



Ethnoveterinary plants used for animal cure in District Charsadda, Khyber Pakhtunkhwa (Pakistan)

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Abstract: The present study was conducted to evaluate the ethno-veterinary medicinal plants traditionally used for curing of animals in district Charsadda. Farmers in most of the villages in District Charsadda treat the animals using local plants and because of poverty, they do not depend on English medicines. Survey was carried out and information was collected from local peoples that most of them were farmers. Questionnaires were asked from 40 informants of various villages. A total of 60 plants belonging from total 34 families were collected from district that local people use for Ethnoveterinary purpose (EVP). Most commonly used parts of ethnoveterinary plants are Fruits 14 (8.4%), leaf and seeds 12 (7.2%), Whole plant 6 (3.6%), bark 4 (2.4%), Rhizome 3 (1.8%), Flower, bulb, oil and latex 2 each of one is (1.2%) and stem are 1 (1.6%). It was also observed that old people from age of 75-80 have most knowledge about the ethnoveterinary plants. Solanaceae is the highest family in the study area involved in curing of different ethnoveterinary medicines' preparations. It was also observed that skin diseases are common in the area followed by weakness, diarrhea, shortage of milk and death during birth is very rare in District Charsadda.

Key Words: District Charsadda, EVP, Questionnaires, Skin diseases

INTRODUCTION

Charsadda, located in the west of Khyber Pakhtunkhwa province is 17 miles away from the provincial capital Peshawar. The district lies in 71° 28' 13" to 71° 56' 12" East longitude and 34° 2' 53" to 34° 27' 34" North latitude (Fig.1). The total area of the district is 996 square kilometers. Charsadda is situated very close to the Indus River at the area very fertile for agriculture. Nearly 80% of the world populations rely on the use of traditional medicines to meet their primary health care needs (Sandhya *et al.*, 2006).

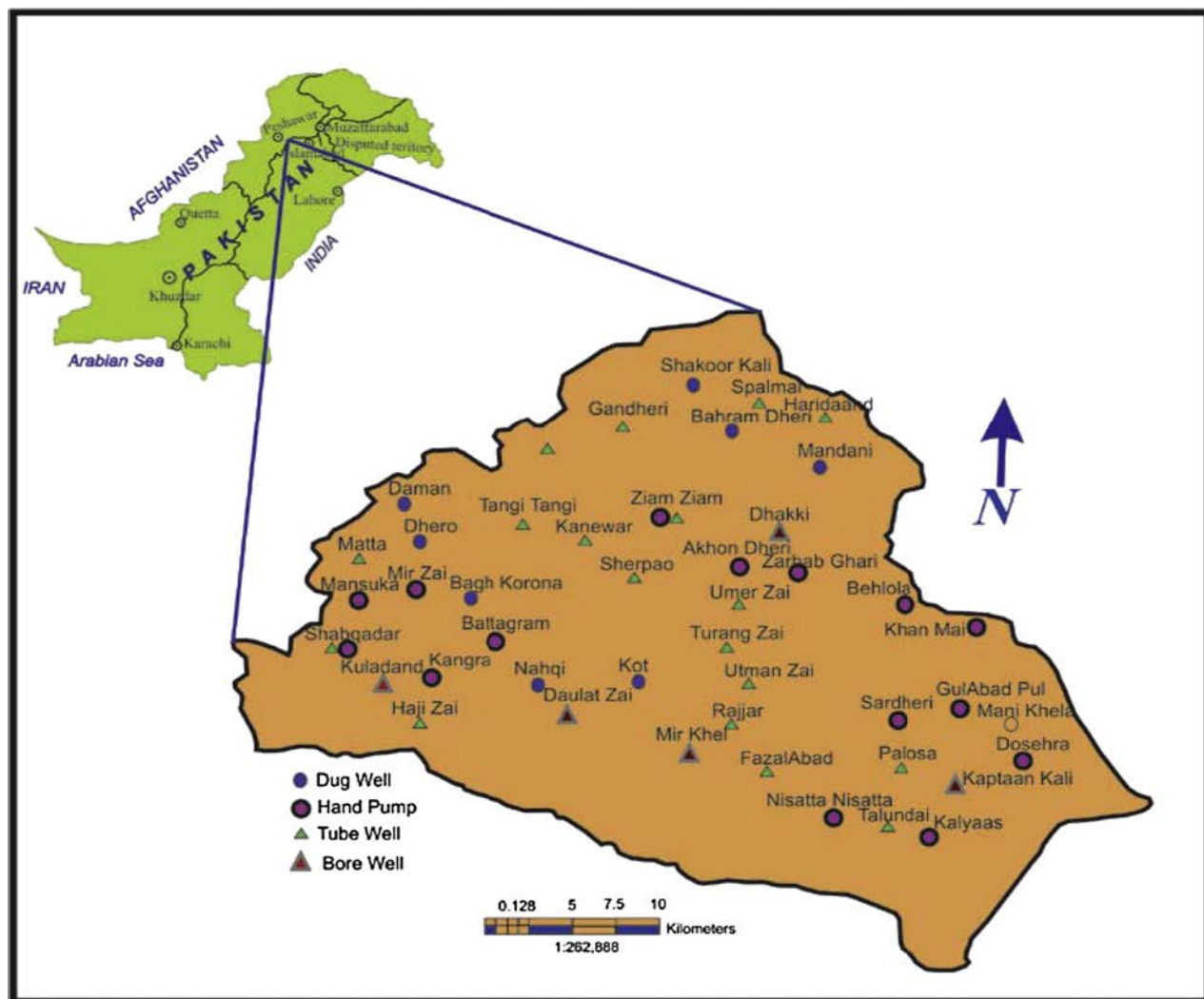


Fig.1. Map of tehsil Shabqadar district Charsadda

Ethnoveterinary medicine (EVM) is defined purely as the medicines that livestock keepers especially farmers are using now, in case of English drugs (Mathius-Mundy & McCorkle, 1989). In Pakistan just about 68% population exists in rural areas and is directly or indirectly connected with agriculture for their living (Anonymous, 2003-04). It is estimated that about 53 million people are supporting their livelihood through mistreatment of livestock (Sindhu *et al.*, 2012). Pakistan has a high number 31.8 million heads of cattle and about 29 million heads of buffalos (*Bubalus bubalis*). Pakistan is the 4th milk producing country and 30 million tons of milk is produced annually (Anon., 2007-2008). Hence, production is two-three liters per animal/per day. Unfortunately, nutritional and management practices and genetic problems are affecting the milk production. Due to the high rate of modern medicines, the poor farmers are unable to pay the cost and they are fascinated towards the traditional medicines (Dilshad *et al.*, 2010). The farmers which have a high knowledge about the local plants, they use the traditional recipes which are easily available source for the solution of their problems (Sindhu *et al.*, 2012). Pakistan needs to give a very little consideration on documentation of plants used as veterinary medicines and there is an enormous need to document this knowledge (Shah *et al.*, 2012). Since ancient times, plants have been used for the treatment of different diseases by man and animals. There are numerous plants which have been described in literature for their

medicinal importance (Akhtar *et al.*, 2000). For example, *Caesalpinia crista*, *Melia azedarach*, *Saussurea lappa*, *Moringa oleifera*, *Trachelospermum jasminoides*, *Butea frondosa* etc. have been pretty commonly used (Nadkarni, 1954). The fruit of *Mallotus philippinensis* has been used as an anthelmintic, cathartic, aphrodisiac, lithotomic and styptic. It has also been used in external applications for the control of parasitic infections of the skin, as an antiseptic for ears and systemically for urinary disorders (Chopra *et al.*, 1956; Ikram & Hussain, 1978; Satyavati *et al.*, 1987). Seeds of *Butea superba* are widely used as soothing and anthelmintic in the indigenous system of medicine (Charka, 1948; Chopra *et al.*, 1958). Various parts of *Lagenaria siceraria* have been used for different diseases e.g. flesh of its fruit to pleasure cough (Nadkarni, 1954; Ahmed, 1965), leaves are used for jaundice (Chopra *et al.*, 1956; Said, 1969).

Ethnoveterinary plants play a vital role especially in the developing countries for animal health care by locally formers. A significant role of traditional medicines is to take advantage from local plants, which is used for different common diseases i.e. mild diarrhea, skin diseases, intestinal worms, wounds and reproductive disorders (Martin *et al.*, 2001). Ethnoveterinary knowledge like other traditional knowledge is transferred from generation to generation because older people have command in this but they are dying and younger generation fail to get this knowledge from older people (Tabuti *et al.*, 2003). The medicinal plants are in danger due to reason of high deforestation rates, hotels, homes and roads which are made on hills for this purpose cause cutting forests, and overexploitation. Documentation of ethnoveterinary plants is very necessary that knowledge could be preserved; they may help also to decrease in control of livestock diseases (Matekaire & Bwakura, 2004). The objective of this study was to collect information about the most widely used ethnoveterinary plants as analogue to English medicine in Distt: Charsadda for the treatment of domestic animals.

Materials and Methods

The area was visited for collection of plants used for cure of ethnoveterinary. Regular trips were arranged of different study areas from April 2016 to November 2016. Data were collected from 15 villages of District Charsadda i.e. Mondezai, Merzai, Molakheil, Kotak, Hasanzai, Srikh, Shabqadar, Matta, Battagram, Umarzai, Tangi, Shakoor kali, kangra, Sherpo and Daman. We took information from local people and noted them. A total of 40 informants were selected for interview with their ages ranging from 25-80 years with age percentage 25-30=6 (15%), 30-42=8 (20%), 42-50=7 (17%), 50-75=11 (27%) and 75-80=8 (20%). A questionnaire was taken in local language (Pashto) for uses of plants related to the topic. Data about treatment of diseases, parts used, recipes, methods and any noticeable side effects were collected. Photos were taken through camera of medicinal plants. The collected plants were dried then pressed. After pressing, the specimen were pasted on herbarium sheets. The plants were also arranged alphabetically along with their scientific name, local name, family name and part used. Literature was studied and specimens of medicinal plants were identified according to Nasir & Ali (1970-1989); Ali & Nasir (1991-1993) and Ali & Qaiser (1995-2015). The specimens on herbarium sheets were placed in the Department of Botany herbarium at Hazara University Mansehra.

Result and Discussion

Study was conducted for the purpose of ethnoveterinary plants used by the local peoples. During the study, it was concluded that 60 plants belonging to various 34 families which are potentially used by people in local area for cure of different animal diseases (Table 1). Most of them are skin diseases of animals which are mostly common in the area followed by diarrhea, decrees of milk day by day and increase of death rate of cows and buffalos during pregnancy. Questionnaires exposed that 20% of traditional knowledge comes from above age of 75-80. While 27% comes from age of 50-75, 7% comes from age of 42-50, 20% above from ages of 30-42 and only 6% comes from young one at age of 25-30 (Fig 2). It was also observed Fruits are mostly used part in District Charsadda 14 (8.4%), leaf and seeds 12 (7.2%), Whole plant 6 (3.6%), bark 4 (2.4%), Rhizome 3 (1.8%), Flower, bulb, oil and latex 2 each of one is (1.2%) and stem are 1 (1.6%) used by local peoples (Fig 3). The identified 60 plants consisting 34 families were collected from the area. Highest no. of families is Solanaceae having 7 species followed by Apiaceae and Poaceae 4 species, Brassicaceae, Moeaceae and Papilionaceae 3

species, Alliaceae, Anacardaceae, Boraginaceae, Fabaceae, Meliaceae, Rosaceae, Rutaceae, Zingiberaceae and Zygophyllaceae 2 species, Amaranthaceae, Asclepiadaceae, Berberidaceae, Caesalpinaceae, Canabaceae, Convolvulaceae, Euphorbiaceae, Flacourtiaceae, Laminaceae, Liliaceae, Linaceae, Malvaceae, Papaveraceae, Pedaliaceae, Piperaceae, Rhamnaceae, Tamaricaceae and Theaceae having one specie respectively (Fig 4). It was also observed in the local area most of the people living below poverty level and they do not afford English medicines for treatment of animals because they are so expensive. Therefore, they utilize local plants for treatment of animals. Due to less documentation, young generation has no idea that how local people mostly farmers used plants for curing animals.

S#	Scientific/Family Names	Ver. Name	Uses Used	Part
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Tab 1. Ethnoveterinary plants of District Charsadda locally uses, vernacular names and parts used

1	Alliaceae			
	<i>Allium cepa</i> L. Bulb	Piaz	using for foot and mouth diseases,	
				Indigestion, scabies and eczema
	<i>Allium sativum</i> L. garlic Bulb	Ouga	A mixture is made with chilly and	
	bread eaten to animals for those			condition when they not eat
	fodder.			
2	Amaranthaceae			
	<i>Beta vulgaris</i> L. increase Fruit	Chaqandar	Use for weakness and milk	
3	Anacardaceae			
	<i>Mangifera indica</i> L. Leaf	Aam	Diarrhea and gas problem	
	<i>Buchanania cochinchensis</i> L. Seeds	Torab	Use to treat skin disease	
4	Apiaceae			
	<i>Coriandrum sativum</i> L. Leaf	Dhania	Reduce body heat, foot and mouth	
	<i>Carum carvi</i> L. Seeds	Zeera	Skin disease, gas problem and fever	
	<i>Foeniculum vulgare</i> Mill. increase milk Fruit	Kaga	Galactagogic,	ruminative

pain	<i>Trachyspermum ammi</i> L. Fruit	Sperke	After delivery of new born to reduce

S#	Scientific/Family Names	Ver. Name	Uses	Part Used

5	Asclepiadaceae			
	<i>Calotropis procera</i> L. Latex	Spalmai	Snake bite and dog bit	
6	Brassicaceae			
	<i>Brassica campestris</i> L. Oil	Sharsham	Dysentery, Skin diseases, dog bite	
			Body heating, burn and neck	sore
	<i>Eruca sativa</i> Leaf	Jmamo	Timpani and off feeding	
	<i>Lapidium sativum</i> (extracted Seeds	Alam	Eaten with mixing in Gurr	
			Sugar cane) after delivery for	pain
			Killing and milk production.	
7	Berberidaceae			
	<i>Berberis lyceum</i> Bark	Zyar largay	Eyes diseases, conjunctives	
8	Boraginaceae			
	<i>Cordia dichotoma</i> Bark	Lasora	Significant and relief pain	
	<i>Cordia macleodii</i> Stem	Kasamar	Relief from insanity, astringent and	gargle

9	Caesalpinaceae			
	<i>Cassia fistula</i> L.	Fruit	Amaltas	Use at the time during hard pain/pregnancy

S#	Scientific/Family Names	Ver. Name	Uses	Part Used

10	Canabaceae			
	<i>Cannabis sativa</i> L.	Seeds	Bhang	Their leaves and seeds are taken for reduce
				for
				Body temperature in summer also use
				Off feeding.
11	Convolvulaceae			
	<i>Convolvulus arvensis</i> L.	Whole plant	Marghe hpa	Increase milk
12	Euphorbiaceae			
	<i>Ricinus communis</i> L.	plant	Aranda	The oil of seeds is used as a cleansing Whole
				in animals leaves and thorns and is
				given to cattle suffering from severe
				impaction of rumen. leaves are used to
				accelerate the removal of placenta in cattle.
13	Flacourtiaceae			
	<i>Flacourtia sepiaria</i> Roxb.	Leaf	Amlooka	Rheumatism and paresis in animals,
				Snakebites.

14	Fabaceae\ Leguminosae		
	<i>Prosopis cineraria</i> L. Flower	Kahoor	Flowers are used in the form of plasters
			to treat rheumatism in cattle, sheep, goats.
	<i>Prosopis glandulosa</i>	kandi	Pain killer during fracture of bones

S#	Scientific/Family Names	Ver. Name	Uses	Part Used
	Fruit			

15	Fumariaceae			
	Fumaria indica Pugsley Whole plant	Shatra	Skin disease and inflammation	
16	Laminaceae			
	Mentha longifolia L. Leaf	Venaly	Off feeding	
17	Liliaceae			
	Polygonatum verticillatum L. Rhizome	Nor alam	Increase milk	
18	Linaceae			
	Linum usitatissimum L. Seeds	Asli	Increase milk, fever and weakness	
19	Malvaceae			
	Abelmoschus ficulneus L. Whole plant	Zangali bhindi	Scorpion bite	
20	Meliaceae			
	Azadirachta indica A. Juss	Naim	Wound in body	Leaf
	Melia azadarach L. Fruit	Shenday	Body cool	

21	Moeaceae		
<i>Ficus carica</i> L. Bark	Inzer	Retain placenta	
<i>Morus nigra</i> L. Fruit	Tor toot	Mature fruit is given with cow's milk to	
increase fertility also cures scorpion bite.			
<i>Ficus benghalensis</i> L.	Vada	Inflammation	

S#	Scientific/Family Names	Ver. Name	Uses	Part Used
	Latex			

22	Papaveraceae		
<i>Papaver somniferum</i> L. Fruit	Afum doda	Vaginal prolapse	
23	Papilionaceae		
<i>Cicer arietinum</i> L. Seed	Chanra	Take away weakness	
<i>Lens culinaris</i> Medic Seed	Masor	Remove bareness, broken horn	
<i>Trigonella foenum-graecum</i> Lea	Malhoze sag	Gastric problems, asset, diarrhea	
24	Pedaliaceae		
<i>Sesemum indicum</i> L. Oil	Konzale	Vaginal prolapse	
25	Piperaceae		
<i>Piper nigrum</i> L. Seed	Tor march	Cough and fever	
26	Poaceae		
<i>Hordium vulgare</i> L. Seed	Worbashi	Take away weakness	

	<i>Oryza sativa</i> L. Seed	Chawal	Bone broken, neck sore, skin ailment
	<i>Triticum aestivum</i> L. Whole plant	Ghanam	Strength, diarrhea, skin sore
	<i>Zea mays</i> L. Seed	Jwar	External parasites, diarrhea
27	Rhamnaceae		
	<i>Zizypus nummularia</i> W. Leaf	Bera	Treatment Longing and lasting wounds

S#	Scientific/Family Names	Ver. Name	Uses	Part Used

28	Rosaceae			
	<i>Prunus persica</i> L. Leaf	Shaftalo	Worm infiltration	
	<i>Rosa damascenea</i> Mill. Flower	Gul Qand	Vaginal prolapse	
29	Rutaceae			
	<i>Citrus limon</i> L. Fruit	Limon	Inflammation in breast	
	<i>Citrus medica</i> L. Fruit	Narang	Blotch	
30	Solanaceae			
	<i>Capsicum annum</i> L. Fruit	Mirchke	This is mixed with garlic and used at the	
			Stage when animal eat nothing.	
	<i>Capsicum frutescens</i> L. Fruit	Sor Marchke	Gives to about 1 year of baby to exclude	
			From milk.	

<i>Nicotiana rustica</i> Comes Leaf	Naswar	Use for wounds
<i>Solanum surattense</i> Burm.f. Fruit	Kundiere	Use for fever and infiltration
<i>Withania somnifera</i> L. Fruit	Koti Lal	Off feeding
<i>Lycium depressum</i> Stocks Bark	Charchitia	The part of bark is grinded and the powder is puffed into the nostrils of animals to open overcome air passage in phlegm.

S#	Scientific/Family Names	Ver. Name	Uses	Part Used

	<i>Nicotiana tabacum</i> L. Leaf	Tambaco	External injury and indigestion	
31	Tamaricaceae			
	<i>Tamarix aphylla</i> L.	Ghazz	Diarrhea and milky malaise	
32	Theaceae			
	<i>Camellia sinensis</i> L. Leaf	Chai	Cough, fever and indigestion	
33	Zingiberaceae			
	<i>Curcuma longa</i> L. Rhizome	Kurkman	Wounds and hair losing	
	<i>Zingiber officinale</i> Roscoe Rhizome	Sund	Cough, fever and weakness	
34	Zygophyllaceae			
	<i>Peganum harmala</i> L. Seed	Spelani	Normal temperature	

Tribulus terrestris L.
Whole plant

Azghake

Diarrhea

It was observed during the study that *Allium cepa* L. is used for the treatment of foot and mouth diseases. Similar plants were also used by Deeba *et al.*, 2009. The latex of *Calotropus procera* is locally used for the treatment of snake bite and dog bite and it was experimentally displayed by Kumar and Roy (2007) that latex of *C. procera* are used for protection and swelling. While, Iqbal *et al.* (2005) demonstrated that flowers of *C. procera* have good anthelmintic action in contradiction of nematodes of sheep. During investigation Yesmin *et al.*, 2008 found that leaves of *C. procera* have antibacterial action. The same study was evolved by Shah *et al.*, 2014 that some plants having antibacterial activity. It is reported that leaves of *Nicotiana rustica* and *Nicotiana tabacum* found locally and are used for external injury and wounds treatment. This was also reported by Wirtu *et al.*, 1997; Guarrera, 1999; Lans *et al.*, 2000; Nfi *et al.*, 2001; Kudi, 2003 in various studies. Similarly, it was concluded that species of *Ficus* retain placenta and inflammation it is also report by Pande *et al.*, 2007 the species of *Ficus* to increase lactation.

Plant pictures



Fig 1. *Allium sativum* L.



Fig 2. *Lepidium sativum*



Fig 3. *Cassia fistula* L.



Fig 4. *Solanum surattense* Burm.f.



Fig 5. *Ricinus communis* L.



Fig 6. *Calotropus procera* L.

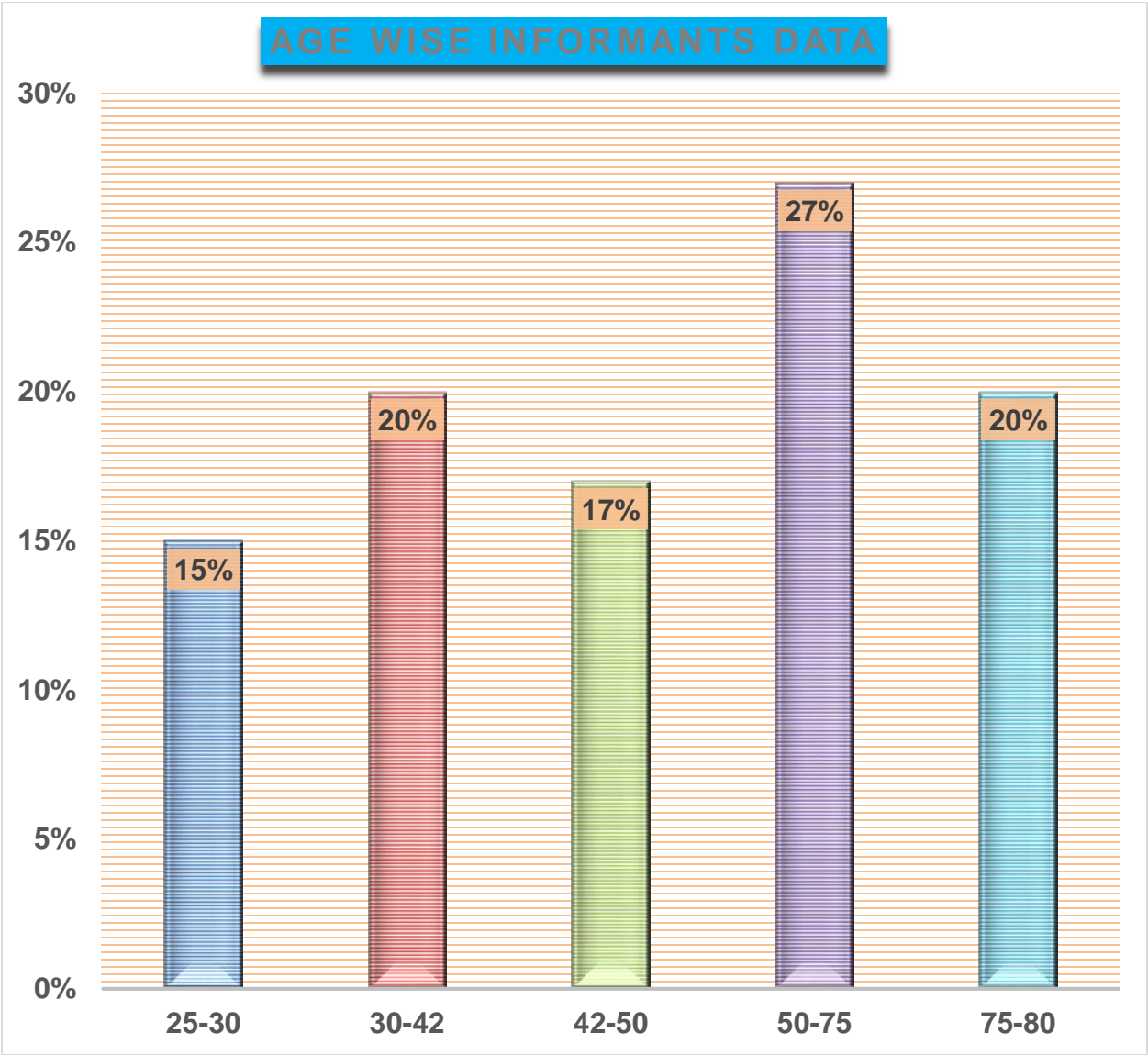


Fig 2. Folk ethnoveterinary knowledge of District Charsadda

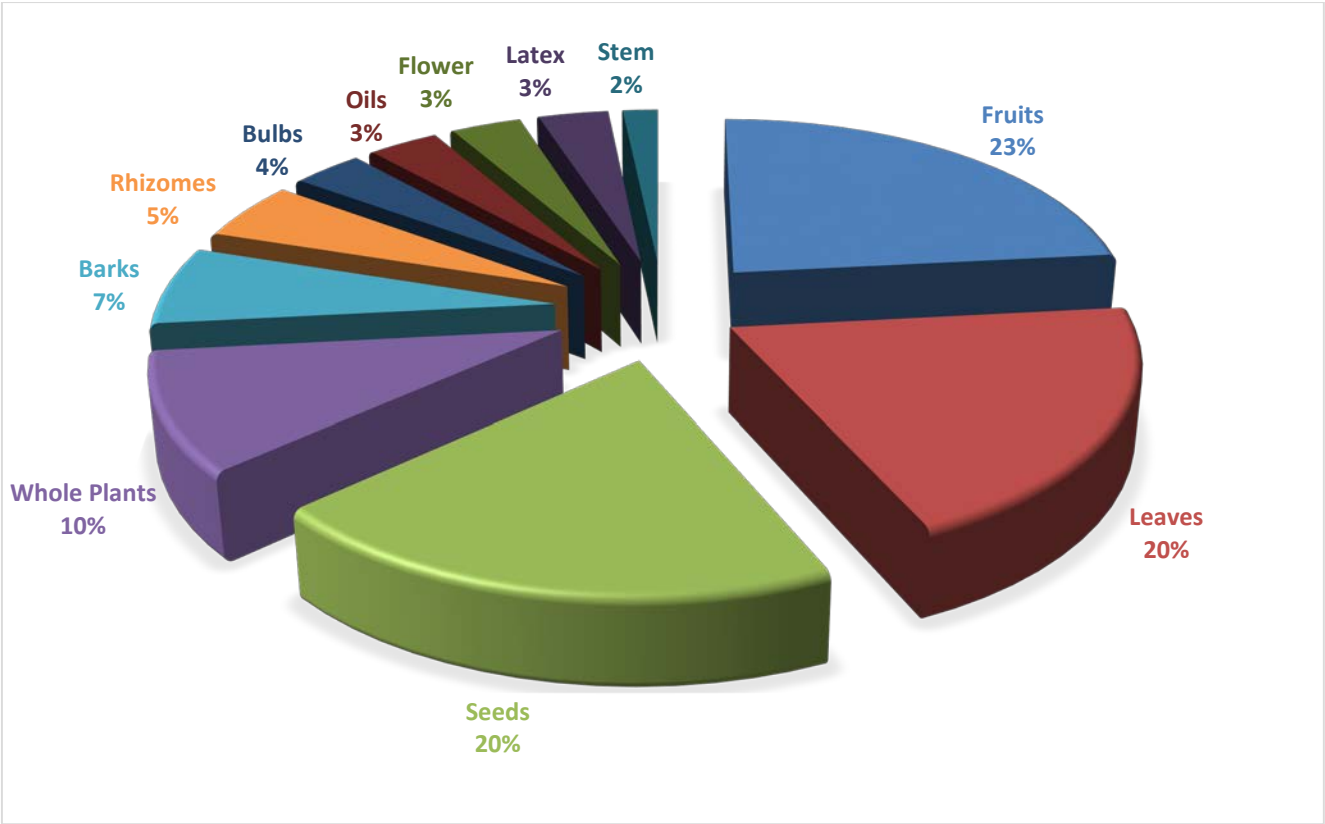
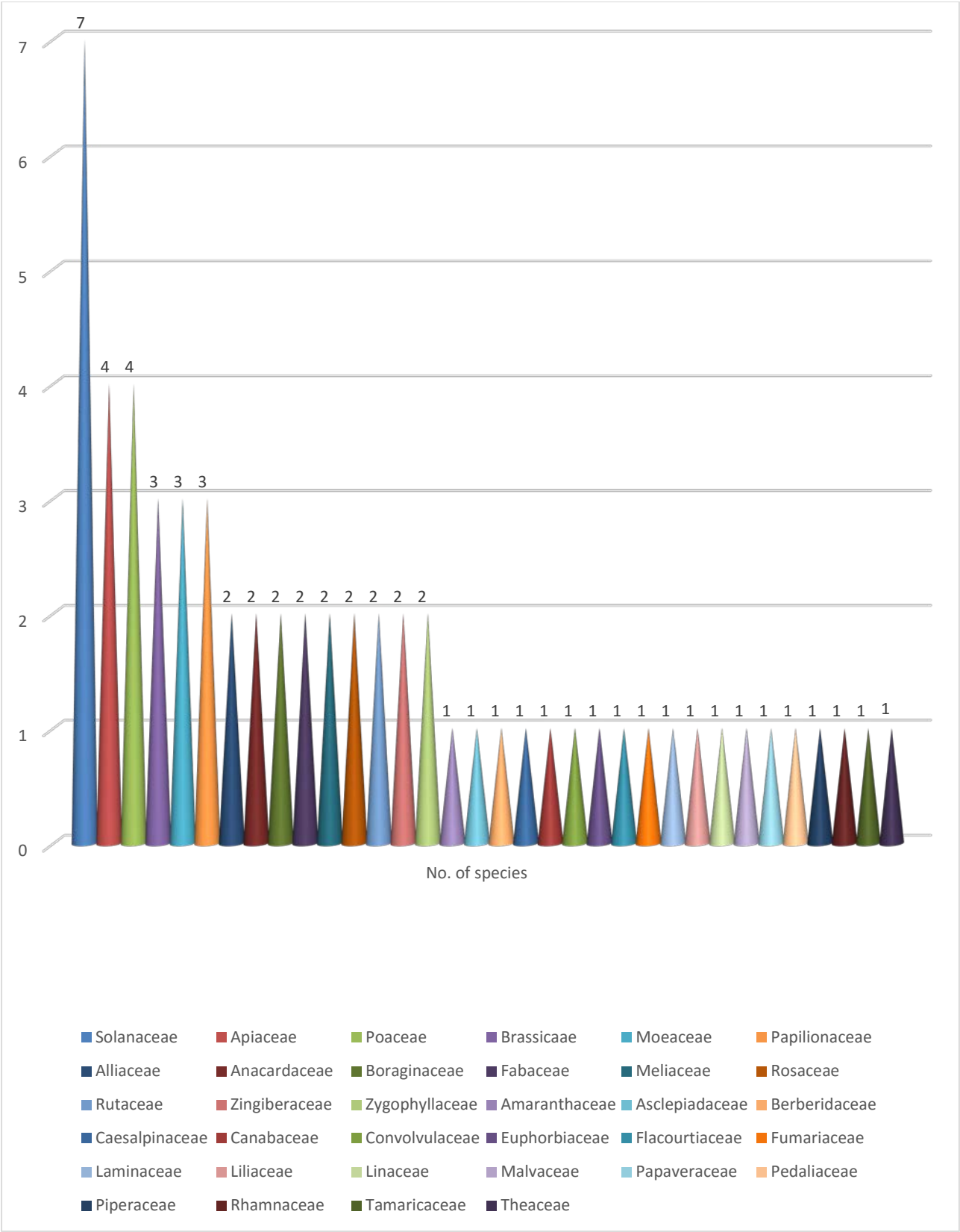


Fig 3. Part used by local people in District Charsadda.



Conclusion

The study concludes that people of district Charsadda have keen interest in the use of ethnoveterinary plants for curing different ailments of domestic animals. It was also concluded that highest frequency of plants used for ethnoveterinary purposes came from family Solanaceae. Among plant parts, fruits of ethnoveterinary plants were the most widely used parts for treating diseases of animals.

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