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研究报告

Research Report

巴基斯坦开伯尔 Pakhtunkhawa 卡拉克地区卡塔克部落药用植物和其他有用植物的民族植物学调查

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摘　要　本研究介绍了关于卡拉克区 Khattak 部落药用植物和其他有用植物使用方法的民族植物学的研究结果。，在 2005 至 2007 年间，我们通过半结构式问卷和个人观察的访谈方法进行研究。我们记录使用的 160 种植物，属于 56 个科，其中 22 个是乔木类，23 个是灌木类 115 个是草本植物类。这些植物被用于治疗人类和他们的宠物的各种疾病。该地区是首次被调查的，在相关信息失传前，特别记录和提到了有关其药用用途和古老治疗方法的信息。从经济和植物学的角度来看，研究领域具有很大的潜力。

关键词　民族植物学；药用植物；保护；巴基斯坦

An Ethnobotanical Survey of Medicinal and Other Useful Plants of Khattak Tribe in Tehsil Karak, Khyber Pakhtunkhawa, Pakistan

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Abstract　This paper presents the results of ethnobotanical studies on medicinal and other useful plants used traditionally by the Khattak Tribe in Tehsil Karak. The study was carried out during 2005-2007 through interview using semi-structured questionnaire and personal observation. We documented the use of 160 plants belonging to 56 families in which 22 are trees, 23 are shrubs and 115 are herbs. These plants are used in the cure of various diseases of humans and their pets. The area was investigated for the first time and information about the traditional remedies with special reference to their medicinal uses were collected and documented before they are lost. From the economic and botanical point of view the study area has great potentiality.

Keywords　Ethnobotany; Medicinal plant; Conservation; Pakistan

1 介绍

Harshberger 在 1896 年提出的“民族植物学”就是被原住民使用的植物。它被认为是生物学的一个分支。它涉及各阶段植物与人类关系和植物环境对人类社会的影响的研究评价。卡拉克地区生物多样性丰富，植物种类很多，其中一些还有他们的药用价值。由于卡拉克地区大部分人住在没有医疗设施的偏远地区，因此该地区的人仍然依赖于民间药物。该地区有自己的传统文化，当地人民有自己的村庄选址，家庭，服饰，婚礼，分娩，死亡仪式、文化功能、节日和社会宗教信仰的选择与规则。因此他们有当地植物的土著知识。巴基斯坦各个领域关于民族植物学的研究也在进行(Shinwari and Khan, 2000; Shinwari and Gilani, 2003; Hussain et al., 2006; Shinwari, 2010; Khan et al., 2011)。本研究的目的是收集、记录和汇总卡拉克地区多样而分散的古老的药用植物治疗用途的相关信息。这样的一项研究将为它们治疗特定疾病的真实性提供证据，因此它将会是一个非常有趣的和有益的前期药理基础，为对它们的研究提供科学的基础。

2 研究方法

卡拉克地区位于北纬 32°47 到 33°28，东经 70°30 到 71°30(图 1~图 3)。大部分研究区域是弯曲的干燥的丘陵和粗糙的地面。虽然山丘很干燥，但实际上，它蕴含了珍贵的矿物质，如盐，石膏、天然气等。由于饮用水

的短缺，人们不得不从很远的地方去取水。这个区域降雨量很少。在 2005 年，该地区的年降雨量为 300~400 mm。这个地区夏季很热，冬季寒冷。2005 年，该地区的的平均最高温度为 42°C，而在六月，平均最低温度低至 4°C，记录在该地区十二月和次年一月的温度变化(表 1)。

表1 2005年卡拉克地区的气象数据
Table 1 Meteorological data of Tehsil Karak for the year 2005

Months	Temperature (°C)				Rainfall	Relative humidity (%)		Soil Temperature	Wind speed
	Mean maximum	Highest recorded	Mean minimum	Lowest recorded	(mm)	5 A.M.	5 P.M.	(°C) Average	(km/h)
January	16.9	20	4	0	64.8	83.1	37.2	4.6	2.4
February	16.8	24	7	2	95.1	82.6	42.7	6.8	2.7
March	24.38	29	12.6	10	80.6	85	39	13.2	3.3
April	32	38	16	10	14.6	65.9	24.3	22.1	3.4
May	33.2	39	20.8	16	34.8	58.7	28	15.4	6.2
June	42	49	26	19	19.8	47.2	22	22	5.3
July	36.7	41	26.1	22	19.8	77.4	38.6	22.7	4.6
August	37	41	26.1	21	73.40	79.6	40.5	23.22	4.2
September	35.9	40	24.7	19	82.2	75.6	39.5	23.1	3.1
October	33.1	37	18.3	10	54	65.3	28.4	17.7	4.2
November	26	29	10	9	Nil	62	35	11.2	3.8
December	22.9	26	4	1	Nil	60	30.3	5.8	3.6

注: 资料来源: 卡拉克瓦拉艾哈迈德农场农业研究
Note: Source: Agricultural Research Farm Ahmad Wala Karak

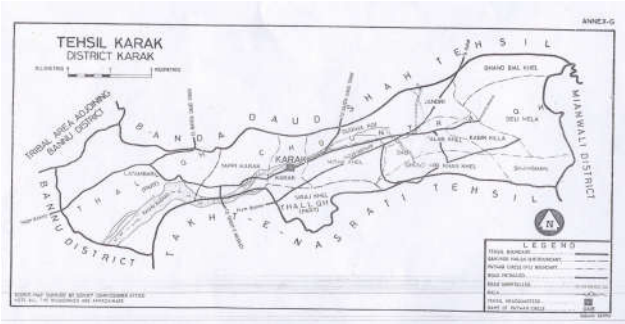

图1研究区地图
Figure 1 Map of research area

3 调查和问卷

这项研究是通过在 2005-2007 年间冬季，春季，和夏季的不断调查所得到的。民族植物学的信息是在每个地点通过半结构式问卷，和访问当地有经验的人关于植物的医药用途获得的。植物被当地人用作药材，燃料，建筑木材和饲料的信息是通过随机抽样的方法，采访不同行业的人，因为年龄段和性别的不同而使用这些植物的目的不同获得的。个人问卷是分发给植物收藏家，家庭主妇、店主、老人、植物贸易商和当地医师(Hakims)填的，这些实际的使用者知道很多关于植物药和他们古老的用途的土著知识。为了最终的报告对数据进行分类、汇总、分析和总结。在当地现有文献的帮助下，利用巴基斯坦克哈特科技大学植物学系的植物标本馆将植物进行采集，干燥和辨别来制作植物标本。将所有的植物分为乔木、灌木和草本植物，列出植物名称、地方名称、所属科类、使用部位、花期、制备方法和用途。

4 结果

本研究包括卡克拉地区植物的土著知识。该地区共 160 种植物，属 56 科，其中 22 种为乔木类，23 种为灌木类和 115 种为草本植物类(图 4)。其中主要科类为禾本科有 16 种植物，其次是菊科和蝶形花科各 14 种，茄

科 8 种，苋科和十字花科各 7 种，葫芦科和唇形科 6 种，含羞草科 5 种，旋花科、大戟科和锦葵科各 4 种，紫草科、白花菜科、藜科、鼠李科、马鞭草科和蒺藜科各 3 种。葱科、繖形花科、萝藦科、萍草科、桑科、桃金娘科、车前科、蓼科、报春花科和柽柳科各 2 种。番杏科、芦荟科、夹竹桃科、天门冬科、日光兰科、仙人掌科、石竹科，云实科、卫矛科，蓝堇科、牻牛儿苗科、金丝桃科、楝科、防己科、紫茉莉科、列当科、酢浆草科、棕榈科、胡麻科、石榴科、毛茛科、蔷薇科、刺茉莉科、无患子科、山榄科、玄参科、椴树科和葡萄科各一种(图 5)。大多数植物有多种用途，但主要为药用。现有民族植物学的目录为表 2~表 4。

图2一号研究区域的景观
Figure 2 View of research area-1

图 3 二号研究区域的景观
Figure 3 View of research area-2

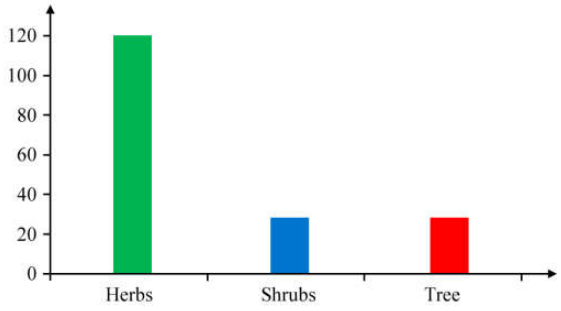

图4不同类别植物种数
Figure 4 Number of plant species in different strata of research area

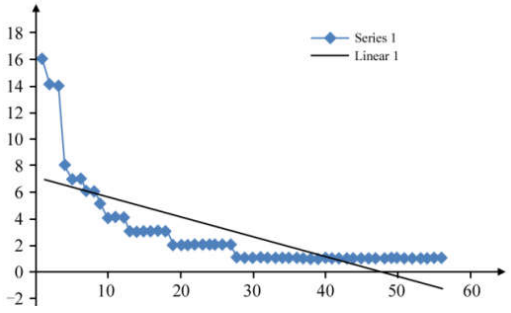

图5研究区域各科类植物数量
Figure 5 Total number of families in research area

表 2 卡拉克地区乔木类重要植物的植物学名称、俗名、科、使用部位、花期和使用方式
Table 2 Economically important trees of Tehsil Karak, botanical name, local name, family, parts used, floral period (FP) and uses

SN	Botanical name	Local name	Family	Floral period	Part Uses	Uses
1	*Acacia modesta* Wall.	Palosa	Mimosaceae	March – April	Flowers, Gum & leaves	Inflorescence; perfume, cooling agent in asthma and fever. Gum; sexual desire & tonic, back bon pin and given especially for women after the child birth. Eye troubles. Ash of leaves; wound of cattle. Agriculture tools, fuel, fodder, hedging and sheltering & honey bee specie.
2	*Acacia nilotica* (L) Delice.	Kikar	Mimosaceae	April – May	Bark & Seed	Stimulant and demulcent. Bark deduction; diarrhoea, diabetes and dysentery. Gum; cough and chest complaints. Seed juice; eye trouble. Ash; wound. Fodder, fuel, soil erosion, shad, hedging & sheltering & honey bee specie.
3	*Albizia lebbeck (L.) Benth.*	Sreen	Mimosaceae	April – May	Leaves, flower & bark	Flowers; shin diseases, bark; diarrhea, seed; eye troubles, inflorescence; perfume. Wood; furniture and fuel. Shade, ornamental purpose, Hedging & sheltering. honey bee specie

Continuing table 2

SN	Botanical name	Local name	Family	Floral period	Part Uses	Uses
4	*Capparis deciduas (Forssk). Edge worth.*	Tap	Capparidiaceae	July – Sept	Leaves & Fruit	Fruits; Pickles, Jams, laxative. Bark; laxative, anthelmentic and swellings. Fuel, agriculture tools and hedging & sheltering. Honey bee specie.
5	*Dalbergia sissoo* Roxb.	Shawa	Papilionaceae	Spring	Whole plant	Branches; clean teeth. Green bark; cleaning of teeth crushed leaves mixed with lemon juice are used for freckles. Fuel, furniture & agricultural tools. Ash; making snuff (Naswar). Shad tree, honey bee species, hedging & sheltering.
6	*Eucalyptus globules* L.	Sofida	Myrtaceae	April-May	Whole plant	Fuel wood, agriculture tools & hedging and sheltering.
7	*Eucalyptus lanceolatus* L	Lochi	Myrtaceae	April-May	Whole plant	Fruit; laxative & digestive. Thatching, fuel wood, agriculture tools & hedging and sheltering.
8	*Gymnosporia royleana* Wall.	Pataki	Celastraceae	April- May	Seeds	Smoke of seed; against toothache. Fuel wood, fodder, hedging & sheltering. Honey bee specie.
9	*Melia azedarach* L.	Bakain	Meliaceae	March – April	Leaves	Leaves juice; diuretic & anthelmantic. Fuel, timber, agricultural tools, furniture, fodder, ornamental purposes & Honey bee species.
10	*Monotheca buxifolia* (falk) A.DC.	Gurgura	Sapotaceae	March – April	Fruit	Fruit; laxative & digestive. Thatching, fuel wood, Honey bee species, agriculture tools & hedging and sheltering.
11	*Morus alba* L.	Spin Shatut	Moraceae	March - April	Fruit	Fruit; laxative. Wood; fuel, furniture and timber. Branches; making cages for birds & baskets. Shady tree, honey bee species, hedging & sheltering.
12	*Morus nigra* L.	Toor Shahtut	Moraceae	March- April	Leaves	Excess use cause constipation. Honey bee specie.
13	*Parkinsonia aculeata* L.	Karan	Ceasalpiniaceae	April - May	Leaves	Leaves juice; laxative & tonic. Fodder, fuel & honey bee specie
14	*Phoenix dactylifera* L.	Khajoor	Palmae	March – May	Fruits & Leaves	Fruits; cough chest problems, fiver, nutritive, laxative, tonic, cooling agent & stimulate sexual desires. Leaves; thatching & kits, mats, baskets, caps, ropes, hedge & soil binder. Dried peduncles; brooms. Honey bee specie.
15	*Prosopis farcta* (Banks & Sol.) J.F. Macbr.	Sangara	Mimosaceae	April – May	Fruits, Gum & leaves	Stimulant and demulcent. Bark deduction; diarrhoea and dysentery. Gum; cough and chest complaints. Ash; wound. Fodder, fuel, soil erosion, shad, hedging & sheltering.
16	*Prosopis juliflora* (Sw.) DC.	Gersinai kikar	Mimosaceae	April – May	Fruits & Gum	Gum; cough and chest complaints. Fodder, fuel, soil erosion.
17	*Punica granatum* L.	Anar	Punicaceae	March – May	Fruits & Bark	Fruits; nutritive, cooling, laxative, tonic & digestive. Dried unripe seeds; condiments. Bark; dysentery. Ornamental, honey bee specie, handles of sickles.
18	*Salvadora oleoides* Decne.	Plaiman	Salvadoraceae	Feb – March	Whole plant	Tonic, diuretic, diarrhoea & dysentery. Honey bee specie.
19	*Tamarix aphylla* (L.) Karst.	Sheen ghazz	Tamaricaceae	May – Sept	Leaves & Bark	Antiseptic. Bark; skin disease. Fumes; healing, inflammations of wounds & child's birth. Leaves; various ways in tetanus & fodder especially for camel. Fuel, timber & furniture. Honey bee specie.

Continuing table 2

SN	Botanical name	Local name	Family	Floral period	Part Uses	Uses
20	*Tamarix decidva* Roxb.	Sor Ghazz	Tamaricaceae	May – Sept	Leaves & Bark	Antiseptic. Bark; skin disease. Fumes; healing, inflammations of wounds & child's birth. Fuel & Honey bee specie.
21	*Zizyphus maurtiana* Lam	Beri	Rhamnaceae	Spring	Leaves & Fruits	Fruits; tonic, digestive & stimulate sexual desires. Branches; fencing. Leaves; boiled in water for bathing of dead Muslims bodies. Deduction of roots; fever. Agricultural tools like Belcha, Karah, & Ax (Tabar) etc. Honey bee species, Fuel, fodder, hedging & sheltering.
22	*Zizyphus oxyphylla* Edgew	BadaBera	Rhamnaceae	Spring	Fruits	Fruits; tonic, digestive & stimulate sexual desires. Honey bee species, Fuel, fodder & Honey bee specie.

表 3 卡拉克地区有经济价值的灌木类植物的名称，本地名称，科类，使用的部位，花期(FP)和使用方法

Table 3 Economically important Shrubs of Tehsil Karak, botanical name, local name, family, parts used, floral period (FP) and uses

SN	Botanical name	Local name	Family	F.P	Part uses	Uses
1	*Alhagi maurorum* Medic.	Ganderi	Papilionaceae	Sept - Dec	Whole plant	Fuel.
2	*Astragalus psilocentros* Fisch.	Azgekai	Papilionaceae	April - May	Seed	Seed: used as tonic. Fodder of camel.
3	*Calligonum polygonoides* L.	Balanza	Polygonaceae	Sept - Dec	Whole plant	Ash; Used in Naswar. Leaves: diuretic & expectorant. Fuel. Soil erosion.
4	*Calotropis procera* (Wild) R.Br.	Spalmai	Asclepiadaceae	Through out year	Whole plant	Expectorant, anthelmantic. Young flowers; used for Tumors. Children play with fruits. Fuel.
5	*Capparis spinosa* L.	Kakri	Capparidiaceae	Sept - Dec	Leaves, root & bark	Unripe fruit; in pickled as a condiment. Ripe fruits; laxative. Root bark; diuretic, tonic, expectorant, anthelmantic, paralysis & in large spleen. Bruised leaves; poultices in gout. Honey bee specie.
6	*Cocculus pendulus* (Forst) Diels	Beta	Menispermacea	Spring	Whole plant	Plant used in insanity & diarrhea.
7	*Datura metel* L.	Barbaka	Solanaceae	Sept - Dec	Leaves, seeds & root	Seeds, leaves & roots; skin disease, insanity & diarrhea. Dry leaves; painful tumors. Fresh leaves; contraction of mammary glands & stop the production of milk. Seed; killing dogs. Fuel & honey bee specie.
8	*Dodonaea viscosa* L.	Sanatha	Sapindaceae	Spring	Leaves	Leaves; bitter & astringent, goat rheumatism, swelling & burns. Branches; thatching, hedging, fencing & ornamental plant. Dried plant; fuel. Honey bee specie.
9	*Ocimum basilicum* L.	Baburi	Lamiaceae	Oct - Dec	Flowers, seed & roots	Flowers; stimulant, carminative & diuretic. Seed; mucilaginous: chronic diarrhea, dysentery & gonorrhea in the form of infusion. Inflorescence juice; applied to the quails during cold, flue & joints. Roots; bowel complaints of children. Ornamental purposes mostly in Masjid. Honey bee specie.

Continuing table 3

SN	Botanical name	Local name	Family	F.P	Part uses	Uses
10	*Opuntia ficus indica* (L.) Mill	Ganderi	Cactaceae	Spring	Whole plant	Hedge & sheltering. Flowers are used by children.
11	*Otostegia limbata* (Benth.) Boiss.	Her sasa	Lamiaceae	Spring	Whole plant	Stimulant & carminative. Hedge & sheltering. Fuel.
12	*Periploca aphylla* Decne.	Barara	Asclepiadaceae	April - May	Whole plant	Flowers; stimulant & diuretic. Fuel.
13	*Rhazya stricta* Dcne.	Gandera	Apocynaceae	April - May	Leaves	Leaves; anticancer. Leaves extraction; eye trouble. Fuel, hedge & sheltering. Honey bee specie.
14	*Ricinus communis* L.	Arand	Euphorbiaceae	April - May	Seeds	Seed; mucilaginous: diarrhea & dysentery.
15	*Rosa indica* L.	Sada Gulab	Rosaceae	Through out year	Fruits	Fruit; wound agent, fragrance. Gulkand: mixture of petals with sugar; cooling, nutritive and laxative. Flowers; sign of love. Ornamental purposes, Honey bee specie, hedge and sheltering.
16	*Saccharum bengalense* Retz	Kana	Poaceae	Oct - Nov	Leaves & root	Root; diuretic & demulcent. Juice; blood trouble & urinary complaints. Leaves; Sweeper, fresh fodder special for cow. Children used peduncle for making kite & pen for writing. Prevent soil erosion, fuel, hedging and sheltering. Honey bee specie.
17	*Saccharum spontaneum* L.	Cheyaka	Poaceae	Sept - Nov	Leaves	Leaves; cooling agent. Honey bee specie.
18	*Vitex negundo* L.	Nirgandi	Verbenaceae	Aug – Dec	Flowers, seeds & roots	Flowers mixed with honey; vomiting and fever. Seeds are boiled in water; used to stimulate sexual desire. Roots; tonic & expectorant. The leaves; swelling of joint, headache, remove worm from ulcers, fever, headache & earache. Check erosion & readily grown from cutting. Hedging & sheltering. Honey bee specie.
19	*Vitex trifolia* L.	Nirgandi	Verbenaceae	Aug – Dec	Whole plant	Tonic & expectorant. Honey bee specie.
20	*Vites vinifera* L.	Angur	Vitaceae	Feb – March	Fruit	Fruit; nutritive, laxative, tonic digestive, cooling, refreshing & produces blood. Dried fruit; “Maveek”, & “Dasi sharab” or “Khattak Sarka”. Ornamental plant & honey bee species.
21	*Withania coagulans* Dunal.	Shopyanga	Solanaceae	Spring	Fruit	Fresh fruit; emetic. Dried fruit; coagulating milk, dyspepsia & flatulent colic. Packing material, fuel, skin diseases & blood purifying. Honey bee specie.
22	*Withania somnifera* (L) Dunal.	Asgand	Solanaceae	Through out year	Leaves & fruit	Fruits; diuretic, alternative, Astringent, aphrodisiac & catching bird. Green leaves; relieve joints pain & painful swellings. Roots; Diuretic & tonic. Juice; rheumatism. Seeds; coagulate milk. Honey bee specie.
23	*Zizyphus nummularia* (Burm.f) W.&A.	Karkanha	Rhamnaceae	Spring	Fruits	Fruits; eaten by the game birds. Hedging, fencing, fuel, fodder & honey bee species.

表 4 卡拉克地区有经济价值的草本类植物的名称，本地名称，科类，使用的部位，花期(FP)和使用方法

Table 4 Economically important herbs of Tehsil Karak, botanical name, local name, family, parts used, floral period (FP) and uses

SN	Botanical name	Local name	Family	F.P	Part uses	Uses
1	*Abelmoschus esculentus* (L.) Moench.	Bhindi	Malvaceae	Mar – May	Fruits	Fruits Deduction; demulcent, emollient, Gonorrhoea, vegetables & honey bee specie.
2	*Achyranthus aspera* L.	Kurashka	Amaranthaceae	Mar – May	Leaves	Leaves; purgative, laxative, fodder.
3	*Aerua persica* (Burm.f.)Merrill.	Sasa	Amaranthaceae	April - May	Whole plant	Plant; fodder, fuel and hedging & sheltering. Leaves & flowers; cotton & diseases of goats. Honey bee specie
4	*Ajuga bracteosa* Wall.ex Benth.	Beta	Lamiaceae	Spring	Leaves	Laxative & fodder
5	*Allium cepa* L.	Pyaz	Alliaceae	May – July	Whole plant	Leaves; purgative, laxative, vegetable as a salad.
6	*Allium sativum* L.	Yeza	Alliaceae	April – May	Whole plant	Leaves; purgative, laxative, vegetable used in Chatni.
7	*Aloe barbadensis* Mill.	Zargia	Aloaceae	July – Sept	Leaves	Leaves; purgative, laxative, specialy in joints pain. Sign of Graveyard.
8	*Alternanthra pungens* Kunth.	Soba	Amaranthaceae	Sept – Oct	Whole plant	purgative and fodder.
9	*Amaranthus viridis* L.	Ranzakka	Amaranthaceae	Spring and Summer	Leaves	Leaves; purgative, laxative, vegetable, fodder & honey bee specie.
10	*Anagalis arvensis* L.	Jonk mari	Primulaceae	Mar – April.	Leaves	Leaves; snake biting, purgative, fodder & honey bee specie.
11	*Rhynhcosia minima* (L.) DC.		Papilionaceae	March – April	Whole plants	Purgative, laxative and fodder. Seeds; sexual desire & tonic.
12	*Arachis hypogaea* L.	Mungphali	Papilionaceae	July - Aug	Fruit	Fruit; astringent. Unripe nuts; lactagogue. Oil; aperients, emollient used as a substitute for Olive oil. Hay; fodder, particularly for camels. Seeds; sexual desire & tonic. Cash crop of the area. Honey bee specie.
13	*Asparagus gracilis* Royle.	Zyr guli	Asparagaceae	Spring	Whole plant	Purgative, laxative, fodder Honey bee specie.
14	*Asphodelous tenuifolius* Cavan.	Pyazikai	Asphodelaceae	Feb – March	seeds	Tonic especially for hair mixed with oil.
15	*Astragalus hamosus* L.	Wozai	Papilionaceae	March – April	Whole plant	Leaves; purgative. Fodder. Seed; tonic for sexual desire.
16	*Avena sativa* L.	Keriana	Poaceae	Mar – April	Seeds	Seed; laxative & fresh fodder. Honey bee specie.
17	*Boerhaavia diffusa* auct plur.	Wallakah	Nyctaginaceae.	Aug – Dec	Whole plant	Expectorant, diuretic, laxative anthelmantic & fodder. Root; anaemia, oedema & asoites. Stem; chain is made which is placed in the neck of jaundice's patient. Honey bee specie.
18	*Brassica rapa* L.	Veryai	Brassicaceae	Mar - April	Seeds & shoots	The plant; fodder, vegetable & fuel. Oil; hair tonic. Oil seed cakes (Kall) are given to cattle to increase milk production. Honey bee species. Its excessive use as vegetable may cause constipation.
19	*Calendula arvenis* L.	Zyrgoli	Asteraceae	Spring	Flowers & leaves	Leaves juice; sudorific. Flower; stimulant & antispasmodic. Ornamental purposes. Honey bee specie.
20	*Calendula arvenis* L.	Zirguli	Asteraceae	Spring	Whole plant	Seed; tonic, ornamental purposes.

Continuing table 4

SN	Botanical name	Local name	Family	F.P	Part uses	Uses
21	*Capsicum annum* L.	Merchiki	Solanaceae	March – April	Fruit	Vegetable, stomach problem.
22	*Carthamus oxycantha* Bieb	Azghiki	Asteraceae	April – May	Seeds	Oil; tonic, dressing ulcer & against itch. Honey bee specie.
23	*Celosia argentea* L.	Sufaid murg	Amaranthaceae	July – Sept	Seeds	Seeds; eye diseases, diarrhea, blood & mouth sore. Honey bee specie.
24	*Cenchrus biflorus* Hook. f.,	Kurashka	Poaceae	July – Sept	Seed	Anti cancer. Fodder.
25	*Centaurea iberica* Trev.Ex. Spreng.	Gultukua	Asteraceae	April – May.	Leaves	Leaves; diuretic, laxative & fodder. Honey bee specie
26	*Chenopodium album* L.	Tor Soba	Chenopodiaceae	Through out year	Leaves	Leaves; laxative and purgative. Honey bee specie.
27	*Chenopodium murale* L.	Spen Soba	Chenopodiaceae	Through out year	Leaves	Leaves; laxatives & purgative. Honey bee specie
28	*Chrozophora oblique* (Vahl) A. Juss.	Sheravina	Euphorbiaceae	May – July	Whole plant	Leaves; purgative, laxative. Especial food for Camel.
29	*Cicer arietinum* L.	Chana	Papilionaceae	Mar - April	Whole plant	Roasted seeds; nutritive & diuretic. Seed; tonic stimulant & digestive for horses and donkeys. Gram flour bread; heart patient. Young shoots & leaves; vegetable. Hay; dry fodder, particularly for camels. Important cash crop of the area. Honey bee specie.
30	*Cistanche tubulosa* (Schenk) Wight.	Kasi	Orobanchaceae	Oct – Dec	Whole plant	Laxative, Stomach, worm killing, against sores & diarrhea. Honey bee specie.
31	*Citrullus colocynthis* L. Schrad.	Indrayan	Cucurbitaceae	Nov – Jan	Roots & fruits	Fruit juice; eye treatment and mixed with sugar in discoloration of skin. Seed Oil; snakebite. Fruits; purgative & intestinal disorder of cattle. Honey bee specie
32	*Cleome viscose* L.	Hulhul	Capparidiaceae	Aug – Dec	Leave, seeds & roots	Leaves juice; inflammation of middle ear, earach and deafness. Seeds; carminative & anthelmantic. Roots; anthelmantic. Honey bee specie
33	*Convolvulus arvensis* L.	Pryvatay	Convolvulaceae	Feb - April	Whole plant	Plant decoction; regulates menstrual cycle, skin disorders & asthma. Fodder. Honey bee specie
34	*Convolvulus pluricaulis* Choisy	Gra pryvaty	Convolvulaceae	Feb – March	Whole plant	Leaves; purgative, laxative.
35	*Corchorus trilocularis* L.	Beta	Tiliaceae	July – Sept	Leaves & seed	Leaves; purgative, laxative. Seed: Tonic & highly aromatic
36	*Coriandrum sativum* L.	Dhanya	Apiaceae	Feb – May	Leaves, fruits & seeds	Leaves; flavour to vegetables & chutnies. Fruits & seeds are ground and used as spices for curries. The fruits; highly aromatic, carminative, stimulant, aphrodisiac & refrigerant. Fruit decoction; colic pains, flatulence and bleeding piles. Honey bee specie.
37	*Coronopus didymus* (L) Smith.	Beta	Brassicaceae	March – May	Leaves & fruit	Leaves; purgative, laxative, Fruit; Tonic.
38	*Crotalaria medicaginea* Lam.	Shaftal	Papilionaceae	Nov –Dec	Leaves	Purgative, laxative, fodder

Continuing table 4

SN	Botanical name	Local name	Family	F.P	Part uses	Uses
39	*Cucurbita maxima* Duchesne.	Penta	Cucurbitaceae	July – Aug	Flowers, seeds & fruits	Seeds; tonic, anthelmantic & diuretic. Flowers; vegetable. Fruits; diuretic, Jams & Halwa. Fruit pulp; applied to boils & inflamed portion. Honey bee species
40	*Cucurbita pepo* L.	Safed Keddu	Cucurbitaceae	July – Aug	Leaves, seeds & fruits	Leaves; applied to burns, Jaundice, heart & stomach problems. Fruits; vegetable, Jams & Halwa. Honey bee species.
41	*Cymbopogon jwarancusa* (Jones) Schult.	Sargara	Poaceae	July – Sept	Leave & fruit	Leaves; purgative, laxative, used in Mosque for heat.
42	*Cynodon dactylon* (L) Pers.	Barava	Poaceae	Through out year	Leaves	Leaves; purgative, laxative, asthma. Fodder. Ornamental purposes.
43	*Cyperus rotundus* L.	Dela	Cyperaceae	May – Oct	Leaves	Leaves; purgative, laxative, fodder.
44	*Cyperus scarlosus* R.Br.	Dela	Cyperaceae	May – Oct	Leaves	Leaves; purgative, laxative, fodder.
45	*Daucus carrota* L.	Gajara	Apiaceae	Spring	Roots & seeds	Roots: confectionary for preparing sweets. Seeds; stimulant, carminative & effective; in kidney & uterine pain. Honey bee specie.
46	*Descurainia sophia* (L.) Webb.	Khakshir	Brassicaceae	April – May	Whole plant	Flower & leaves; astringent. Seeds; tonic, expectorant in fever & dysentery. Leaves juice; worm & calculus complaints. Honey bee specie.
47	*Desmostachya bipinnata* (L) Stapf.	Sorgul	Poaceae	Sept – Oct	Flowers & stem	Leaves; Fodder. Stems; making brooms "Chaj" for the winnowing of wheat & hedging & sheltering. Honey bee specie.
48	*Dichanthium annulatum* (Forsk) Staph.	Bambolchi	Poaceae	Spring and Summer	Whole plant	Leaves; purgative, laxative, fodder.
49	*Digera muricata* (L). Mart.	Ranzaka	Amaranthaceae	Spring	Leaves	Leaves; purgative, laxative, fodder.
50	*Echinochloa colonum* (L) Link.	Bambolchi	Poaceae	Sept – Oct	Leaves	Leaves; purgative, fodder.
51	*Echinops echinatus* D.C	Azghi gul	Asteraceae	Spring	Fruit	Tonic, purgative.
52	*Eragrostis poaoides* Beauv.	Bombolchi	Poaceae	Through out year	Whole plants	purgative, laxative, fodder.
53	*Erodium malacoides* Willd	Ger Beta	Geraniaceae	Spring weed	Whole plant	purgative, laxative, tonic, expectorant in fever & dysentery.
54	*Eruca sativa* Millel.	Taramira	Brassicaceae	Mar – June	Whole plant	Plant; fodder especially for donkey. Young leaves; diuretic, antiscorbic, stimulant, stomachic & vegetable. Seeds; vesicant & acrid; used as mustard. Oil; cooking, massage & hair tonic. Seed cakes (Kall); increase milk production. Fuel & honey bee species. Excessive use; constipation.
55	*Euphorbia helioscopia* L.	Shenstarga	Euphorbiaceae	Spring	Seed	Purgative, piousness for cattle.
56	*Euphorbias prostrate* Ait.	Beta	Euphorbiaceae	Spring weed	Whole plant	Leaves; purgative, laxative, Fodder.
57	*Evolvulus alsinoides* L.	Herbeta	Convolvulaceae	July – Sept	Whole plant	Laxative and fodder

Continuing table 4

SN	Botanical name	Local name	Family	F.P	Part uses	Uses
58	*Fagonia cretica* L.	Spelaghzai	Zygophyllaceae	Oct – Jan	Whole plant	Abdominal & gastric troubles. Twigs; cooling agent & blood purification. Fodder especially for camel & honey bee specie.
59	*Fumaria indica (Haussk.)* Pugsley.	Papra	Fumaraceae	Mar – April	Whole plant	Juice; common fever. Plant; diuretic, diaphoretic & aperients. Extract; cooling, blood purification. Fodder. Honey bee species.
60	*Helianthus annus* L.	Meyrgul	Asteraceae	Nov- Jan	Seeds	Oil; diuretic & laxative. Ornamental purposes, Fuel & Honey bee species.
61	*Heliotropium europaeum* L.	Hathi-sunda	Boraginaceae.	May – Sept.	Whole plant	Special fodder for camel. The hakims use the plants for soften of Lead (Cushta) in a special manner. Plant extract; against scorpion-sting. Honey bee specie.
62	*Heliotropium strigosum* Willd.	Sherawena	Boraginaceae	May – Sept	Whole plant	Leaves; purgative, laxative
63	*Hordeum vulgare* L.	Arbashay	Poaceae	Mar-April	Stem & seeds	Seeds; staple cereal crop, easily digestible, bread; diet of stick. Stem; used in air cooler, light packing material, fodder & honey bee specie.
64	*Hypericum pendulum* L.	Beta	Hypericaceae	Spring	Whole plant	Cooling agent & blood purification. Fodder especially for camel & honey bee specie.
65	*Ifloga fontanesii* Cass.	Shenbo	Asteraceae	Feb – Mar	Whole plant	Purgative, laxative & fodder.
66	*Indigofera linifolia* (L.f.) Rets.	Aalia	Papilionaceae.	July – Oct	Seeds & root	Root deduction; purgative, bitter, tonic. Seed; anthelmantic. Honey bee specie.
67	*Ipomoea hederacea* (L.) Jack.	Kaladana	Convolvulaceae	Sept - Oct	Seeds	Seeds; Jalap due to purgative characteristic, fodder & honey bee specie.
68	*Kickxia ramosissima* (Wall) Jan.	Kanodi	Scrophulariaceae	Jan - May	Whole plant	Antidiabetic, fodder & honey bee specie.
69	*Lactuca sativa* L.	Salad	Asteraceae	July – Sept	Leaves	Leaves; laxative, purgative, eaten raw vegetable (called Salad) & ornamental purposes. Honey bee specie.
70	*Lactuca serriola* L.	Salad	Asteraceae	July – Sept	Whole plant	Cooling, sedative & diuretic in the treatment of coughs in phthisis, bronchitis, asthma & pertussis. Honey bee specie.
71	*Launaea procumbens* (Roxb.) Ramayya & Rajgopal.	Dudglak	Asteraceae	April – May	Leaves	Leaves; applied to the head of children that are suffering from fever. Leaves extract; cooling agent. Honey bee specie.
72	*Lens culinaris* Medic.	Masur	Papilionaceae	Sept - Oct	Seeds	Seeds; laxative in fever, Tonic. Fodder & honey bee specie.
73	*Lippia nodiflora* (L.) L.C. Rich.ex. Michaux.	Deaya	Verbenaceae	April - May	Whole plant	Sedative, diuretic, fodder & honey bee specie.
74	*Lithospermum arvense* L.	Beta	Boraginaceae	Spring	Whole plant	Fodder & laxative
75	*Luffa acutangula* Roxb.	Babara Toray	Cucurbitaceae	Oct - Dec	Leaves & fruit	Fruit; laxative, nutritive, tonic, Piles and heart patients. Honey bee species.
76	*Luffa aegyptiaca* (L) M.J.Rocm.	Toray	Cucurbitaceae	Oct - Dec	Fruit	Fruit; laxative, nutritive, tonic, piles, heart patients, blood pressure & stomach. Dry fruits without seed; clean feet & utensils. Honey bee specie.

Continuing table 4

SN	Botanical name	Local name	Family	F.P	Part uses	Uses
77	*Lycopersicom esculentum* Mill.	Tamatar	Solanaceae	Mar - April	Fruits	Fruit; nutritive, preparation of soups, flavouring agent & chattiness. honey bee specie
78	*Malcolmia africana* (L) R.Br.	Alhami	Brassicaceae	Spring	Whole plant	Plant juice; purgative & fodder. honey bee specie
79	*Malva neglecta* Wallr.	Khubasi	Malvaceae	Jan - Mar	Leaves & seeds	Leaves extract; applied externally in skin diseases. Seeds; cough. Fodder & honey bee specie.
80	*Malva parviflora* L.	Panirak	Malvaceae	Jan - Mar	Leaves & seeds	Seed; demulcent, in cough & ulcers in bladder. Leaves; potherb & fodder. Honey bee specie.
81	*Malvastrum coromandelianum* (L.) Gareke.	Beta	Malvaceae	Nov –Dec	Whole plant	Purgative, laxative & fodder.
82	*Medicago laciniata* (L.) Mill.	Malghinda.	Papilionaceae	Mar – April	Whole plant	Anthelmantic & tonic in fever and skin diseases. Fodder & honey bee specie
83	*Melilotus indicus* (L.) All.	Shaftal	Papilionaceae	Feb – Mar	Whole plant	Fodder & laxative. Honey bee specie
84	*Mentha arvensis* L.	Pudina	Lamiaceae	Feb – May	Leaves	Leaves extract; removing of face sign. Sauces, in vegetable as flavoring agent, carminative, digestive & ornamental purposes.
85	*Micromeria biflora* (Buchi. Ham exD. DonBenth).	Beta	Lamiaceae	Spring	Whole plant	Fodder, carminative.
86	*Momordica charantia* L.	Karela	Cucurbitaceae	Oct - Dec	Fruits	Stomach disorder, jaundice diabetes, pills & anthelmantic. Fruit juice; poisonous to animal. Honey bee specie.
87	*Oxalis corniculata* L.	Zyre beta	Oxalidaceae	Mar - May	Whole plant	Purgative, laxative & fodder,
88	*Peganum harmala* L	Sponda	Zygophyllaceae	Sept - Dec	Seeds & root	Piles, antiseptic after child birth & injuries. Seeds; antispasmodic, hypnotic, narcotic & anthelmantic. Seeds are burnt and the red spots on the body of patient disappear if the body is exposed to smoke in small pox. Roots; lice-killing agent. Honey bee specie
89	*Pennisetum typhoideum* (Burm) Stapf.	Bajra	Poaceae	Sept - Aug	Seeds	Tonic; disease of heart. Seeds; special food called "Piasa" is made, diabetes. Fodder, fuel & Honey bee species.
90	*Phragmites karka* (Retz) Trin . Ex. Steud.	Baniwolkrak	Poaceae	Nov –Dec	Whole plant	Fuel & fodder. Thatching, hedging, fencing & ornamental plant.
91	*Plantago ciliata* Desf.	Ispaghul	Plantaginaceae	Mar – May	Leaves & seeds	Seeds with sugar; drastic purgative & dysentery. Leaves; wounds & inflamed surfaces. Fodder & honey bee specie.
92	*Plantago ovata* Forsk.	Ispaghul	Plantaginaceae	Mar – May	Leaves, seeds & root	Seeds; cooling diuretic, demulcent agent in inflammatory conditions of mucous membrane, dysentery, diarrhoea & constipation. Leaves & root; fever. Fodder & honey bee specie.
93	*Pupalia lappacea* (L.) Juss.	Beta	Amaranthaceae	Nov –Dec	Whole plant	Purgative, laxative, Fodder.
94	*Ranunculus muricatus* L.	Beta	Ranunculaceae	Mar – May	Whole plant	Purgative, laxative & fodder.

Continuing table 4

SN	Botanical name	Local name	Family	F.P	Part uses	Uses
95	*Raphanus sativus* L.	Muli	Brassicaceae	Mar – May	Fruits & root	Root; jaundice, lever ailments, urinary complaints & piles. The leaves; diuretic & laxative. Fodder & honey bee specie.
96	*Rumex dentatus* L	Ranzaka	Polygonaceae	Aug – Sep	Whole plant	Purgative, fodder & honey bee specie.
97	*Salvia moorcroftiana* Wall	Papar	Lamiaceae	Mar - April	Seeds & root	Seeds; dysentery & colic. Leaves; wound as poultice & against the mosquito. Root juice; cough & cold. Honey bee specie.
98	*Saussurea heteromalla* (D.Don) Hand.	Gullali	Asteraceae	Aug – Sept	Whole plant	Purgative, laxative, fodder & fuel.
99	*Sesamum indicum* L.	Tilli	Pedaliaceae	Sept - Nov	Seeds	Seeds; tonic & diuretic. Leaves; demulcent in cholera, diarrhoea & dysentery. Seed oil; urinary complaint & dysentery. Fodder & honey bee specie.
100	*Silene conoidea* L.	Nosheen	Caryophylaceae	Spring	Fruit	Fruit; Emollient. Juice; is used in both or as fumigant. Fodder & honey bee specie.
101	*Sissymbrium irrio* L.	Khub kalan	Brassicaceae	Feb - April	Leaves & seeds	Leaves; throat & chest affections. Seed; expectorant in asthma. Fodder & honey bee specie.
102	*Solanum incanum* L.	Asind	Solanaceae	Feb - May	Fruit & roots	Toothache & sore throat. Fruit; chest trouble. Roots; horse medicine.
103	*Solanum nigrum* L.	Mako	Solanaceae	Through out year	Leaves	Leaves; gouty joint & skin disease. Sedative, diuretic, laxative, cooling agent & tonic. Deduction; piles, enlargement of spleen & liver, hydrophobia. Fodder & honey bee specie.
104	*Solanum surattense* Burm.f	Zira mana	Solanaceae	Through out year	Leaves & fruit	Bitter, digestive, Diuretic, expectorant & anthelmantic in cough, asthema, fever, chest pain. Fruit; sore throat. Leaves; relieve pain. Honey bee specie.
105	*Sonchus asper* (L) Hill.	Tareza	Asteraceae	Sept - April	Whole plant	Pounded herb; wound or burn skin. Honey bee specie.
106	*Sorghum vulgare* (L.) Pers.	Jowar	Poaceae	June – July	Seeds	Seeds; diuretic & demulcent. Fodder, fuel & Honey bee species.
107	*Spinacia oleraceae* L.	Palak ka sag	Chenopodiaceae	Mar – Oct	Leaves & seeds	Leaves; inflammation of lung, bowels, laxative, purgative & vegetable. Seeds; inflammation of liver & jaundice. Fodder & honey bee specie.
108	*Taraxacum officinale* Weber.	Gulsag	Asteraceae	Mar – May	Leaves	Leaves; fermentation. Galls; dysentery agent. Fodder & Honey bee species.
109	*Trianthema portulacastrum* L.	Sathi	Aizoaceae	Mar – May	Leaves & root	Root; irritant & amenorrhea. Leaves; diuretic. Honey bee specie.
110	*Tribulus terrestris* L.	Malghandia	Zygophyllaceae	Sept - Dec	Fruit & seeds	Cooling & diuretic agent. Seeds; diseases of kidney stone & urinary bladder. Fruit; cough, heart diseases & sexual desire. Fodder & honey bee specie.
111	*Trifolium alexandrianum* L.	Shawtala	Papilionaceae	Spring	Flowers	Dried flowers; cough, asthma & ulcer. Honey bee species, fodder, harmful for horses & cultivated for fertility of soil crop rotation.

Continuing table 4

SN	Botanical name	Local name	Family	F.P	Part uses	Uses
112	*Triticum aestivum* L.	Gehum	Poaceae	Feb - Mar	Flowers & seeds	Seeds; tonic, nutritive, stimulant, increased sexual desires, Cooling fattening. The flour; bread & chapattis. Flowers; socked in water and are used as a plaster for swellings. Fodder & HONEY bee specie.
113	*Vicia sativa* L.	Ankra	Papilionaceae	March - May	Whole plant	Anti poisonous, fodder & Honey bee specie.
114	*Xanthium strumarium* L.	Kurashki	Asteraceae	July – Sept	Whole plant	Purgative, laxative, fuel
115	*Zea mays* L.	Makai	Poaceae	June – Aug	Fruit	Semi-ripe cobs roasted and eaten as a snack food. Silky stigmas; diseases of bladder. Fodder, fuel & Honey bee specie.

5 讨论

这些作用不同的植物在这一地区的不同季节自然生长。本研究描述了这 160 种植物对当地人民和居民的好处。由于专业资源的短缺，所有这些植物是药物的主要来源，也是当地社会的其他要求的主要来源。

Shenji (1994)认为民族植物学是科学记录的土著人民对这些植物的使用，并进一步评估与自然环境的人类的相互作用。这是当地人和各种专家科学家间的一种合作形式。这样的关于植物的本土知识，继续为农村社区发展提供基础，因为药用植物是该地区宝贵的经济资源也广泛用于原油制作局部，或收集和运送到药品市场内的地区和国家。人们依赖他们周围的资源，特别是在植物。

600 份个人问卷分发给植物收藏家、家庭主妇、店主、长老、植物贸易商和当地医师(Hakims)填的。可观察到 80%的男性和 55%的女性了解有关植物的知识。

有人指出老人比年轻一代有更多民间使用的药用植物的知识。

偏远地区，由于缺乏现代卫生保健设施。巴基斯坦的卫生当局不能为更多的农村人口提供服务。据 WHO 报道超过亚洲 80%的人口负担不起正规的医疗设施，因此只能依靠对野生药用植物物种的熟悉度，便于获取度，使用的简单性和有效性(Anon., 2008)。许多重要的药用植物在市场上以更高的价格出售。当地居民滥用植物，过度开发利用。类似的发现是被 Khan 和 Musharaf(2014)提出的。因此，民间草药的广泛使用不止是由于一个偏好，也是由于当地没有其他疾病治疗的选择。这样的治疗方式，当地大部分人口已经沿用了几代，并且相当成功，应该进行进一步的医疗调查，尤其是那些已经在当地居民中普及数百年但还未被科学研究的植物。

目前的研究表明，叶子和果实是植物中最常见的使用部位，像南非醉茄，野茄，Monotheca buxifolia，大青枣等用于对抗对不同的疾病(表 2~表 4)。巴基斯坦其他领域也有类似的发现(Hussain, et al., 2006; Shinwari et al., 2006; Shinwari, 2010, Khan et al., 2011a, 2011b; Khan et al., 2013)。生态环境问题，如采伐，过度放牧和铲除根用药用植物将其作为燃料木材和商业利用导致了该地区植被覆盖度差，土壤侵蚀和栖息地环境的恶化。当地人把这些植物作为燃料木材或满足其他需求。

根据 Singh 和 Pandey (1980)的研究，森林滥砍滥发，过度采收，导致干旱和半干旱地区的药用植物的可用性显着降低。在本研究中发现的大量植物如茄属南非醉茄，茄属野茄，黄荆，孟加拉甘蔗，Rhazya stricta Dcne，毛叶枣，Monotheca buxifolia (falk) A.DC.，Gymnosporia royleana Wall.、刺山柑蜕膜(属)，Edge worth.，Prosopis farcta (Banks & Sol.) J.F. Macbr.，Salvadora oleoides Decne 和 Otostegia limbata(Benth.)的过度采收。

因此，迫切需要保护这些植物，我们的后代才可能会受益于这些大自然馈赠给人类的珍贵的植物。研究工作中，在研究区丘陵有大量植物化石(图 6~图 7)。未用这种方法中做过研究工作。由于该地区的人缺乏化石的相关知识，不知道其重要性，这些历史财富很多被破坏了。

卡拉克地区的很多人生产蜂蜜。蜂蜜中最重要的自然菌群包括 Ber (Zizyphus maurtiana)和 Phulai (Acacia)。Ber 蜂蜜是很受欢迎的。由于蜂蜜质量优良，已经出口到省、国家级市场了。大多数市场 Ber 蜂蜜的企业家都是外来者。由于对这种蜂蜜产品的需求非常高，所以鼓励和培训蜜蜂饲养者生产和加工出优质的蜂蜜。地方领导人应该帮助他们提升社区和组织的服务水平。本研究的一个主要目的是确保当地的自然历史成为当地一个生活的传统创造经济利益，在社区使用的利益，同时也为该国贸易和经济发展做出贡献。

图 6 1 号研究区域的植物化石。
Figure 6 Fossil of plant species in research area-1

图 7 2 号研究区域的植物化石
Figure 7 Fossil of plant species in research area-2

6 结论

目前的研究表明，该地区的人民拥有良好的草药知识，但人们要走进现代化，他们关于植物传统用途的知识可能会在此进程中失传。被调查的地区药用植物的多样性丰富，拥有繁殖和生长的理想条件。当地的土著医生应积极将他们的知识分享给更多的人。这样的研究也可能为生物化学家和药理学家提供一些关于品种的筛选和快速治疗各种疾病的植物化学成分和生物的真实评估的信息。

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