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Ethnobotanical Study of Common Weed Flora of Sugarcane in District Bannu, Khyber Pakhtunkhwa, Pakistan

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The aim of this study was to record traditional medicinal uses of weed flora of sugarcane crop in district Bannu, Khyber Pakhtunkhwa during the year 2012. It was the first attempt to understand the importance of weeds with special reference to their medicinal uses in this area. Study was conducted in 25 distant villages of District Bannu in order to collect information from 100 resourceful persons including 85 men and 15 women related to the collection and use of common weeds found in the field of sugarcane. Questionnaires were developed to collect data from local Inhabitants. Total of 73 weed species belonging to 65 genera and 27 families were documented having medicinally important and are being used by the local people for treating their various diseases. Out of the 27 weed families, three were monocots (with 13 genera and 13 species) and 24 were dicots (with 52 genera and 60 species). Asteraceae contributed significant number of species (12 genera and 12 species), followed by Poaceae (11 genera and 11 species), Papilionaceae (5 genera and 5 species), Solanaceae (4 genera and 5 species), Malvaceae (4 genera and 4 species), Amaranthaceae (3 genera and 5 species), Euphorbiaceae (3 genera and 3 species), Polygonaceae (2 genera and 4 species), Plantaginaceae (2 genera and 2 species), Verbenaceae (2 genera and 2 species), Chenopodiaceae (1 genera and 3 species), and Convolvulaceae (1 genera and 2 species). The rest of the families were represented by only one species each. Data were systematically arranged in alphabetic order of botanical name, synonym, family, followed by English name, local name, part(s) used and ethnomedicinal uses. It was found that the area is rich in indigenous knowledge associated to weeds but still there is large number of underutilized weeds which could not prove useful yet. It is suggested that such type of studies should be carried out in future on utilization and conservation of indigenous knowledge of weeds.

Keyword: Ethnobotany, Weeds, sugarcane, Bannu.

1. Introduction

Bannu is a district of Khyber Pakhtoonkhwa (KPK) having total area of 1227 square kilometers. It is situated at a distance of 190 km, in the South of Peshawar and lies between 32.43o to 33.06o N and from 70.22o to 70.07o E. It is located in the heart of the southern region with its boundaries touching the districts of Karak, Lakki Marwat and the North, South Waziristan Agencies. Almost all the people of this district speak Pashto and of them live in villages and only small number in urban areas. Important crops of district Bannu are wheat, maize, rice, gram, sugarcane and fodder and grain sorghum. Local people of the area are very much close to

natural vegetation, both in their habitat and livelihood. So, they have empirical observations of nature and by communicating with other people of their culture, they get indigenous knowledge about the local plants generation after generation from their ancestors. Similarly, local people in various villages of the area gather native medicinally important weeds in different seasons of the year for personal use and whole community uses within the area. So, in this way, the ethnomedicinal knowledge of weedy plants is interactively linked to local culture and history^[2]. Various studies have been carried out from the world on medicinal use of plants by various indigenous communities^[10,18,19,34,16,29].

In Pakistan the field of ethnobotany is quite virgin and is going to be matured with the passage of time and various studies have been reported from various parts of the country^[8,12,22,23]. reported the ethnobotanical study of widespread weeds of Shawa valley, district Swat. Similarly^[1], also reported the ethnobotanical information of 15 common weeds in district Attock. Among these medicinal plants *Acorus calamus* used as stimulant, emetic, carminative and as expectorant. Similarly *Dioscorea deltoidea* and *Xanthoxylum armatum* are used for different diseases^[35]. Goodman & Ghafoor^[6] conducted ethno botanical study in Balochistan province of southwestern Pakistan. They collected information of about 114 plant species used by the village dwellers for nutritional, utilitarian and medicinal purposes. Malik *et al.*, (1990) gathered some preliminary ethnobotanical information from six districts of Balochistan. Leopratti & Lattanzi^[14] studied 27 medicinal plants ethno botanically in Makran, South Waziristan. Shinwari & Khan (2000) conducted ethno botanical research project in Margalla Hills National Park to record the native uses of these herbs and thus wrote a series of papers on medicinal plants of Pakistan.

However, the study area has never been explored before ethnobotanically, so it was felt worthwhile to record folk knowledge of common weed flora of sugarcane used by the inhabitants of district bannu, khyber pakhtunkhawa, pakistan. It was found that Ethnobotanically, this area is rich in medicinal weeds and most of the people are using these weeds as a primary source of health care. Annually a large number of medicinal weeds are harvested and bought by the local shopkeepers of the study area.

2. Material and Methods

Trips were arranged during the year of 2012 to 25 different sites (Table-2) of district Bannu to explore and collect ethnobotanically important weed flora found in the fields of sugarcane. Specimen Collection and preservation were made according to Standard protocols of *I Gul Jan et al.*, 1999. The collected specimens were pressed, dried, and mounted on herbarium sheets with the

help of wooden frame (for rigidity), corrugated cardboard ventilators (to allow air to flow through the press), blotter paper (to absorb moisture), and folded newspaper (to contain the plant material). Then the specimens were identified by Dr. Sultan Mehmood Wazir, department of Botany UST, Bannu Mr. Abdur Rehman, Chairman department of Botany Govt. Post Graduate College Bannu. The identification were also conformed to available literature^[33,17]. Results were rechecked and compared with literature like that of^[11,28].

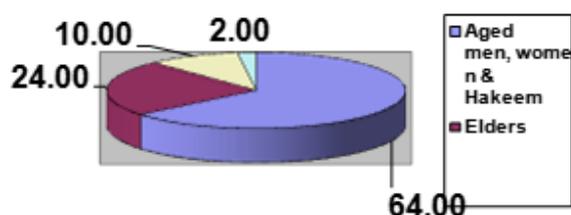
Table-2. Different sites within district Bannu from where the ethnobotanically important weed flora were collected

1- Nurar	9- Mira Khel	17-Mamash khel
2-Mandew	10Mama Khel	18-Jhando Khel
3- Mandan	11- NarJafar Khan	19-Baist Kel
4- Surani,	12- Sahmshi Khel	20-Ismial Khani
5-Bharat	13 Mira Khel	21-Bada MirAbas
6-Khujary	14-Metta Khel	22-Bazar ahmad khan
7- Kakki	15- Amandi	23Shahbaz Azmat Khel
8- Sokari,	16- Ismail Khel	24-kalla Khel
		25Manjakhel/Ghoriwala

2.1 Interviews with locals: during this survey about 100 individuals (Table 1) were interviewed through employing questionnaires. Interviewees were selected from among the locals who had knowledge about the plants or were dependent on the local resources for survival. Thus collected data on various aspects of ethnobotanical usage, e.g. local name; parts used and use categories of individual species.

Table 1: Age groups of the interviewees during the study

Age group	Percentage
10-20	02
30-45	10
45-60	24
60+	64
Total	100



3. Results and Discussion

The research work presented was initiated to get information and report the ethno- botanical knowledge of endemic medicinal weeds of sugarcane in district Bannu, khyber pakhtunkhawa, pakistan during 2011-2012. The present research paper deals with preliminary contribution to the use of medicinal plants by the people of District Bannu. As a whole about 73 weeds plant belonging to 27 families were collected, documented and preserved. It is reported that there are 65 genera and 73 species belonging to 27 families. Among the 27 families there are 3 families of monocot (having 13 genera and 13 species) and 24 families of dicot (having 52 genera and 60 species).

According to percentage data (Fig. no.III) The most important family in term of species representation was Asteraceae 16.438 % (having 12 genera and 12 species), Asteraceae was followed by Poaceae 15.068 % (having 11 genera and 11 species), Papilionaceae 6.849 % (having 5 genera and 5 species), Solanaceae 6.849 % (having 4 genera and 5 species), Amaranthaceae 6.849 % (having 3 genera and 5 species) Malvaceae 5.479 % (4 genera and 4 species) Polygonaceae 5.479 % (2 genera and 4 species), Euphorbiaceae 4.109 % (3 genera and 3 species), Chenopodiaceae 4.109 % (1 genera and 3 species), Plantaginaceae 2.739 % (2 genera and

2 species), Convolvulaceae 2.739 % (1 genus and 2 species). The remaining 16 families were 1.369 % with 1 genus and 1 species each.

These collected weed species are reasonably effective remedies for different diseases such as headache (*Vitex negundo*), intestinal diseases, toothache & diabetes (*Solanum surratense*), jaundice and urinary tract (*Chenopodium album*), asthma (*Achyranthes aspera*), dysentery (*Melilotus alba*), diarrhea (*Melilotus alba*), bleeding piles (*Cynodon dactylon*), skin disorders (*Cyperus rotundus*) and cough (*Ranunculus muricatus*). It was reported by Shah *et al.*, 2006, that *Tribulus terrestris* is effective in urino-genital inflammation, *Acacia nilotica* in cancerous and syphilitic infections and *Mentha spicata* leaves powder in toothache while Ibrar reported 35 weed species of crops which are locally used by the local inhabitants of District Abbotabad for common diseases such as cough, fever, diarrhea, pain, worms and skin diseases^[7]. The knowledge about the uses of weed for different diseases as remedies is transferred orally from generation to generation, for the same purpose the present author conducted this research so that the information about these commonly used weed species and their remedies must be recorded, preserved and documented before it is lost forever.

Systematic Position	Botanical Name
1.Botanical Name	<i>Abutilon indicum</i> (L.) Sweet.
Synonym	<i>Abutilon asiaticum</i> (L.) Sweet
Family	Malvaceae
Local name	Koso beta
English Name	Country mallow
Propagation	By seeds
Part used	Leaves, bark, seeds and roots
Flowering period	Throughout the year.
Seed	Seeds are 3-5 minute hairy, black or dark brown
Medicinal uses	This plant is commonly used to expel worm. Seeds are laxative.
2.Botanical Name	<i>Achyranthes aspera</i> L.
Synonym	<i>Achyranthes argentea</i> Lam.
Family	Amranthaceae
Local name	Shapazoka
English Name	Prickly Chaff flower.
Propagation	By seeds
Part used	Root, bark, stem and leaves
Flowering period	September to November
Medicinal use	A decoction of roots is used for stomach troubles and an aqueous extract for removing of stones in the bladder. The root is astringent and their paste is applies to wounds
3.Botanical Name	<i>Achyranthes bidentata</i> Blume
Synonym	<i>Achyranthes japonica</i> (Miq.) Nakai
Family	Amaranthaceae
Local name	Shopoza beta
English Name	chaff flower/ Ox Knee
Propagation	By seeds.
Part used	Tuberous roots.
Flowering period	Aug-October
Medicinal uses	This is indicated for hypertension, confusions, sore throat and placenta retention. The decoction of leaves is used as blood purifier.
4.Botanical Name	<i>Alopecurus nepalansis</i> Trin ex. Steud.
Synonym	<i>Alopecurus aequalis</i> Sobol.
Family	Poaceae
Local name	Ozhakaye/ Khowar
English Name	Nepal Foxtail Grass
Propagation	By seeds
Part used	Root & bark, stem and leaves
Flowering period	March-April

Medicinal uses	Foxtail Grass is considered dangerous to dogs, if their seed goes in the nasal cavity than the dog started sneezes repeatedly and violently regularly hitting the nose on the floor. If the seed lodges in the paw or under the coat a lump (swelling) will form that is painful if touched.
5.Botanical Name	<i>Alternanthera sessile</i> L
Synonym	<i>Alternanthera triandra</i> Lam
Family	Amaranthacea
Local name	Ranzuka
English Name	Joyweed
Propagation	By seeds
Part used	Leaves, roots and seeds.
Flowering period	December till March
Medicinal use	The plant is used in diarrhea, skin disease and dyspepsia (heart burn) It is also used as eye washer and the extract of stem & leaves is used with ghee for treatment of snakebite.
6.Botanical Name	<i>Amaranthus blitoides</i> S. Watson
Synonym	<i>Amaranthus graecizans</i>
Family	Amranthaceae
Local name	Ranzukka
English Name	Prostrate Pigweed
Propagation	By seeds
Part used	Whole plant
Flowering period	June-July
Medicinal uses	Leaves, raw or cooked are rich in minerals & vitamins and are used as spinach.
7.Botanical Name	<i>Amaranthus viridis</i> L.
Synonym	<i>Amaranthus gracilis</i> Desf.
Family	Amranthaceae
Local name	Ranzukka
English Name	Chinese spinach
Propagation	By seeds
Part used	Whole plant
Flowering period	Throughout the year (summer)
Medicinal uses	It is mostly used as vegetables. It is used for Inflammations.
8.Botanical Name	<i>Anagallis arvensis</i> L

Synonym	<i>A. latifolia</i> Linn
Family	Primulaceae
Local name	Peze-nenya gull
English Name	Scarlet Pimpernel
Propagation	By seeds
Part used	Root & bark, stem and leaves
Flowering period	February to April
Medicinal uses	It is an old remedy for Skin itches with dry fiber like eruptions, especially of hands, fingers and palm.
9.Botanical Name	<i>Asphodelus tunifolius</i> Caven.
Synonym	<i>Asphodelus fistulosus</i>
Family	Asphodelaceae
Local name	Piozikai
English Name	Onion weed
Propagation	By seeds
Part used	Whole plant
Flowering period	November- April
Medicinal uses	Its seed is used as diuretic and applied externally to ulcer and inflamed organs while the fresh leaves are used as condiments.
10.Botanical Name	<i>Astragalus hamosus</i> L
Synonym	<i>Astragalus buceras</i>
Family	Papilionaceae/ Fabaceae
Local name	Aezikai
English Name	Milk Vetch
Propagation	By seeds
Part used	Whole plant
Flowering period	February-March
Seed	Non-endospermic
Medicinal uses	The plant is emollient (soften skin) demulcent and laxative. It is useful in treating irritation of the mucous membranes.
11.Botanical Name	<i>Avena fatua</i> L.
Synonym	<i>Avena orientalis</i> Schreb. <i>Avena sativa</i> subsp. <i>fatua</i> (L.) Thell.
Family	Poaceae
Local name	Karyarha
English Name	Wild Oat.
Propagation	By seeds

Part used	Whole plant
Flowering period	March- April
Medicinal uses	<i>Avena</i> is mostly used as a fodder. The straw also has a wide range of uses such as for fiber, paper-making and thatching while the seeds are, diuretic and refrigerant.
12.Botanical Name	<i>Brassica campestris</i> L
Synonym	Nil
Family	Cruciferae (Brassicaceae)
Local name	Woeri
English Name	Brassica
Propagation	By seeds
Part used	Leaves seed and stem.
Flowering period	February-April
Medicinal Uses	It is cooked as a vegetable or Saag. Young leaves and flowers are used as pot herbs & are laxative. Important oil is extracted from seeds which are used in cooking, massages, in the preparation of Achar and hair tonic. Seed-cakes (Khal) are given to domestic animals to increase milk production.
13.Botanical Name	<i>Boerhavia procumbens</i> Banks ex Roxb.
Synonym	<i>Boerhavia diffusa</i> ,
Family	Nyctaginaceae
Local name	Padrawash
English Name	Red Hogweed
Propagation	By seeds
Part used	Whole plant
Flowering period	September- August
Medicinal uses	The leaves of the plant are cooked as potherb (leafy vegetable) and the powder of the dried roots is snuffed in flue while the powder of the roots along with honey is given in cough and asthma. 50 ml juice of the plant is given 3 times a day in menstrual pain (dysmenorrhea).
14.Botanical Name	<i>Carduus argentatus</i> L
Synonym	<i>Carduus acicularis</i> Bertol
Family	Asteraceae
Local name	Aghzikai
English Name	Milk Thistle
Propagation	By seeds

Part used	Whole plant
Flowering period	April- May
Medicinal uses.	It protects the liver and increases breast milk production in animals.
16.Botanical Name	<i>Chenopodium album</i> L.
Synonym	<i>C. reticulatum</i> L
Family	Chenopodiaceae
Local name	Surma, Batho (Punjabi)
English Name	Wild spinach
Propagation	By seeds
Part used	Whole plant.
Flowering period	February-march.
Medicinal uses.	This plant is mostly used as vegetable. It is sweet, digestive, laxative and is used in peptic ulcer, cardiac disorder and spleen disorder. The roots are used in jaundice, urinary diseases. Fruit and root are known as antidote to snake poison.
17.Botanical Name	<i>Chenopodium ambrosioides</i> L
Synonym	<i>Teloxys ambrosioides</i> (L.) WA Weber,
Family	Chenopodiaceae
Local name	Ranzekka
English Name	Wormseed/ Mexican Tea
Propagation	By seeds
Part used	Whole plant.
Flowering period	February-March.
Medicinal uses.	The seeds are edible, and the shoots, stalks, and leaves can be eaten as greens (leafy vegetables). The Wormseed is chiefly known for its ability to expel worms (roundworms & hookworms). However, it is also used as digestive remedy and being taken to settle colic and stomach pains.
18.Botanical Name	<i>Chenopodium murale</i> L.
Synonym	<i>Chenopodium biforme</i> Nees
Family	Chenopodiaceae
Local name	Toor sorma
English Name	Nettleleaf goosefoot
Propagation	By seeds
Part used	Whole plant
Flowering period	January-July-November
Medicinal uses	

19.Botanical Name	<i>Cirsium arvense</i> (L.) Scop.
Synonym	<i>Breea arvensis</i> (L.) Less.
Family	Asteraceae
Local name	Aghzikai
English Name	Field Thistle, Green Thistle
Propagation	By seeds
Part used	Whole plant
Flowering period	January-July-November
Medicinal uses	Young plant is used as fodder by the people but the mature plant is used as fuel.
20.Botanical Name	<i>Convolvulus arvensis</i> L.
Synonym	<i>Convolvulus ambigens</i> House
Family	Convolvulaceae
Local name	Parvathiy.
English Name	field bindweed
Propagation	Seeds
Part used	Shoot and leaves.
Flowering period	March & April October & November
Medicinal use	Commonly used as fodder and Saag. Also given to children for removal of worm from Intestine. It is also appropriate in skin disorders. Its extract is used in treatment of skin disorder.
21.Botanical Name	<i>Convolvulus spicatus</i> Hallier f.
Synonym	Nil
Family	Convolvulaceae
Local name	Parvathiy.
English Name	Bindweed
Propagation	Seeds
Part used	Shoot and leaves.
Flowering period	March to June
Medicinal use	Commonly used as fodder. It is beneficial in the constipation and piles.
22.Botanical Name	<i>Conyza bonariensis</i> (L.) Cronquist
Synonym	<i>Conyza ambigua</i> DC
Family	Astraceaceae
Local name	Shpelaye

English Name	fleabane, hairy horseweed
Propagation	Seeds
Part used	Shoot and leaves.
Flowering period	April to November
Medicinal use	<i>Conyza bonariensis</i> plant is boiled in water to make steam which is used for sweat lodges or burned to create a smoke that warded off insects. Also taken as a snuff to stimulate sneezing. Infusion of the plant is nowadays used in the treatment of gastro-intestinal problems such as diarrhoea and dysentery also applied externally to treat bleeding piles. Also recommended in the treatment of painful menstruation.
23.Botanical Name	<i>Corchorus depressus</i> (L.) Stocks
Synonym	<i>Corchorus antichorus</i> Raeusch
Family	Tiliaceae
Local name	Koso beta
English Name	Corchorus
Propagation	By seeds
Part used	Leaves, roots and seeds.
Flowering period	February- November.
Medicinal use	The leaves of the plant are used as an emollient and cooling agent while the decoction of seeds and leaves along with milk and sugar is a good tonic. Its mucilage is used for the treatment of healing wounds.
24.Botanical Name	<i>Cynodon dactylon</i> (L).Pers
Synonym	<i>Panicum dactylon</i> L.
Family	Poaceae
Local name	Barowa
English Name	Dhub or Barmuda grass,
Propagation	By roots and vegetative methods.
Part used	Whole plant.
Flowering period	June-July
Medicinal use	The plant is astringent, cooling, haemostatic, tonic and is used stop bleeding or in wound healing. When someone cut his finger then the fresh leaves and stem are grinds in mouth and then applied on wound to stop bleeding. Its juice is mixed with milk for curing bleeding piles, irritation of urinary tract and for vomiting. Sometime it is used with rose-flower in treatment jaundice, piles and dysentery.
25.Botanical Name	<i>Cyperus rotundrus</i> L.
Synonym	<i>Cyperus tetrastachyos</i> Desf
Family	Cyperaceae

Local name	Delloca
English Name	Nut grass, coco grass.
Propagation	By vegetative methods.
Part used	Whole plant (Rhizome)
Flowering period	April to October
Medicinal use	The rhizome gives positive result in the treatment of menstruation, vomiting and diarrhea. Also used as a laxative for cattle. Modern alternative medicine recommended for treating nausea, for pain reduction, fever, inflammation, for muscle relaxation and many other disorders.
26.Botanical Name	<i>Dichanthium annulatum</i> Stapf
Synonym	<i>Andropogon annulatus</i> Forsk.
Family	Poaceae
Local name	Shpozhoka barrowa
English Name	sheda grass, ringed dichanthium
Propagation	Seed
Part used	Whole plant
Flowering period	March-November
Medicinal use	It is used as Fodder, also suitable for silage and hay if cut earlier then flowering.
27.Botanical Name	<i>Echinops echinatus</i> Roxb
Synonym	Nil
Family	Asteraceae
Local name	Catsori
English Name	Camel Thistle
Propagation	Seed
Part used	Whole plant
Flowering period	December- January
Medicinal use	The plant is diuretic, ophthamia, hysteria and nerve tonic. The whole plant is used against skin itching. Recipe: Boil 2 kg of plant in 12-15 liters of water for few hrs then bath with that water, after waiting for cooling, twice a day for 3-4 days.
28.Botanical Name	<i>Echinochloa crus-galli</i> (L) P.Beauv.
Synonym	<i>Panicum crus-galli</i> L.
Family	Poaceae
Local name	Shenepa
English Name	Common barnyardgrass

Propagation	By seeds
Part used	Root, stem and leaves
Flowering period	August to October
Medicinal uses	Commonly used as a fodder. While the young shoots stem tips, seeds and the heart of the culm, raw or cooked, are nutritive. The plant is sometimes used for the reclamation of alkaline & saline areas.
29.Botanical Name	<i>Eclipta alba</i> (L.) Hassk.
Synonym	<i>Eclipta prostrata</i> L
Family	Asteraceae
Local name	Theriza
English Name	False Daisy
Propagation	Seeds and Veg, method
Part used	Root, stem and leaves
Flowering period	July - October.
Medicinal uses	Its leaf extract is considered a powerful liver tonic. It is reported to improve hair growth and colour. A black dye obtained from this plant which is used for dyeing hair, external uses on the scalp to stop hair loss. <i>Eclipta alba</i> also has traditional external uses in athlete foot and dermatitis.it is an important remedy for snake venom and anti-inflammatory. The Juice of this plant is used in liver diseases.
30.Botanical Name	<i>Eleusine indica</i> (L.) Gaertn
Synonym	Eleusine coracana L
Family	Poaceae
Local name	Howar or chezi
English Name	Crow foot grass or dog's tail grass
Propagation	By seeds
Part used	Leaves, roots and seeds.
Flowering period	June- August
Medicinal use	Mostly used as fodder. It is considered to be diuretic, laxative and is good for liver. It is also used against hypertension, influenza, and retention of urine.
31.Botanical Name	<i>Enneapogon avenaceus</i> (Lindl.) C. E. Hubbard
Synonym	<i>Pappophorum avenaceum</i> Lindl.
Family	Poaceae
Local name	Khowar
English Name	Bottle Washers
Propagation	By seeds

Part used	Whole plant
Flowering period	In response to rain.
Medicinal uses	Commonly used as a fodder.
32.Botanical Name	<i>Erythraea ramosissima</i> DC, Prodr
Synonym	<i>Centaurium pulchellum</i> (Sw.) Druce
Family	Gentianaceae
Local name	Unknown
English Name	Slender Centaury
Propagation	Through seeds
Part used	Whole plant
Flowering period	June - October.
Medicinal uses	An infusion of the herb is used for diabetes.A decoction is used for gastric and abdominal pain, hypertention, renal colic, rheumatic pains and for the elimination of stones from the kidney and urethera; healing agent for wounds in ointments for sciatica.
33.Botanical Name	<i>Euphorbia helioscopia</i> L.
Synonym	<i>Euphorbia dominii</i> Rohlana
Family	Euphorbiaceae
Local name	Purporai
English Name	Spurge
Propagation	Seed
Part used	Whole plant
Flowering period	June-July
Medicinal use	Latex of the plant is poisonous and cause irritation, cathartic and swelling on skin while its juice is used to treat eruptions.
34.Botanical Name	<i>Fumaria indica</i> Hausskn
Synonym	<i>Fumaria parviflora</i> Hook. f.
Family	Fumariaceae
Local name	Sewa
English Name	Beggary/ Wax dolls
Propagation	By seeds
Part used	Root, stem and leaves
Flowering period	March- June
Medicinal uses	It is mostly used as fodder but laxative, diuretic and also affective in skin diseases, body pain, and heartburn.

35.Botanical Name	<i>Galium tricorne</i> Stokes.
Synonym	<i>Galium tricornutum</i> L
Family	Rubiaceae
Local name	Khowra shapazha/ yogurt herb
English Name	Bedstraw, Corn-cleavers
Propagation	Seed
Part used	Whole plant
Flowering period	February- April
Medicinal use	It has antimicrobial activities.
36.Botanical Name	<i>Helianthus annus</i> L.
Synonym	Nil
Family	Asteraceae
Local name	Maera stargay gul.
English Name	Sun flower
Propagation	By seeds and vegetative method.
Part used	Whole plant.
Flowering period	May-July
Medicinal use	The roots are used for strengthening the teeth while the leaves are used in ulcer, malarial fever, wounds and brining sensation. The flowers are used in skin diseases, inflammation, ulcer & anemia. The seeds this plant is expectorant and diuretic and is useful in cough. Its seed yield edible oil which is used for cooking and in “ghee” industry while roasted seeds are eaten to get better memory. It is also cultivated as an ornamental plant.
37.Botanical Name	<i>Hibiscus trionum</i> L.
Synonym	<i>Hibiscus ternatus</i> Cav.
Family	Malvaceae
Local name	Unknown
English Name	Flower-of-an-Hour
Propagation	By seed
Part used	Root, stem and leaves
Flowering period	June - September.
Medicinal uses	Fodder and diuretic.
38.Botanical Name	<i>Lathyrus aphaca</i> L.
Synonym	<i>Lathyrus segetum</i> L.
Family	Papilionaceae

Local name	Ghat mettarai
English Name	yellow pea
Propagation	Seed
Part used	Whole plant
Flowering period	February- April
Medicinal use	The seed is said to be absolutely safe and very nutritious in small quantities are edible. It is reported that the seeds have a toxic amino-acid which can cause a very serious disease of the nervous system known as 'lathyrism' if the seeds used in large quantities. The ripe seeds are also said to be narcotic while the flowers are resolvent.
39.Botanical Name	<i>Launaea procumbens</i> Pravin Kawale.
Synonym	Nil
Family	Astraceae
Local name	Piawrie
English Name	Creeping Launaea
Propagation	Seed
Part used	Whole plant
Flowering period	March-August
Medicinal use	Launaea procumbens is used in renal disorders
40.Botanical Name	<i>Leptochloa panicea</i> (Retz.) Ohwi
Synonym	<i>Leptochloa filiformis</i> (Lamarck) Palisot de Beauvois
Family	Poaceae
Local name	Shenepa
English Name	Red sprangletop, Thread sprangletop
Propagation	By seeds
Part used	Root, stem and leaves
Flowering period	August to September
Medicinal uses	It is a favorite fodder for many cattles.
41.Botanical Name	<i>Malvastrum coromandelianum</i> Garcke
Synonym	<i>Malvastrum tricuspidatum</i>
Family	Malvaceae
Local name	Koso beta
English Name	False Mallow, Broom weed,
Propagation	Seed
Part used	Whole plant
Flowering period	September- October

Medicinal use	Cooling, Emollient, Inflamed sores, Resolvent, Decoction in Dysentery
42.Botanical Name	<i>Medicago sativa</i> L.
Synonym	<i>Medica sativa</i> Lam.
Family	Papilionaceae
Local name	Malkindye.
English Name	Alfalfa, Lugerne
Propagation	By seeds and vegetative method
Part used	Leaves and young stem.
Flowering period	March-May
Medicinal use	Alfalfa is more useful as a food than as a medicine. It is a common pot herb used as a saag and fresh fodder. It has estrogenic activity, laxative, digestive and tonic and could prove helpful in treating problems relating to menstruation.
43.Botanical Name	<i>Melilotus indica</i> (L.) All.
Synonym	<i>Melilotus parviflora</i> Desf.
Family	Papilionaceae (Leguminosae)
Local name	Padena
English Name	Yellow Sweetclover or Small-Flowered Melilot
Propagation	By seeds and vegetative method
Part used	Leaves and young stem.
Flowering period	March-August
Medicinal use	It is Emollient, Astringent and Narcotic. It is used in Bowel diseases, diarrhea and swelling. Sometime also used as fodder, green manure, and as soil recovery of saline soils.
44.Botanical Name	<i>Nicotiana plumbaginifolia</i> Viv.
Synonym	<i>Nicotiana bigelovii</i> (Torr.) Wats.
Family	Solanaceae
Local name	Tammakai
English Name	curled-leaved tobacco
Propagation	By seeds
Part used	Whole plant
Flowering period	March to Aug.
Medicinal uses	Mostly used as Fodder. It was smoked by some people in the past.
45.Botanical Name	<i>Oxalis corniculata</i> . L
Family	Oxalidaceae
Local name	Tarveka, Khatti-boti (Urdu)
English Name	Yellow sorrel

Propagation	By seeds
Part used	Whole Plant.
Flowering period	March to December
Medicinal use	Leaves of this plant are eaten uncooked by the children or eaten as chutney as is considered to purify the blood. The leaves juice is also applied to open wounds and healing fracture bones.
46.Botanical Name	<i>Phyla nodiflora</i> Linn.
Synonym	<i>Lippia nodiflora</i> .
Family	Verbenaceae
Local name	Known
English Name	Frog fruit
Propagation	By seed
Part used	Leaves
Flowering period	Throughout the year.
Medicinal uses	Leaves and young shoots are used in curing indigestion in children while its decoction is believed as cooling agent and demulcent in cases of venereal diseases. Leaves are used as anti-dote for snake bite and the whole plant is used for hepatitis as well as against abscess.
47.Botanical Name	<i>Phalaris minor</i> Retz.
Synonym	<i>Phalaris brevis</i> Trin.
Family	Poaceae
Local name	Bashtha
English Name	Lesser canarygrass
Propagation	By seeds
Part used	Whole plant.
Flowering period	June-July.
Medicinal uses	It is used as forage for livestock and birdseed, but it is also poisonous to some mammals.
48.Botanical Name	<i>Phyllanthus niruri</i> L.
Synonym	<i>Phyllanthus amarus</i> <i>P.fraternus</i> Webster
Family	Euphorbiaceae
Local name	Nasoor
English Name	Stonebreaker
Propagation	By seeds
Part used	Whole plant.

Flowering period	January-Feb
Medicinal use	The fresh root of the plant is used for the cure viral hepatitis. It is also used as diuretic in oedema, to increase appetite and to reduce inflammations.
49.Botanical Name	<i>Physalis angulata</i> L.
Synonym	<i>Physalis lanceifolia</i> Nees
Family	Solanaceae
Local name	Hotelie
English Name	Cape gooseberry, wild tomato.
Propagation	By seeds and vegetative method.
Part used	Whole plant
Flowering period	January-Feb
Medicinal use	<i>Physalis angulata</i> fruit are used for treating jaundice. The leaves are used to cure other diseases such as sores, ulcers, abdominal pain, fractures, to facilitate childbirth, to treat infertility in women, dengue fever and to strengthen the heart. Roots are used to reduce fever. It also has anti-inflammatory, antibacterial, antitumour, hypertensive, antibody enhancement and antiviral properties.
50.Botanical Name	<i>Plantago lanceolata</i> L.
Synonym	<i>Plantago altissima</i> L.
Family	Plantaginaceae
Local name	Aspeghol
English Name	Ribwort plantain,
Propagation	By seeds
Part used	Root & bark, stem and leaves
Flowering period	March to Aug.
Medicinal uses	Used locally as a bones/wound healer, expectorant, antidiarrheal and is used to relief irritable bowel.
51.Botanical Name	<i>Poa bulbosa</i> L.
Synonym	<i>Poa brizaeformis</i> Trab.
Family	Poaceae
Local name	Bagastha
English Name	Bulbous Meadow Grass
Propagation	By seeds an veg. method
Part used	Whole Plant.
Flowering period	April- July
Medicinal use	It is mostly used as a fodder.

52.Botanical Name	Polygonum barbatum L.
Synonym	<i>Persicaria barbata</i> (L) H.Hara
Family	Polygonaceae
Local name	Khowar
English Name	Small Knotweed
Propagation	By seeds
Part used	Root, stem and leaves
Flowering period	June-December
Medicinal uses	It is carminative and parasiticide The seeds are used to reduce the griping pains of colic, the root is astringent and cooling while a paste of the root is used externally to cure scabies.
53.Botanical Name	<i>Polygonum biaristatum</i> Aitch & Hemsl
Synonym	Nil
Family	Polygonaceae
Local name	Howar
English Name	knotweed, knotgrass,
Propagation	By seed and vegetative method
Part used	Whole plant
Flowering period	July-Oct
Medicinal use	Mostly used a remedy for neuralgia (pain innerves), and to treat urinary tract infections or to treat gonorrhoea (burning with urination and penile discharge in man while vaginal discharge and pelvic pain in female)
54.Botanical Name	<i>Polygonum plebejum</i> R. Br., Prodr.
Synonym	<i>Polygonum herniarioides</i> Spreng.
Family	Polygonaceae
Local name	Khowar
English Name	Small Knotweed
Propagation	By seeds
Part used	Root, stem and leaves
Flowering period	June-December
Seed	Many small seeds are produced.
Medicinal uses	It is reported to be astringent, carminative and parasiticide. The Powdered of the herb is used internally in pneumonia while roots in bowel complaints. Young tender leaves and shoots are cooked as a vegetable by some people.
55.Botanical Name	<i>Portulaca oleracea</i> L.

Synonym	Nil
Family	Portulacaceae (Aizaoaceae)
Local name	Woorkhora.
English Name	Garden purslane.
Propagation	By seeds and vegetative method.
Part used	Whole plant
Flowering period	May-June.
Medicinal use	The whole plant, except the root, is used as antibacterial, anti-inflammatory and anthelmintic. The juice extracted from 100g of fresh plant are diluted with water and serves as an anthelmintic and ascariasis. It is refrigerant, laxative and alterative, also used in lower abdomen and urinary tract problems.
56.Botanical Name	<i>Ranunculus muricatus</i> L.
Synonym	Nil
Family	Ranunculaceae
Local name	Zeiarhgulai
English Name	Spiny fruit buttercup
Propagation	By seeds.
Part used	Whole plant
Flowering period	March- April
Medicinal use	
57.Botanical Name	<i>Ricinus communis</i> Linn.
Synonym	Nil
Family	Euphorbiaceae
Local name	Rannd
English Name	Castor oil tree
Propagation	By seed
Part used	Whole plant
Flowering period	Almost throughout year
Medicinal uses	Oil is extracted from the seed which has many uses as an illuminant, purgative, in industry as a lubricant and in tanning as a leather-preservative. Leaves are used as pain killer in bone strike and are also useful against bronchial pneumonia. The oil-cake is used as a fertilizer and fuel.
58.Botanical Name	<i>Rumex dentatus</i> Linn.
Family	Polygonaceae
Local name	Boshtha
English Name	Toothed dock

Propagation	By seeds.
Part used	Whole plant
Flowering period	August- September
Medicinal use	Mostly cooked as vegetables also used in Dye industry. It is astringent and is used in skin diseases.
59.Botanical Name	<i>Salvia plebeia</i> R. Brown
Synonym	<i>Salvia plebeia</i> R. Brown
Family	Lamiaceae
Local name	Khso beta
English Name	Sage weed
Propagation	By seed
Part used	Whole plant
Flowering period	Throughout year.
Medicinal uses	Flowers and leaves are used in condiment due to its sharp smell. A paste of <i>Salvia plebeia</i> is applied to wounds that occur between the toes caused by prolonged barefoot walking in muddy water. It is believed to increase sexual powers, anti-inflammatory and is used for treating urinary tract infections.
60.Botanical Name	<i>Setaria pumila</i> (Poir) Roem
Synonym	<i>Setaria pallide-fusca</i> L
Family	Poaceae
Local name	Sherakai
English Name	Garden bristle grass, hairy-tail grass, foxtail,
Propagation	By seeds
Part used	Whole plant
Flowering period	June- October
Medicinal use	It is a pretty good natural grazing species that is mostly used as fodder. In some areas this grass plays a significant role in stabilizing naked soil to protect it from wind and water erosion.
61.Botanical Name	<i>Sida cardifolia</i> L.
Synonym	<i>Sida herbacea</i> L.
Family	Malvaceae
Local name	Khoso-beta
English Name	Sida/ heart-leaf sida or flannel weed
Propagation	By seeds
Part used	Whole plant
Flowering period	Aug-Sept

Medicinal use	The plant is reputed for. The plant part is used for its tonic properties in fever, nervous disorders, colic, general debility and heart irregularity. It also reported to improves sexual strength. The roots juice is used for wounds healing while bark is effective in curing facial paralysis and the leaves are used for the blood fluctuation.
52.Botanical Name	<i>Solanum nigrum</i> L.
Synonym	<i>Solanum rubrum</i> Mill.
Family	Solanaceae
Local name	Khun-se-bai.
English Name	Black night-shade.
Propagation	By seeds and vegetative method.
Part used	Fruit, Leaves and stem.
Flowering period	Throughout the year.
Medicinal use	First dry the leaves in shadow and prepare green tea from it and than take 3-4 cups in a day.
63.Botanical Name	<i>Solanum surattense</i> (Burn.) F
Synonym	<i>S. xanthocarpum</i> schrad & wendl
Family	Solanaceae
Local name	Wara-mara-ghinrhye.
English Name	Yellow-berried nightshade
Propagation	By seeds
Part used	whole plant
Flowering period	Through out the year.
Medicinal use	This plant is used for eye irritation and for abdomen pain. It is also useful in dental pain and cough. Crushed fruits are externally applied on head in melancholia and other mental disorders. Fruit decoction is used as gargle in toothache. The grinds fruits then used for pain and other internal diseases. Also used as camel's food.
64.Botanical Name	<i>Sonchus asper</i> (L.) Hill
Synonym	<i>Sonchus nymanii</i> Tineo & Guss.
Family	Asteraceae
Local name	Tharezha
English Name	Spiny Sow Thistle
Propagation	By seeds
Part used	Whole plant
Flowering period	Mostly at blooms seasons

Medicinal use	Mostly used as fodder and it is believe to increase milk in animals. The milk latex from young plant is alkaline that are used to stains clothes.
65.Botanical Name	<i>Sorghum halepense</i> (L) Pers.
Synonym	<i>Holcus halepense</i> L
Family	Poaceae
Local name	Dedom.
English Name	Johnson grass
Propagation	By seeds
Part used	Stem and leaves.
Flowering period	May- October
Medicinal use	Used as fodder for cattle but in dry places it become tough and dangerous to animals and most of cattle becomes died after eating it. It is also used for fuel purposes in houses.
66.Botanical Name	<i>Taraxacum officinal</i> Webber
Synonym	<i>Taraxacum ruderalia</i> L
Family	Asteraceae
Local name	Zachigul.
English Name	Common dandelion, blow ball
Propagation	By seeds
Part used	Flower, root and leaves.
Flowering period	March-April
Medicinal use	Root of <i>Taraxacum</i> is diuretic, tonic and laxative. The plant is a useful remedy for constant disorders of kidney and liver. It has been use for gallstones, jaundice, against tumors and other hepatic diseases. It is also an ornamental plant.
67.Botanical Name	<i>Torilis nodosa</i> (L.) Gaertner
Synonym	<i>Tordylium nodosum</i> L <i>Caucalis nodosa</i> L
Family	Apiaceae or Umbelliferae
Local name	Hoso beta
English Name	Hedge parsley
Propagation	By seed
Part used	Whole plant
Flowering period	June - August.

Medicinal uses	The seed is antifungal, anthelmintic, expectorant antiviral and tonic and is used in the treatment of forgetfulness (amnesia), pruritis (Itching), acidosis and scabies. The juice of the root is used in the treatment of indigestion (heartburn or stomach acidity)
68.Botanical Name	<i>Typha orientallis</i> J. Preslw.
Synonym	<i>T. japonica</i> .
Family	Typhaceae
Local name	Deela
English Name	Cat tail.
Propagation	By Rhizomes
Part used	Whole plant including pollens.
Flowering period	July-August
Medicinal use	It is used in hyper cholesterol and haematemesis (vomiting of blood). The inflorescence is cooked as vegetable. Flower tips are grinded, filtered, mixed with sugar and then boiled into a gel like substance which is very delicious. Sometime the grains are mixed with honey and are applied on wound to treat internal bleeding and urinary problems. Ropes have been formed from its leaves which are used in weaving "Charpais". Dried leaves are also used as fuel, in thatching roof and making baskets and mats.
69.Botanical Name	<i>Verbena officinalis</i> L.
Synonym	<i>Verbena domingensis</i> Urb.
Family	Verbenaceae
Local name	Koso beeta
English Name	Simpler's Joy, Turkey Grass, Vervain
Propagation	By seeds
Part used	Root, stem and leaves
Flowering period	June-December
Medicinal uses	The plant is considered to be anti-infectious, antibacterial, anticoagulant and antitumor. It is mostly use as an herbal tea. It is not safe to be use during pregnancy because it might cause miscarriages. Its root is used for dysentery, headaches, fever, and insufficient lactation. Decoction of 15 to 30 gm of dried material is used for dermatitis or eczema (inflammation of epidermis).
70.Botanical Name	<i>Veronica agrestis</i> L.
Synonym	<i>Pocilla agrestis</i> (L.) Fourr.
Family	Plantaginaceae
Local name	Khoso beta
English Name	Green Field-speedwell
Propagation	Through Seeds
Part used	Whole plant

Flowering period	Jan to December
Medicinal uses	The decoction of <i>Veronica agrestis</i> is used in the treatment of haemorrhage (severe bleeding from ruptured blood vessels) and dysmenorrhoea (pain during menstruation).
71.Botanical Name	<i>Vicia hirsute</i> (L.) S.F.Gray Nat
Synonym	<i>Vicia parviflora</i> Lapeyr.
Family	Papilionaceae
Local name	Mettarai
English Name	Hairy Tare, Hairy Vetch,
Propagation	By seeds
Part used	Flower, root and leaves.
Flowering period	Feb- August.
Medicinal use	The Pod/ seeds of <i>Vicia hirsuta</i> are collected from the wild and eaten cooked or roasted The leaves and shoots are used as a vegetable in Bannu. <i>Vicia hirsuta</i> is also a forage
72.Botanical Name	<i>Withania somnifera</i> (L.) DUNAL.
Synonym	Physalis somnifera
Family	Solanaceae
Local name	Shapyange
English Name	Winter cherry
Propagation	By seeds
Part used	Leaves, roots and seeds.
Flowering period	Throughout the year.
Medicinal use	An extract from boil leaves is useful against cough, fever, ulcer and painful swelling. Leaves are also used extremely as pain killer in pain and swellings. The fruit is used as remedy for toothache, and stomach problem while its seeds are used in stomach pain and digestions; and regulation of menstrual cycle.
73.Botanical Name	<i>Xanthium strumarium</i> L
Synonym	<i>Xanthium arenarium</i> Lasch
Family	Asteraceae
Local name	Shapazaoka
English Name	Common Cocklebur
Propagation	By seeds
Part used	Leaves, roots and seeds.
Flowering period	May to September.

Medicinal use	The fruits of <i>Xanthium strumarium</i> are given in small does of half to one ounce are used as tonic, cooling, demulcent, in chronic malaria, and urinary diseases. The herb is reported to be used in snake bite also. The pollen of <i>Xanthium strumarium</i> has been found to cause asthma in sensitive persons.
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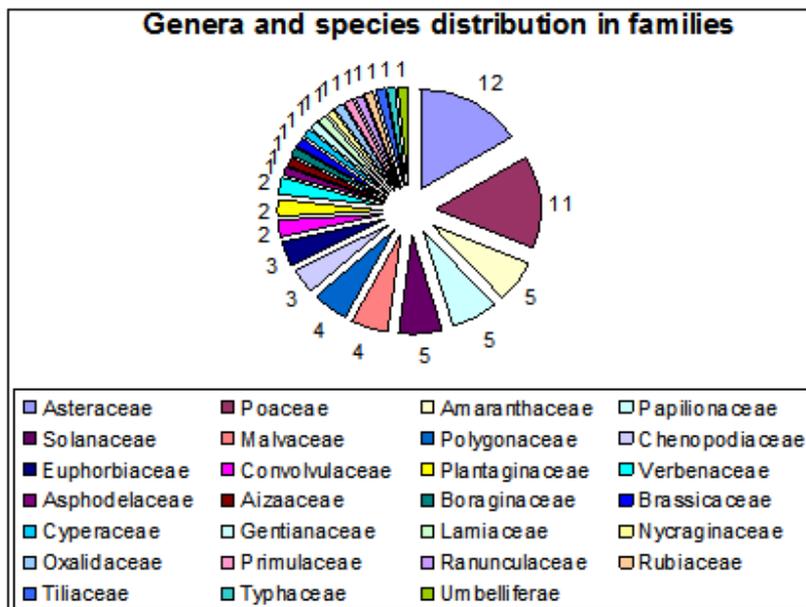


Fig 2: Dominant families of medicinal weeds in terms of number of species occupied

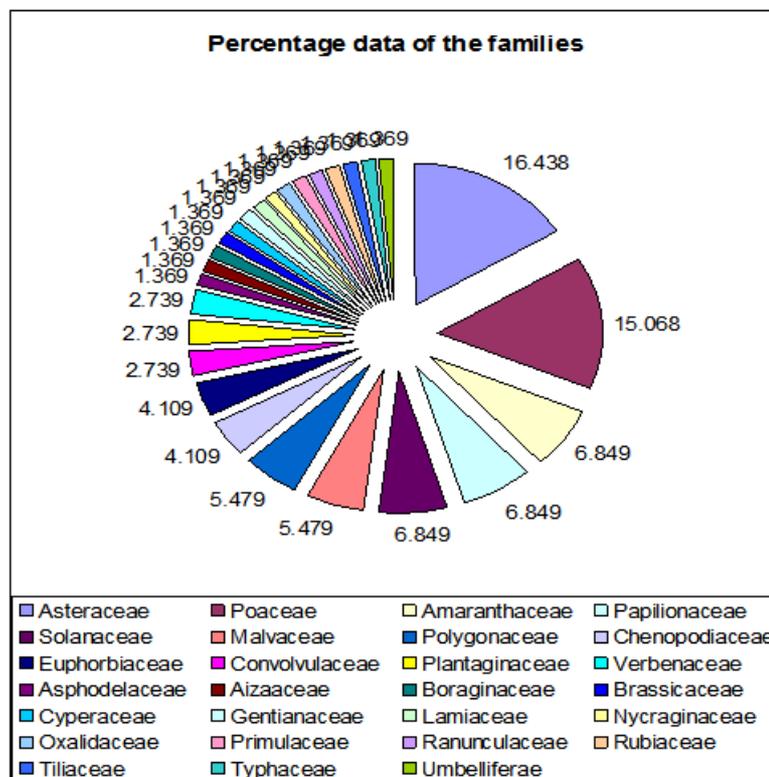


Fig 3: Graphic representation of Percentage data of the families.

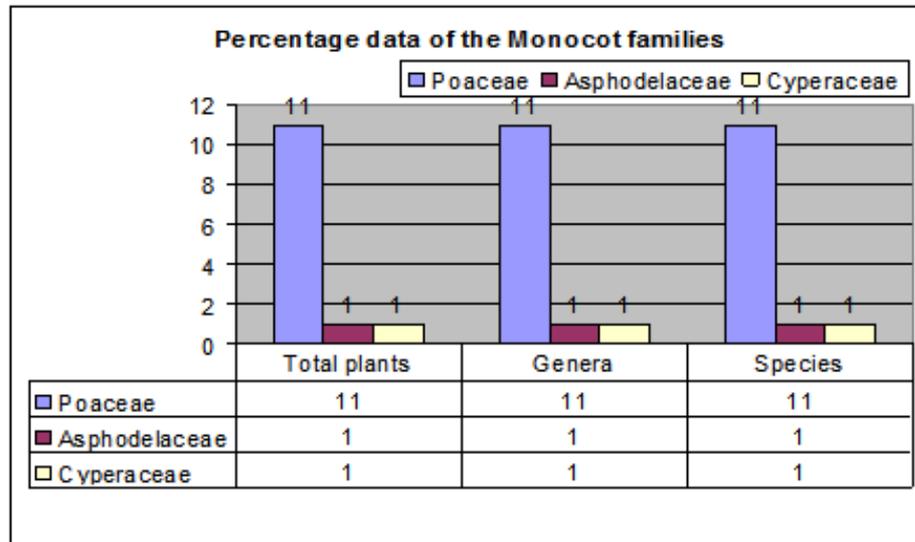


Fig 4: Graphic representation of Percentage data of Monocot families

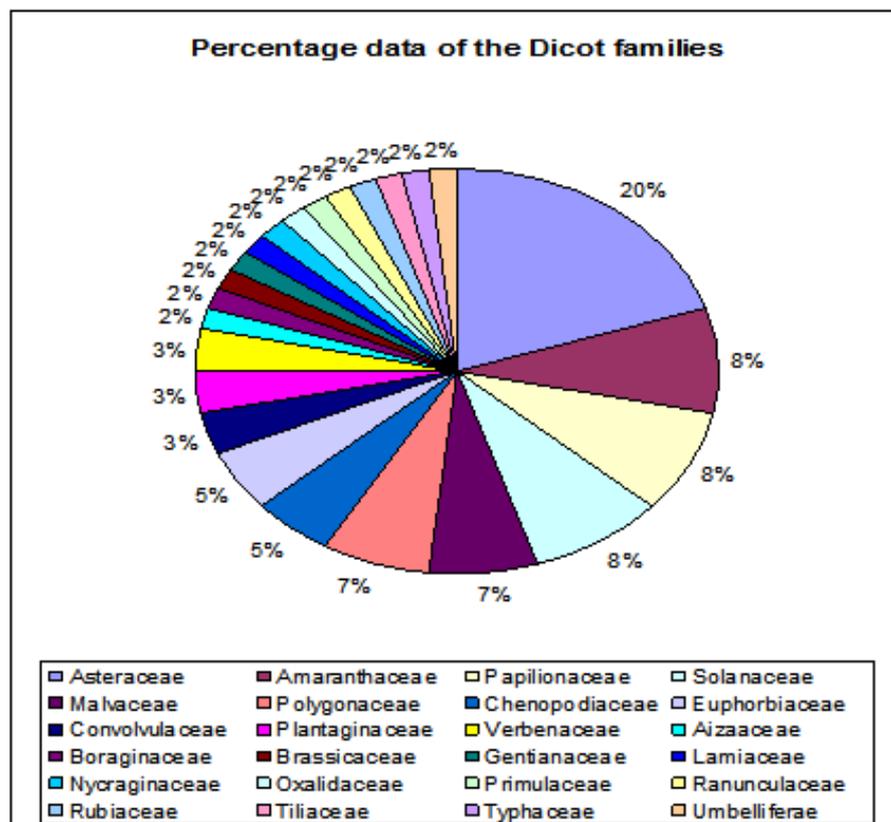


Fig 5: Percentage data of the Dicot families

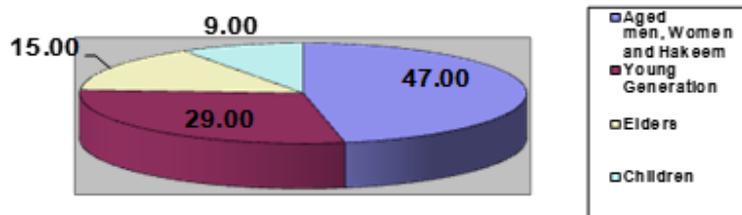


Fig VI: Percentage Utility of studied plants

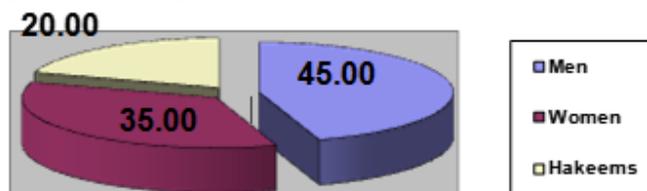


Fig VII: Age wise traditional knowledge

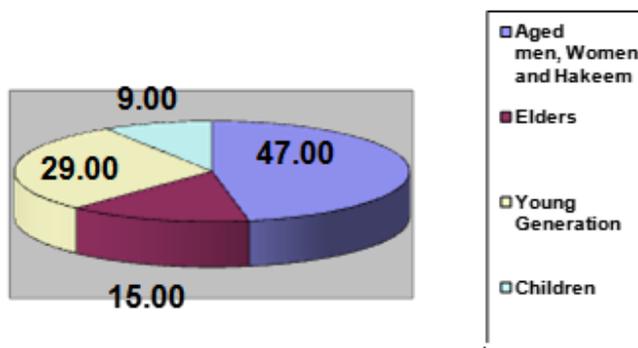


Fig 7: Age wise percentage of medicinal plants utilization

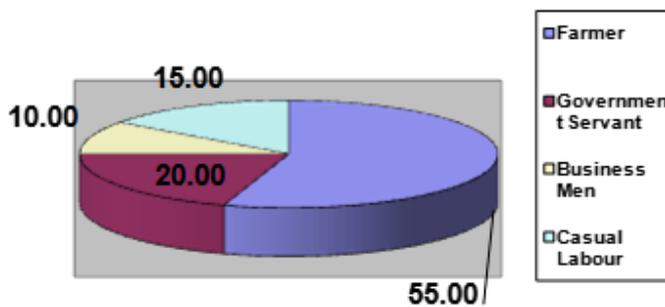


Fig 9: Percentage of Profession people interview

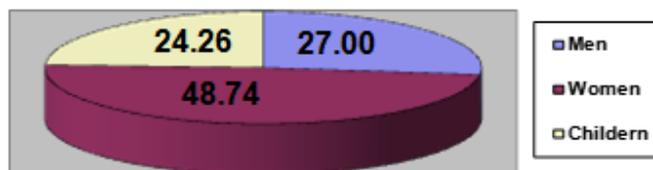


Fig 10: Gender wise percentage of medicinal plants collectors

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