



ISSN (E): 2320-3862  
ISSN (P): 2394-0530  
NAAS Rating: 3.53  
JMPS 2018; 6(5): 24-30  
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Received: 11-07-2018  
Accepted: 15-08-2018

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## Ethnobotanical study of folk medicinal plants used by villagers in Hajjah district - Republic of Yemen

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### Abstract

Studied and record of the knowledge of the local population during summer 2016 in Hajjah District, Republic of Yemen. Through personal interviews with herbalist and distribution of the questionnaire to the local population. The study showed 102 plant species belonging to 93 genera and 51 families are used different medicinal Uses. The local People have the knowledge of the traditional uses of medicinal plants, through personal experiences and ancestral prescriptions.

It was concluded that, some plants are used singly while many others are used in combination. Similarly few plant species are used for the treatment of specific disease, while several others have multiple uses. The most important of these species: *Adenium obesum* (Forssk.) Roem & Schult, *Anisotes trisulcus* (Forssk), *Artemisia arborescens* L., *Cadia purpurea* (G. Piccioli) Aiton, *Capparis spinosa* L., *Citrullus colocynthis* (L.) Schrad. The plants were mainly used as stomachic, antiallergic, antineuralgia, vermifuge, laxative, against jaundice, emollient, hypnotic, diuretic, digestive, demulcent, carminative, astringent, aphrodisiacs, antispasmodic, antiemetic, antidiabetic, anthelmintic, anodyne and alterative. The present investigation will help in the preservation of indigenous knowledge of the local people, which is depleting day by day.

**Keywords:** treatment, ethnobotanical, knowledge, traditional, Hajjah, Yemen

### 1. Introduction

Yemen is a small country located in the southwestern part of the Arabian Peninsula. Yemen's coastal lowlands, eastern plateau, and deserts give it a diverse topography, which along with climatic factors make it opulent in flora. Despite the introduction of Western medicinal system during the middle of the twentieth century [11].

Yemen is rich in endemic and near endemic plants, with estimated to be 608, in which 457 are endemic (307 in Soqatra) constituting some 16% of the flora which does not occur elsewhere [7]. Treating diseases with the herbal medicine is age old practice in Yemen, India, China, Egypt, Iraq, Persia, Syria, Ethiopia and other gulf countries. There are several traditional systems of medicine practiced in the world [2, 5, 8, 9, 14, 15]. The traditional Arabian system of medicine is practiced in many Arab countries especially in Yemen [12, 16, 17, 29].

Yemen has unique environmental conditions because it has good geographical location. There are about 3000 species of wild plants occur in Yemen, out of which about 40% species are utilized as medicinal plants. These species of medicinal plants have been utilized by the traditional practitioners, Herbalist to treat several diseases since time im memorable. This knowledge has been passed from generations to generations [23].

Vegetation in Yemen is very rich. According to some recent studies, it has been recorded. That 2836 plant species relates to 1065 genera and 179 families (2579 grow naturally, remaining are cultivated). Vegetation in Yemen is full of endemic and near endemic plants which are about 604 species [21].

### 2. Material and Methods

#### Study Area

The study area, Hajjah Governorate, is one of the important provinces located in northwestern Yemen [Fig. 1]. Hajjah is district the capital of Hajjah Governorate. It is located 127 kilometres northwest of Sana'a, at an elevation of about 1800 metres. As of 2003, Hajjah District had a population of 90, 887 inhabitants. It is located between latitudes (N 15° 36' 36", and N 13° 20' 21") and between longitudes (E 33° 43", and E 45° 43") [18].

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The study area is about 8800 km<sup>2</sup> and characterized by a contrast topographical location where the high mountains in the East represented by the mountain range of Maswar which is about (3240) meters height, and the highlands and the low-

lying plains in the West which are about (720) meters height. According to the climate of the study area, it is hot and rainy in summer and cold and dry in winter [19].

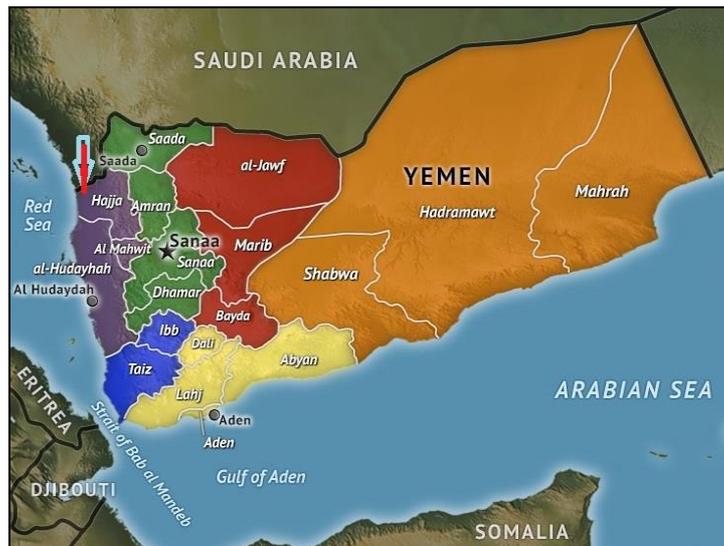


Fig 1: Location of study area

## Methods

The survey was carried out during August 2015 to December 2015 and 2016, 2017 to obtain information about traditional medicinal plants used for treating for various diseases. The information about traditional medicinal plants collected from Healers, & local peoples in region of Hajjah, District, Yemen. The collected data is based on visits and interviews of Healers, & local people in Hajjah. The plants collected during this work were identified with the help of different standard

floras Books. The voucher specimen were scientifically identified, tagged and were preserved in Herbarium.

## 3. Result

The Ethno botanical survey revealed that 102 species were being used as medicine (Table -1). These species belong to 90 genera and 48 families. The local people know the prospect and nature of the plant utilization, through personal experiences and ancestral prescriptions.

Table 1: Enumeration of ethno botanically important species collected from study area with traditional uses and name of cases

Sr. No.	Scientific Names and Family	Part used	Diseases	Method of use
1	<i>Blepharis ciliaris</i> (L.) B. L. Burt. Acanthaceae	E	Burns and wounds	Crush all parts of the plant and put it on burns and wounds
2	<i>Aloe vera</i> (L.) Burm.f. Aloeaceae	L	Hair loss, Wounds	Put the liquid gel down from the leaves on wounds bleeding to cut bleeding and treat ulcers, treatment hair loss.
3	<i>Aloe perryi</i> L. Aloeaceae	L	Alopecia, Wounds, stomach ulcers	The plant is popularly used in wound healing, treatment of hair loss, stomach ulcers, killing of worms in the abdomen.
4	<i>Aerva javanica</i> L. (Burm. f.) Juss. Amaranthaceae	R, Fl, L	Wounds, tooth pain, Diuretic	It is used externally to remove swelling, relieve inflammation and heal wounds and ulcers by placing its flowers on the injury site. The boiled leaves of plant is used as a diuretic, anti-arsenic, and bladder extractor. Plant extract used to treat tooth pain. This is done by crushing the plant after drying and spraying the powder on and around the pain site.
5	<i>Dysphania schraderiana</i> (Schult.) Mosyakin & Clemants. Amaranthaceae	L, Se	Tumors, intestinal worms	The plant used locally as anti-intestinal worms (especially seeds and leaves) and seeds are used to treat hot tumors.
6	<i>Chenopodium murale</i> L. Chenopodiaceae	L	Abdominal pain, Eye diseases, laxative, diuretic, tonic	Improves appetite, acts as an anthelmintic of the abdomen, laxative, diuretic and tonic, abdominal pain and eye diseases.
7	<i>Scadoxus multiflorus</i> (Martyn.) Raf. Alliaceae	R, Fl, L	leishmaniasis	A paste which made from the roots of the plant put on the skin of leishmaniasis patient to treat it.
8	<i>Allium sativum</i> L. Alliaceae	Bu, L	Abdominal worms, cancer	Garlic used too two weeks as anti-abdominal worms, as well as to treating cancer. Take garlic every morning for one month.
9	<i>Allium cepa</i> L. Alliaceae	Bu, L	Cooling, Aphrodisicas	Used in the treatment of colds, eating onion slices leaves in the amount estimated.
10	<i>Schinus molle</i> L. Anacardiaceae	S	Wounds	The leaves extract used to treat wounds and disinfect them from Bacterial infections.
11	<i>Foeniculum vulgare</i> Mill. Apiaceae.	Se, L	Abdominal pain, muscle cramps.	It is popularly used for abdominal pain because it is a worm repellent, relaxing and relieving muscle cramps.
12	<i>Coriandrum sativum</i> L. Apiaceae.	Se, L	Intestinal worms, tumors	The plant is used locally ant intestinal worms (especially seeds and leaves) and its seeds are used to treat hot tumors.
13	<i>Adenium obesum</i> (forssk.) Roem & Schutl. Apocynaceae		Pimples, rashes and wounds	Use of plant milk from the stem to applied for skin diseases such as pimples, rashes and chronic wounds.
14	<i>Leptadenia</i>	S	Kidney stones	Dried plant is used to remove kidney stones.

	<i>pyrotechnica.</i> (Forssk.) Decne. Apocynaceae			
15	<i>Gomphocarpus fruticosus</i> (L.) W.T. Aiton. Apocynaceae	L	Cancer	The leaf powder are used to dissolve cancerous tumors by put powder on the tumor site.
16	<i>Phoenix dactylifera</i> L. Araceae	L, P, F	Increase the amount of blood and Haemoglobin.	The fruits of the plant are used seven pices in the morning for one month, fruits uses as a general strength of women praise birth to compensate for the blood lost at the time of birth. Mix plant pollen with honey and drink to strengthen sexual desire.
17	<i>Aristolochia bracteolata</i> Lam. Aristolochiaceae	R, L	Wounds, sciatica	The plant treats sciatica, and the root powder is used as a disinfectant for wounds.
18	<i>Calotropis procera</i> (Ait.) Ait. f. Asclepiadiaceae	L	Tooth pain	It is used by local people to put a drop of plant milk on the painful tooth to remove it or relieve pain.
19	<i>Caralluma quadrangula</i> (Forssk.) N. E. Br. Apocynaceae	S	Gastric ulcers and diabetes	Fresh stem are used to treat gastric ulcers and diabetes by chewing them.
20	<i>Caralluma deflersiana.</i> Lavranos. Apocynaceae	S	Gastric ulcers	Stem of plant eaten to treat stomach ulcers.
21	<i>Drimia maritima</i> (L.) Stearn. Asparagaceae	Bu	Warts, boils, cardiac diseases, antidote to scorpion,	used to cure skin diseases like warts, boils, cardiac diseases, antidote to scorpion sting by painting the oils from the bulb of the plant and placing the paint on the parts of the body affected by the warts.
22	<i>Artemisia arborescens</i> L. Asteraceae	E	Headaches, abdominal worms	Used with boiling oil and placed on the head to remove headaches, used with mixed milk and drink it to flush out abdominal worms.
23	<i>Crepis alpina</i> L. Asteraceae	L	Worms, malaria, Fever	Repellent worms and treat malaria and reduce the temperature by the era of green leaves and teak it with honey.
24	<i>Echinops spinosissimus</i> Turra. Asteraceae	L, F	Cough	Dry leaves powder boil in a glass of water and drink to treat cough.
25	<i>Psiadia punctulata</i> (DC.) Vatke. Asteraceae	L	Back pain, Bruising and Cough	Used to treat back pain, bruising and cough, treatment of the spine by put its leaves and tightening it on the pain position.
26	<i>Pulicaria jaubertii</i> E. Gamal-Eldin. Asteraceae	E	Constipation, headache	Fresh leaves treat the headache by put it on the head.
27	<i>Anacyclus pyrethrum</i> (L.) Lag. Asteraceae	F, L	Depression and anxiety	Boil the dried leaves and then drink them.
28	<i>Tagetes erecta</i> L. Asteraceae	F, L	Anti-inflammatory and analgesic	Boiled leaves with flowers and drink.
29	<i>Helichrysum foetidum</i> var. foetidum Asteraceae	L	Wounds, anti-inflammatory and analgesic	Contain pain-relieving, anti-inflammatory, Plant leaves powder treated wounds.
30	<i>Flaveria trinervia</i> (Spreng.) C. Mohr. Asteraceae	L	Warts	Removes warts with put soft leaves on warts.
31	<i>Xanthium strumarium</i> L. Asteraceae	L	Fever	Dry leaves mixed with milk are used for fever.
32	<i>Tripteris vaillantii</i> Decne. Asteraceae	Fl, L	Hair	Leaves and flowers wash the hair and prevent loss hair.
33	<i>Sonchus arvensis</i> L. Asteraceae	L	Cough and Asthma.	Boiled leaves used to treat cough and asthma.
34	<i>Tecoma stans</i> (L.) Juss. ex Kunth. Bignoniaceae	F, L	Diabetes	Decoction leaves and plant flowers to treat diabetes.
35	<i>Cordia africana</i> lam. Boraginaceae	E	Diarrhea	Eat fruits to treat the diarrhea.
36	<i>Heliophyllum longiflorum</i> (A. DC.) Jaub. & Spach. Boraginaceae	L	Snake bites and scorpion toxins	It is used to treat snake bites and scorpion toxins by put the plant juice on the injury site.
37	<i>Ehretia cymosa</i> Thonn. Boraginaceae	L, Fr	Pneumonia, dry cough, malaria	The leaves of the plant are used dry and grated or boiled with water and drink or in the form of tablets.
38	<i>Trichodesma africanum</i> (L.) Sm. Boraginaceae	L	Wounds	Crushing the leaves and put them on the bleeding wound.
39	<i>Raphanus raphanistrum</i> L. Brassicaceae	R, L	Kidney stones	Decoction of roots used to remove the kidney stones in the morning before breakfast.
40	<i>Eruca vesicaria</i> (L.) Cav. Brassicaceae	L	Promoting libido	Where they claim to be useful for promoting libido.
41	<i>Commiphora myrrha</i> (Nees) Engl. Burseraceae	L	Fever, stomach ulcers, urinary tract infections, and mental illness	Mixing resin powder with milk and drinking in morning and evening.
42	<i>Opuntia dillenii</i> (Ker Gawl.) Haw. Cactaceae	F, S	Diabetes, hemorrhoids	Its mature fruits are eaten to treat diabetes, but its immature fruits are eaten to remove hemorrhoids.
43	<i>Capparis cartilaginea</i> Decne. Capparaceae	L, F	Cancer, skin ulcers, strengthen teeth, rheumatism	Uesful for cancerous tumors and treat skin ulcers in the head, strengthen teeth, treat rheumatism.
44	<i>Carica papaya</i> L. Caricaceae	L, Fr, R, S	Diuretic, anthelmintic, dyspepsia	Papaya can be used as a diuretic (the roots and leaves), anthelmintic (the Leaf and seed), also used to combat dyspepsia and other digestive.
45	<i>Catha edulis</i> (Vahl.) Endl. Celastraceae	L, S	Diabetes, stimulant	It is popularly used to soothe symptoms of diabetes and general stimulant.
46	<i>Convolvulus arvensis</i> L. Convolvulaceae	L, R	Fever, itching and skin irritation, tumors, diarrhea	For the itching and skin irritation, it treat the tumors that are in the joints and the viscera if used with the option of the shinbar, to lessening the diarrhea was more invasive, and is useful for fever.

47	<i>Citrullus colocynthis</i> (L.) Schrad. Cucurbitaceae	L, Fr	Leprosy, elephantiasis, and the tumors, toothache.	Useful for leprosy, elephantiasis. It dissolves tumors and ripens them. It is cooked with vinegar, and used to treat toothache.
48	<i>Lagenaria siceraria</i> (Molina) Standl. Cucurbitaceae	S	Hair	Seed oil for lengthening hair.
49	<i>Rhazya stricta</i> Decne. Apocynaceae	L	Rheumatic	Put compresses of hot plant leaves on joints.
50	<i>Cucumis dipsaceus</i> Ehrenb. ex Spach. Cucurbitaceae	Fr	Hemorrhoids	Plant juice used to treat hemorrhoids
51	<i>Cucumis prophetarum</i> L. Cucurbitaceae	Fr	Liver, stomach	Liver diseases, stomach pain.
52	<i>Cyperus rotundus</i> L. Cyperaceae	B	Typhoid, malaria	A decoction of tuber is given to patient for 7 days in typhoid. Treats malaria by taking about 12 g of root powder.
53	<i>Acalypha lanceolata</i> Willd. Euphorbiaceae	L	Malaria, diabetes	Plant juice used with sugar or honey in the treatment of malaria and diabetes.
54	<i>Acalypha indica</i> L. Euphorbiaceae	L	Malaria, relieves, fever	Plant juice mixed with yogurt treats malaria and relieves pain and fever.
55	<i>Jatropha Curcas</i> L. Euphorbiaceae	Fr	Wounds	Plant juices used to treat bleeding wounds.
56	<i>Ricinus communis</i> L. Euphorbiaceae	Oil, L	A headache, insanity and epilepsy, chronic constipation.	The head is painted with olive oil, coated with leaves of the plant heated to treat headache and epilepsy, drinking a small amount of oil to treat constipation.
57	<i>Acacia gerrardii</i> Benth. Fabaceae	L, S	Cough	Plant gum is used after dissolving in water and mixed with honey to treat cough.
58	<i>Acacia nilotica</i> L. Fabaceae	L, R	Dysentery	The roots and leaves powder handles dysentery
59	<i>Tamarindus indica</i> L. Fabaceae	Fr	Nausea, infections	Plant fruit juice treats nausea and stomach infections.
60	<i>Cynodon dactylon</i> (L.) Pers. Poaceae	A	Kidney stones	Boil the root powder with water to remove and break the kidney stones.
61	<i>Mentha spicata</i> L. Lamiaceae	L	Coughs, colic in infants, flatulence	Peppermint tea is used to treat cough, bronchitis and mucositis of the mouth and throat, and plant juice is used to treat colic in children.
62	<i>Lavandula pubescens</i> Decne. Lamiaceae	L, S	Dyspnea	A boiled syrup leaves the plant to treat respiratory distress.
63	<i>Ocimum basilicum</i> L. Lamiaceae	L, Fl	Headache	Boiled the leaves of plant and drink it as analgesic headache.
64	<i>Origanum vulgare</i> L. Lamiaceae	L	Circulatory system	Powder of leaves mixed with milk or honey to stimulate the body and circulatory system.
65	<i>Plectranthus aegyptiacus</i> (Forssk.) C. Chr. Lamiaceae	L	Wounds	leaves powder put on the wounds to be treated, plant oil to treat eczema.
66	<i>Thymus serpyllum</i> L. Lamiaceae	L	Coughs, kidney	Thyme leaves are boiled to treat cough and remove the kidney stones
67	<i>Marrubium vulgare</i> L. Lamiaceae	L	Wounds, Coughs	Powder leaves treat wounds, and boiled syrup plant coughs.
68	<i>Lawsonia inermis</i> L. Lythraceae	L	Tumors, sores	Leaf for treatment of tumors and sores if they are grafted and incubated by tumors.
69	<i>Azadirachta indica</i> A. Juss. Meliaceae	L, Fl	Kidney	Plant powder to remove kidney stones.
70	<i>Ficus carica</i> L. Moraceae	Fr	Colds	It is eaten in cold days for treatment and prevention of cold weather.
71	<i>Ficus cordata</i> Thunb. Moraceae	M	Wounds.	Used to stop bleeding and treat wounds. Milky sap used for skin allergy from external causes.
72	<i>Ficus glumosa</i> Delile. Moraceae	L	Cough, lose weight	The leaves are boiled with one liter of water to treat cough and lose weight.
73	<i>Ficus sycomorus</i> L. Moraceae	L, Fr	Cough	Leaves used cure to cough.
74	<i>Psidium guajava</i> L. Myrtaceae	L, F	Cough	It uses boiled leaves of the plant to treat cough.
75	<i>Eucalyptus camaldulensis</i> Dehnh. Myrtaceae	L	Faro parasites	Smoke of dry leaves to kill Faro parasites. Oil is aromatic.
76	<i>Myrtus communis</i> L. Myrtaceae	L	Hemorrhoids, diarrhea	Dried vegetable leaves are used to treat hemorrhoids and diarrhea.
77	<i>Mirabilis jalapa</i> L. Nyctaginaceae	R	Abdominal worms, strengthen sexual activity	Root powder is used with a cup of boiled water to strengthen sexual activity, and seeds are used to kill the abdominal worms.
78	<i>Oxalis corniculata</i> L. Oxalidaceae	L	Warts, inflamed, wounds, itches	Leaves are used to remove warts and inflamed parts. Juice of the leaves is used to cleanse wounds and for itches.
79	<i>Rumex vesicarius</i> L. Polygonaceae	L	Gingivitis, throat, stomach, ant pinch, bites of scorpions	To stop bleeding and treat gingivitis, throat and stomach ache leaf juice used to treat the ant pinch and bites of scorpions.
80	<i>Argemone mexicana</i> L. Papaveraceae	L, S	Wounds	Wound treatment and sterilization from bacteria by put fluid from the plant on the wound site.
81	<i>Datura stramonium</i> L. Solanaceae	S, Fr,R	Wounds	The dried leaves, flowers and roots used as narcotic to relieve pain.
82	<i>Sesamum indicum</i> L. Pedaliaceae	S, L	Constipation, moisturize the	Sesame oil is used to treat constipation and lubricate the stomach. Energy food.

			stomach	
83	<i>Plantago lanceolata</i> L. Plantaginaceae	L	Wounds, Toothache	It is used in the treatment of wounds and a sedative for toothache, if it is crushed and put on the aches.
84	<i>Zea mays</i> L. Poaceae	S,Fl	Kidney	The plant's filaments are used to break up the kidney stones with boiling water.
85	<i>Portulaca oleracea</i> L. Portulacaceae	L	Gastric pain	Plant leaves are used for gastric pain.
86	<i>Actiniopteris semiflabellata</i> Pic. Serm. Pteridaceae	E	Wounds, burns	The plant is used to treat wounds and burns by Fresh or dried leaf paste is applied topically.
87	<i>Adiantum capillus-veneris</i> L. Pteridaceae	L	Blisters	Tingling coughs to treat blisters in the mouth.
88	<i>Ziziphus spina-christi</i> (L.) Desf. Rhamnaceae	E	Hair	Fresh leaves are used after grinding to wash the hair to strengthen and intensify
89	<i>Ruta chalepensis</i> L. Rutaceae	L	Abdominal pain, infections of the ear and teeth, headaches	Treats the abdominal pain by crushing the soft leaves and mixing them with milk for the patient to drink. Extract treats the infections of the ear and teeth, headaches.
90	<i>Dodonaea viscosa</i> (L.) Jacq. Sapindaceae	E	Menstruation	Plant leaves are used after boiling with water to treat menstruation problems.
91	<i>Solanum incanum</i> L. Solanaceae	L, Fr, S	Wounds, stomach	The leaves are crushed and placed on bleeding wounds to be cleared of bacteria. Plant paste applied on the stomach of small babies to relieve pain.
92	<i>Withania somnifera</i> (L.) Dunal Solanaceae	L, R	Benign tumors, enhance memory	Green leaf powder treats tumors, wounds, and dry root powder to strengthen immunity and memory.
93	<i>Solanum nigrum</i> L. Solanaceae	L, Fl	Stomach, infections	Plant juice is used to treat stomach and internal infections.
94	<i>Urtica urens</i> L. Urticaceae	E	Hair, infections	Oil on joint pain; extract with honey to kill worms.
95	<i>Lantana camara</i> L. Verbenaceae.	L, S, F	Insect repellent	Fumigation of dry leaves expels harmful insects from homes.
96	<i>Cissus quadrangularis</i> L. Vitaceae	S, R	Stomach ulcers, malaria	Dry plant powder treatment for stomach ulcers, malaria, abdominal worms.
97	<i>Cissus rotundifolia</i> Vahl. Vitaceae	L, S	Ear pain, against rotor	The plant is used to treat ear pain and against rotor. The leaves are dried and crushed and added to the broth in the name of the sour gravy.
98	<i>Tribulus terrestris</i> L. Zygophyllaceae	Fr	Occasional slugs, muscle tumors, snake bites, kidney	Powder mixed with honey, it removes the occasional slugs in the mouth, muscle tumors on the sides of the throat, gum pain and helps in the treatment of snake bites, and fruits to get rid of salts and remove stons from the kidneys.
99	<i>Fagonia indica</i> Burm.f. Zygophyllaceae	E	Stomach	The plant is used for hyper acidity problems.
100	<i>Trigonella foenum-graecum</i> L. Leguminosae	S	Diuretic, laxative of the abdomen, constipation	Soaked plant seeds softening of the process of birth, diuretic, laxative of the abdomen, treatment of constipation.
101	<i>Allium ampeloprasum</i> L. Alliaceae	L	Pregnancy	The leaves used to treat delayed pregnancy.
102	<i>Crinum album</i> (Forssk) Herb. Alliaceae	B	Burns	Plant bulbs are used to treat burns.

(E = Entire plant; L= leaves; Fl=Flowers; Fr= Fruits; R= Roots; S= Seeds)

#### 4. Discussion

The results of this study after the survey, assessment, and interviews indicate that the number of plant species used medically about 102 as shown in Table (1). The table included data for each type such as scientific name, common name, part used, disease, and method of use. The local population uses medicinal plants to treat many diseases, including a cough, diabetes, infections, the expulsion of worms, intestinal ulcers, respiratory infections, kidney disease, cirrhosis, gallbladder, cancer, tumors, burns, Antibacterials. During the survey, one common thing was observed that a single plant was used for more than one diseases. For example *Coriandrum sativum* L. (Acne, Treatment of Flatulence, Calmative, Appetizer, Jaundice, Antiseptic). *Ruta chalepensis* L. (Abdominal pain, infections of the ear and teeth, headaches). *Allium sativum* L. (Abdominal, worms, Cancer). *Rumex vesicarius* L. (Gingivitis, throat, stomach, ant pinch, bites of scorpions). Asteraceae had a relatively high number of species [12], Lamaiceae [7], Alliaceae, Moraceae and Cucurbitaceae [5], Euphorbiaceae, Asclepidaceae, Boraginaceae, Brassicaceae, Solanaceae [4], followed by Fabaceae, Apocynaceae,

Amaranthaceae, Myrtaceae and Askaragaceae [3], and the rest of the 12 families had [2] each species. The remaining 24 plant species contain one species.

#### Plant Parts Used for Medicine

According to the ethnobotanical data results; leaves are the most commonly used plant parts accounting for 43% of the total, followed by fruits (11%), stem (10%) and seeds (8%), roots (8%), the rest of the plant parts represented 20%. The use of other plant parts is as indicated in (Fig. 2). In agreement with this study, other studies conducted in different parts of Ethiopia indicated that the leaves are more commonly used by locals than the other parts of the plant (Kebede, 2016) [28].

When you use the plant as a medicine, you should keep the plants alive to, in turn keep you alive too, my study differed from the rest studies in the order use of other parts of the plant, that is because of the difference of knowledge from one area to another, and at the same time of the different diseases from one community to another. Percentage of different plant parts is used in traditional medicine.

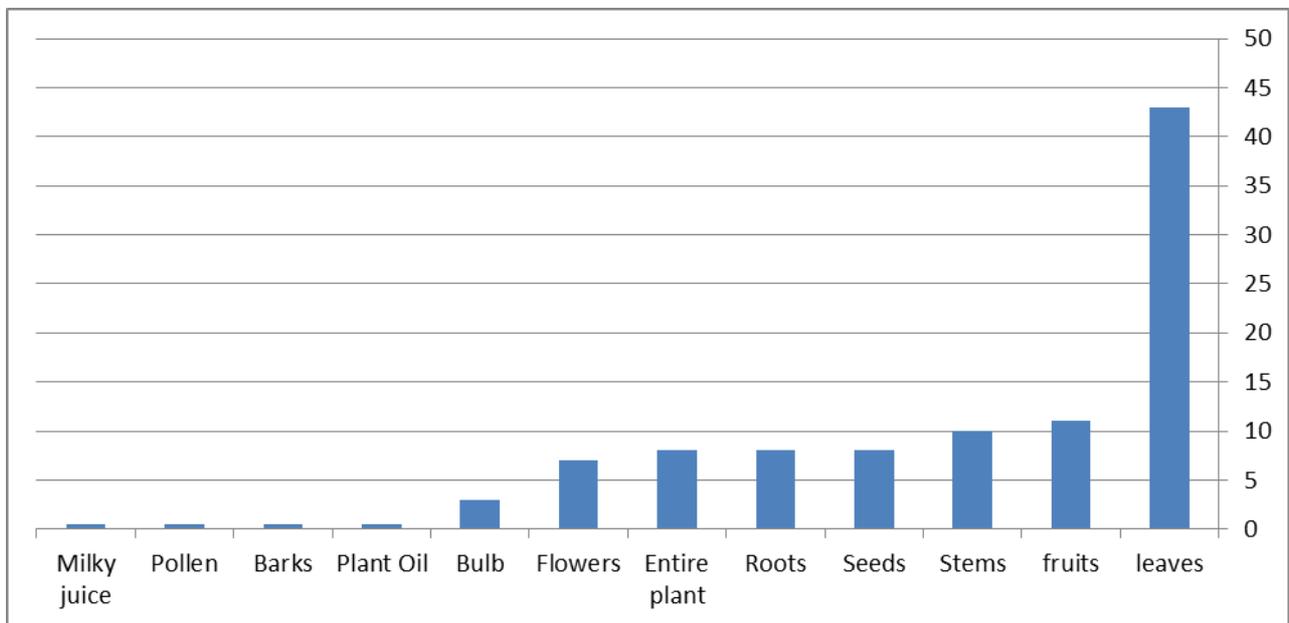


Fig 2: Percentage of different plant parts used in traditional medicine

## 5. Conclusion

The Floristic and Ethnobotanical survey of different parts of Hajjah district of Yemen state, Yemen revealed that this area is rich in plant diversity and 102 of these species are utilized in the treatment of various human diseases. These medicines are prepared from herbs, and use of whole plant or leaves is most common for preparing medicine.

However, an increased human activity due to urbanization and industrialization is posing a threat not only to flora of this region but also to the species which are used as medicines by the local people.

Therefore, there is an urgent need to spread awareness among local people by promoting measures such as, controlled grazing, reforestation, proper land management to promote the sustainable use of medicinal plants.

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