceae	1
21	Arecaceae	1
22	Oleaceae	1
23	Pinaceae	1
24	Anacardiaceae	1
25	Amaranthaceae	1
26	Cannabaceae	1
27	Capparidaceae	1
28	Elaeagnaceae	1
29	Punicaceae	1
30	Tamaricaceae	1
31	Verbinaceae	1
32	Vitaceae	1

Table 3: Percentage of Plant Parts Uses

S.NO	PART USED	NUMBERS	PERCENTAGE
1.	Leaves	21	20.8
2.	Fruit	18	17.8
3.	Root	6	5.9
4.	Bark	10	9.9
5.	Aerial parts	1	1.0
6.	Whole plant	8	7.9
7.	Seeds	8	7.9
8.	Stem	4	3.9
9.	Oil	4	3.9
10.	Pollen	2	1.9
11.	Gum	4	3.9
12.	Flower	7	6.9
13.	Chilli	1	1.0
14.	Juice	4	3.9
15.	Bulb	1	1.0
16.	Resin	1	1.0
17.	Cone	1	1.0

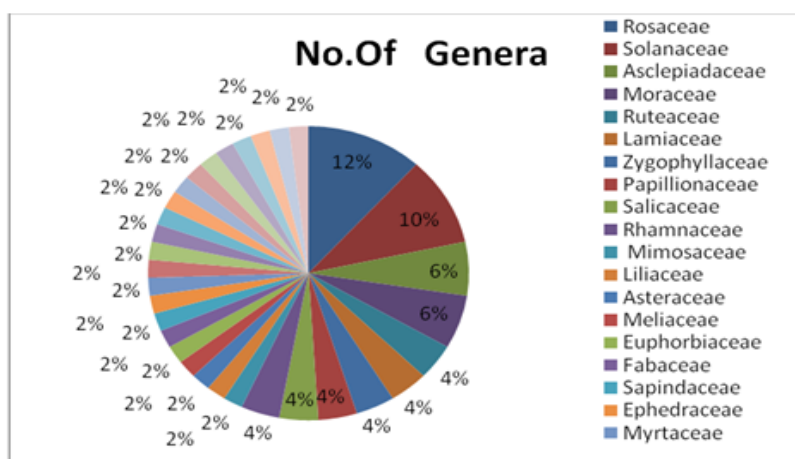


Fig 1: distribution of genera among the different families.

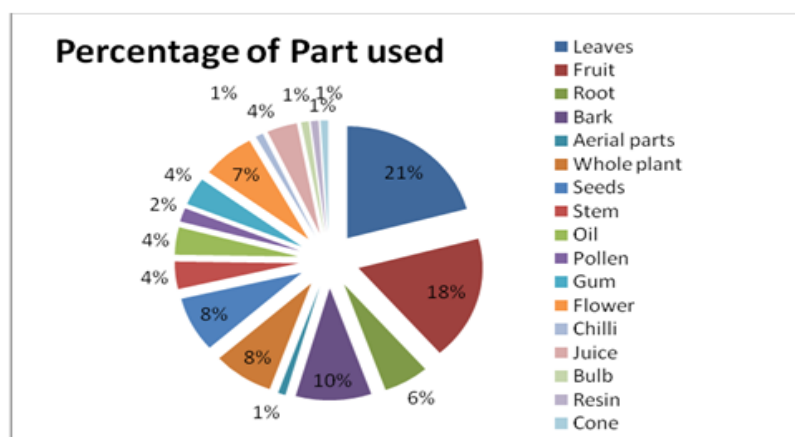


Fig 2: Percentage of Plant Parts

5. Recommendations

After study of the research area and in lights of the data, the following recommendations are suggested:

1. Conservation of the threatened medicinal plants by using modern techniques.
2. These medicinal plants should be used as income generating source and to improve the socio economic condition of the inhabitants.
3. People of the area should be motivated for the cultivation of medicinal plants.
4. Local people should be aware the regarding the importance of medicinal plants.
5. The people should be trained for collection, drying and processing of the medicinal plants.

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