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Lakhdari W

National Institute of Agronomic
Research, Station of Sidi Mehdi,
Touggourt, Algeria

Dehliz A

National Institute of Agronomic
Research, Station of Sidi Mehdi,
Touggourt, Algeria

Acheuk F

Department of Biology, Faculty of
Sciences, University of Boumerdes,
Valcore Laboratory, Algeria

Mlik R

A) National Institute of Agronomic
Research, Station of Sidi Mehdi,
Touggourt, Algeria
B) Department of Agronomy, Faculty
of Life and Natural Sciences,
University of Ouargla, Algeria

Hammi H

National Institute of Agronomic
Research, Station of Sidi Mehdi,
Touggourt, Algeria

Doumandji-Mitiche B

National and Superior School of
Agronomy, El-Harrach, Algiers,
Algeria

Gheriani S

National Institute of Agronomic
Research, Station of Sidi Mehdi,
Touggourt, Algeria

Berrekbia M

Research Scholar,
Survey of Medicinal Plants Unit,
National Ayurveda Dietetics
Research Institute

Guermit K

Department of Agronomy, Faculty of
Life and Natural Sciences, University
of Ouargla, Algeria

Chergui S

Department of Agronomy, Faculty of
Life and Natural Sciences, University
of Ouargla, Algeria

Correspondence

Lakhdari W

National Institute of Agronomic
Research, Station of Sidi Mehdi,
Touggourt, Algeria

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Ethnobotanical study of some plants used in traditional medicine in the region of Oued Righ (Algerian Sahara)

Lakhdari W, Dehliz A, Acheuk F, Mlik R, Hammi H, Doumandji-Mitiche B, Gheriani S, Berrekbia M, Guermit K, Chergui S

Abstract

The present study aims to census the ethnomedicinal plants occurring in the local traditional medicine of Oued Righ region in the Algerian Sahara. The information on medicinal uses of plants is based on a field survey, interviews, structured questionnaires and discussion with traditional healers and knowledgeable. This investigation made it possible to inventory 53 species belonging to 30 botanical families. Chenopodiaceae is the most dominant family that was used to treat various illnesses with a rate of 23.33 %; followed by the family of Asteraceae and Fabaceae with 16,66 %, Poaceae and Zygophyllaceae both with a rate of 13,33 %. These medicinal plants are prepared in various forms such as decoction, infusion, compress, inhalation, ointment, herb tea; which are made from sheets, stems, flowers, boughs, fruits, roots.

The dominant diseases that can be treated with more than two plants are; Indigestion, constipation, belly and stomach pain; Injury, wounds and skin diseases; diarrhea.

Keywords: Ethnobotany, medicinal plants, Traditional healers, Illnesses, Oued Righ.

1. Introduction

The study of medicinal plant is one of the methods of examining the interaction and relationships between biological and cultural components of the environment [1]. Ethnobotanical studies today are recognized as the most viable method of identifying new medicinal plants or refocusing on those earlier reported for bioactive constituents [2]; only few studies have been conducted in the assessment; chemical constituents of medicinal plants specifically in the identification of the structure of bioactive constituents of traditional medicinal plants in the country wise [3]. According to our investigations, few studies are conducted in our region (Oued Righ). It is therefore important to find new, selective pesticides compatible with the use of natural enemies that can minimize negative effects on the environment, including both fauna and flora. An acaricidal study was conducted in the laboratory of biological control in the experimental station of INRAA (Station of Sidi Mehdi), we have tested three different spontaneous plants (*Zygophyllum album*, *Cotula cinerea*, *Limoniatrium guyonianum*) against dust mite of date palm (*Oligonychus afrasiaticus*) [4]. Saharian plants are known by their resistance to several stress factors. Under extreme climatic conditions, these plants could constitute a reservoir of new natural, safe and effective biomolecules potentially useful as antioxidants [5]. Ethnic medicine has contributed to the discovery and development of many drugs which are still in use, such as morphine, opium, the anaesthetic alkaloid [6]. The focus of this survey was to identify spontaneous plants of Oued Righ region (Algerian Sahara) that are used by the indigenous people in traditional medicines. This is the pioneer to attempt an exhaustive analysis of the therapeutic values of such medicinal plants, which are probably drawing the attention of pharmacologists and biological control's researchers for further critical and scientific validation.

2. Material and methods

2.1. Study area

The study was conducted in oasis region of Algerian sahara which is Oued Righ area (Figure 1). The valley of Oued Righ is a geographical entity situated in Southeastern Algeria between latitude 32° 54' and longitude 34 ° 09' [7].

6. *Sonchus oleraceus* L. (Family: Asteraceae; Vernacular name: Tifaf)

7. *Cistanche tinctoria* (Forssk.) Beck. (Family: Orobanchaceae; Vernacular name: Danon)

Parts of use: Aerial part (maceration and decoction)

Investigation: Diarrhea

This plant has medicinal virtues; like the underground part of young shoots is useful against intestinal problems and diabetes [11]; Agalactia, stomach pain [12].

8. *Euphorbia guyoniana* Boiss. & Reut (Family: Euphorbiaceae; Vernacular name: Labina)

Investigation: diarrhea, skin diseases, scorpion stings and snake bites.

This plant is very toxic like many euphorbias which often contain toxic white latex. But the nomads use it against snake bites [10, 11].

9. *Genista saharae* Coss & Dur. (Family: Fabaceae; Vernacular name: Marekh)

Investigation: Cold, influenza, respiratory system problems.

It contains flavonoids compounds [13]

10. *Nitraria retusa* (Forssk) Asch. (Family: Zygophyllaceae; Vernacular name: Ghardek)

Parts of use: Leaves (Cataplasme)

Investigation: Analgesic, antiseptic and anti-inflammatory, skin diseases.

This plant has medicinal virtues; antiseptic, cutaneous wound, burn, diabetes, fever, constipation, laxative, diarrhea, cardiac disease, scorpion stings, cough, gastric ulcer, cephalalgia, hypertension, loss of appetite, colon, prostate, articular pains, conjunctivitis, diseases of eyes and eyelids, weakness of vision, fortify the gum [11, 15].

11. *Tamarix gallica* L. (Family: Tamaricaceae; Vernacular name: Torfa)

Investigation: Cough, hemorrhage, diuretic, appetite, anti-fever.

Antiseptic, burn, leprosy, injuries and ulcers, scorpions and bugs stings, illnesses of the kidney, diarrhea, anemia, jaundice, gum and mouth inflammation, gastric ulcer, cephalalgia, hypertension, diabetes, illness of joints, hemorrhage, diuretic, pancreas inflammation [15].

12. *Cotula cinerea* Del. (Family: Asteraceae; Vernacular name: Chouhia)

Parts of use: Leaves and boughs (Infusion, decoction, maceration, inhalation, powder)

Investigation: Purgative and laxative, Intensive and stimulant, anti-virus and fungi, diarrhea, indigestion.

Cotula cinerea is a local medicinal plant which can be used in colic, diarrhea, cough, cooling broncho-pulmonary, migraine, headache, disorders and digestive [10, 12, 16].

13. *Retama retam* Webb. (Family: Fabaceae; Vernacular name: Rtem)

Parts of use: Aerial part (Infusion, powder, compressed herbal)

Investigation: Analgesic, antiseptic and anti-inflammatory.

In traditional medicine, this plant is sought for its stem used in cauterization. Also it is useful against rheumatism, scorpion stings, injury [12].

14. *Solanum nigrum* L. (Family: Solanaceae; Vernacular name: Anb Aldib)

Parts of use: Leaf, stem and fruits.

It is a toxic plant, in pharmacopoeia, it is deemed active and dangerous. In fact, it is for external use [11]. Effective in diuretic, chronic enlargement of liver, dysentery and piles; also useful against skin disease and anthrax. Fruits are used in tonic, heart diseases, hiccup, asthma, fever, bronchitis and diarrhea. Pastes of green fruits are effective in ringworm. Fruit juice is useful for expectorant, cooling drink in fevers, thirst gonorrhea, giddiness and inflammations [17].

15. *Atriplex halimus* L. (Family: Chenopodiaceae; Vernacular name: Gtef)

Investigation: uterus cysts, diabetes

This plant has medicinal virtues viz; stomach pain, constipation, diarrhea, gas, bloating, cyst hydatique, fibrome, hypertension, antiseptic, burns, diabetes, fever, jaundice, anemia, cardiac disease, otitis, rheumatism, cough, obesity, tumor, tiredness, diuretic, vermifuge, involuntary urine, vomiting, wounds and ulcers, tonsillitis, goiters, gallbladder disease, calming, fortify the gums, infertility, prostate, fall of placenta, nephrolithiasis, hypercholesterolemia [15].

16. *Limoniastrum guyonianum* Coss & Dur. (Family: Plumbaginaceae; Vernacular name: Zita)

Investigation: Diabetes, scorpion stings and snake bites, headache, constipation, hypertension and kidney diseases, anemia.

Antiseptic, burn, leprosy, wounds and ulcers, strengthening, diabetes, jaundice, anemia, cough, constipation, gas, kidney disease, pains of the head, hypertension, obesity, scorpion stings, tonsillitis and flu, fortify the gum, liver disease [15].

17. *Zygophyllum album* L. (Family: Zygophyllaceae; Vernacular name: Agga)

Parts of use: Leaves, stems, fruits (Decoction, powder, ointment)

Investigation: Diabetes, purgative and laxative, anti-virus and fungi, indigestion

According to [12], this plant is useful to treat diabetes, indigestion, skin diseases, analgesic and like a disinfectant. This plant is used in the Tunisian folk medicine as a drug active against rheumatism, gout, and asthma [18]. It is also used as diuretic, local anaesthetic, antihistaminic, and antidiabetic agent [19].

18. *Traganum nudatum* Del. (Family: Chenopodiaceae; Vernacular name: Damran)

Parts of use: Leaves (Compressed maceration, powder and ointment)

Investigation: Rheumatism, skin diseases.

This plant has medicinal virtues, it is used against diarrhea, and rheumatism wound dermatoses [12]. This plant is also known locally for its wood for combustion and also for its edible fruit [11].

19. *Zizyphus lotus* L. (Family: Rhamnaceae; Vernacular name: Nbak/Sedra)

Parts of use: Leaves, fruits and roots (Decoction and maceration)

Investigation: Analgesic, antiseptic and anti-inflammatory, cough.

According to [11] it is a common plant in traditional medicine. Its root decoction is used to treat diseases of the gastrointestinal tract and liver. The fruit is mainly used in the treatment of the respiratory system. It has other properties, such as: its tonic value, emollient and sedative. It is also used as a defensive hedge. Also [12] find that it was used like an anti-inflammatory, pectoral, emollient, and sedative, diuretic.

20. *Halocnemum strobilaceum* (pall) M. Bied. (Family: Chenopodiaceae; Vernacular name: Grina)

Parts of use: Aerial part

Investigation: Fever, Intensive and stimulant, headache,

21. *Panicum turgidum* Forssk. (Family: Poaceae; Vernacular name: Bourekba)

Parts of use: Leaves and bough

Investigation: Skin diseases

Local inhabitants may chew the plant for treating toothache and use the extract of the plant in treating wounds. Similarly, Maire (1933), Boulos (1983), Turner (1983) reported that *P. turgidum* is used by local inhabitants in treating wounds and removing eye spots [20].

22. *Plantago ciliata* Desf. (Family: Plantaginaceae; Vernacular name: Lalma)

Parts of use: Leaves and bough

Investigation: Analgesic, antiseptic and anti-inflammatory.

It is used for cicatrizing injuries and useful like an inflammatory treatment [11].

23. *Astragalus gyzensis* Bunge. (Family: Fabaceae; Vernacular name: Foul Alibil)

Investigation: Scorpion stings and snake bites.

Depend to [11], this plant is used against snake bites

24. *Anabasis articulata* (Forssk.) Moq (Family: Chenopodiaceae; Vernacular name: Baguel)

Investigation: Diarrhea, skin diseases, scorpion stings and snake diseases, infections of reproductive system, headache.

25. *Helianthemum lippii* (L.) Pers. (Family: Cistaceae; Vernacular name: Al-rakik/Al-oud)

Parts of use: Leaves (Powder or compressed)

Investigation: It is useful to treat skin lesions.

26. *Oudneya africana* R. Br. (Family: Brassicaceae; Vernacular name: Hanet Al-baiir)

Parts of use: Leaves and stems (Compress, external powder)

Investigation: It is useful to treat skin diseases and lesions.

Several researches find that this plant is useful against skin illness [11, 12].

27. *Plantago coronopus* L. (Family: Plantaginaceae; Vernacular name: Fanous rghemi)

According to [11], this plant is softening, emollient and laxative.

28. *Randonia africana* Coss. (Family: Rasedaceae; Vernacular name: Boukhellal)

Parts of use: Leaves and boughs (Infusion)

Investigation: It is useful to treat scorpion stings and snake bites.

29. *Aristida pungens* (Desf.) DeWinter (Family: Poaceae; Vernacular name: Drin)

Parts of use: Aerial part (Maceration, herb tea)

Investigation: It is useful to treat indigestion; also useful like astringent and stimulant.

Allowing to [12], they find that it can be used against constipation, stomach pain, indigestion.

30. *Colocynthis vulgaris* (L.) Schrad. (Family: Cucurbitaceae; Vernacular name: Handal/Hedja)

Parts of use: Fruits, pulp (Decoction, infusion, cataplasm, ointment, compress)

Investigation: Diabetes, Analgesic, antiseptic and anti-inflammatory, belly and stomach pain, skin lesions, scorpion stings and snake bites, hemorrhoids.

It is a useful plant in the traditional medicine of our region. It's a purge. An external use, it can be used like an antirhumatismal with a local application, also as a furuncle. It treats dromedaries against dermatosis [11]. Also, [12] said that it is used against diabetes and belly wimps, dermatosis, scorpion stings, rhumatisme, genital infection

31. *Ricinus communis* L. (Family: Euphorbiaceae; Vernacular name: Kharouaa)

The seeds of this plant are very toxic. Its fatty oil (about 50%) is used as brilliantine to treat and relax the hair, also to treat hairy leather [11].

32. *Cornulaca monacantha* Del. (Family: Chenopodiaceae; Vernacular name: Al-had)

Parts of use: Leaves and boughs (Ointment, infusion, maceration)

Investigation: Liver diseases

It is a useful plant in the traditional medicine against liver diseases [12].

33. *Matricaria Pubescens* (Desf) (Family: Asteraceae; Vernacular name: Guartoufa)

Parts of use: Leaves (Powder)

Investigation: Scorpion stings and snake bites, cold and problems of respiratory system, hemorrhage, diuretic, fever, astringent and stimulant, belly and stomach pains, constipation,

In the region of Oued Righ, this plant is used against scorpion stings and snake bites [11].

34. *Cynomorium coccineum* L. (Family: Cynomoriaceae; Vernacular name: TARTHOUTH)

Parts of use: Leaves

Investigation: Diarrhea

According to [11], this medicinal plant is useful against diarrhea.

35. *Erodium glaucophyllum* L Her. (Family: Geraniaceae; Vernacular name: Tommir)

Parts of use: All its parts are useful

Investigation: Diarrhea, cold, influenza and problems of respiratory system

It is a medicinal plant in the region of Oued Righ, it is useful against diarrhea, astringent, allergy, oxytocin [11].

36. *Urginea noctiflora* Batt. & Trab. (Family: Liliaceae; Vernacular name: Bssis Alfar)

Parts of use: Bulb (Powder, compress)

It treats wound and ear wimps [11, 12].

37. *Neurada procumbens* L. (Family: Rosaceae; Vernacular name: Anfal/Saadon)

Parts of use: Leaves

Investigation: Analgesic, antiseptic and anti-inflammatory, astringent and stimulant.

38. *Daucus carota* L. (Family: Umbellifera; Vernacular name: Zrodia)

Parts of use: Leaves, seeds

Investigation: Urinary tract, cyst.

This plant is useful for diuretic, improve the vision, enhance liver's action, and stimulate the urinary production, junk's elimination through kidney, struggle cystitis, Menstrual [11].

39. *Asphodelus refractus* Boiss. (Family: Liliaceae; Vernacular name: Tazia)

Investigation: Indigestion, constipation, wound of stomach, skin diseases, equilibrate the body.

40. *Ammodaucus leucotricus* Coss. & Dur. (Family: Apiaceae; Vernacular name: Om Drigua)

Parts of use: Fruits (Powder, infusion, decoction)

Investigation: Diuretic, appetite, diarrhea, diabetes, indigestion

In the southeastern Algeria, this plant can be used to treat wound of stomach, diarrhea, digestive problems and vomit, also useful against allergy and palpitation [10, 12].

41. *Nerium oleander* L. (Family: Apocynaceae; Vernacular name: Defla)

Parts of use: Leaves, flowers, fruits, boughs (Administration with a rectal way)

Investigation: Heart diseases, anti-virus and fungi, fracture.

This plant is widely used in traditional medicine in the region for the treatment of several diseases including: diuretic, heart diseases, uterus disease and hemorrhage [10, 12].

42. *Haloxylon articulatum* Boiss. (Family: Chenopodiaceae; Vernacular name: Remth)

Parts of use: Leaves, boughs, flowers (Decoction, maceration, cataplasm, ointment)

Investigation: Diarrhea, skin diseases, headache, indigestion.

This plant is used in traditional medicine for the treatment of several diseases like: Indigestion, scorpion stings, skin disease, dorsum disease [10, 12].

43. *Fagonia glutinosa* Delile. (Family: Zygophyllaceae; Vernacular name: Komida)

Parts of use: Leaves

Investigation: it is useful against skin disease, mouth problems for babies, body weakness, and fracture, muscle spasm

44. *Pergularia tomentosa* L. (Family: Asclepiadaceae; Vernacular name: Har)

Part of use: Leaves, flowers (inhalation, external powder)

Investigation: it is useful against skin disease, cold, influenza and problems of respiratory system

P. tomentosa is a medicinal plant that can treat skin disease, angina and scorpion stings [10, 12, 13].

45. *Cleome arabica* L. (Family: Capparidaceae; Vernacular name: Nettin)

Parts of use: Leaves (Infusion, maceration)

Investigation: Rheumatism, urinary tract.

It is a rich plant with flavones compounds specially flavonoids; it is diuretic, also useful against rhumatisme, arthritis, diarrhea [10, 12, 13].

46. *Ephedra alata* spp. Alenda. Dec. (Family: Ephedraceae; Vernacular name: Alanda)

Parts of use: Leaves, boughs (Maceration, inhalation, herb tea)

Investigation: Cold, influenza, respiratory problems, hypertension

Several diseases are treated by this plant such as: cold, influenza, respiratory problems, hypertension, body weakness,

whooping cough [10, 12, 13].

47. *Calligonum comosum* L'herit. (Family: Polygonaceae; Vernacular name: Larta)

Parts of use: Leaves, roots, boughs (infusion, decoction)

Investigation: Scorpion stings and snake bites

According to [10, 12], this plant can be used against scorpion stings, vermifuge.

48. *Peganum harmala* L. (Family: Zygophyllaceae; Vernacular name: Harmal)

Parts of use: Seeds, roots (Decoction, herb tea, ointment)

Investigation: Urinary tract, fever, tapeworms, Strength and tonic.

This plant is used to treat the following diseases: fever, rheumatism [12]. Also can be used to strength body and tonic, expelling tapeworms, involuntary urine; also useful against asthma, fever [13].

49. *Salsola tetragona* Del. (Family: Chenopodiaceae; Vernacular name: Belbel)

Investigation: Diabetes, hypertension, Kidney diseases, constipation.

50. *Bassia muricata* L. Asch. (Family: Chenopodiaceae; Vernacular name: Ghabitha)

Investigation: Analgesic, antiseptic and anti-inflammatory

It is a rich plant with triterpenoids and saponins [13].

51. *Rhanterium suaveolens* Desf. (Family: Asteraceae; Vernacular name: Arfaj)

Investigation: Muscle spasm

The useful of this plant is recommended to treat dorsum pain [13].

52. *Launaea nudicaulis* (L.) Hook. (Family: Asteraceae; Vernacular name: Raghim Sahraoui)

Parts of use: Leaves

Investigation: Skin diseases, dermatoses

53. *Glycyrrhiza glabra* L. (Family: Fabaceae; Vernacular name: Arg Alsous)

Parts of use: Leaves, stems, boughs (Infusion, decoction)

Investigation: Anti-virus and fungi, chest Diseases, hypertension, rheumatism, pain of spleen and liver, stomach pain, eyes treatment, also useful like a deodorant, teeth cleaner.

Medicinal plants used to treat human

Nature has gifted Algerian Sahara with a lot of herbal medicines, which indigenous people acquire, preserve and pass to their next generation. In the table below (Tab. 1), 53 medicinal plant species belonging to 30 families were considered. Chenopodiaceae with seven species (*A. articulata*, *C. monacantha*, *A. halimus*, *H. strobilaceum*, *T. nudatum*, *B. muricata* and *S. tetragona*) is the most dominant family that was used to treat various illnesses with a rate of 23.33 %; followed by the family of Asteraceae and Fabaceae with 16,66 %, Poaceae and Zygophyllaceae both with a rate of 13,33 %. Most of the medicinal plant species investigated in this study is also medicinally useful in other parts of word and Algerian regions elsewhere [12, 15, 16, 17, 21, 22].

Table 1: Most species of medicinal plants that are used in Oued Righ region

Family	Species	Percentage (%)
Chenopodiaceae	<i>Anabasis articulata</i>	23,33
	<i>Cornulaca monacantha</i>	
	<i>Atriplex halimus</i>	
	<i>Halocnemum strobilaceum</i>	
	<i>Traganum nudatum</i>	
	<i>Bassia muricata</i>	
	<i>Salsola tetragona</i>	
Asteraceae	<i>Sonchus oleraceus</i>	16,66
	<i>Cotula cinerea</i>	
	<i>Matricaria Pubescens</i>	
	<i>Launaea nudicaulis</i>	
	<i>Rhanterium suaveolens</i>	
Fabaceae	<i>Melilotus indica</i>	16,66
	<i>Genista saharae</i>	
	<i>Retama retam</i>	
	<i>Glycyrrhiza glabra</i>	
	<i>Astragalus gyzensis</i>	

The results also indicated that most of medicinal plants were used to treat more than one health problem such as: *Haloxylon articulatum* Boiss, *Zygophyllum album* L., *Retama retam* Webb. were reported to treat Colic, diarrhea, cough, cooling broncho-pulmonary, migraine, headache, disorders and digestive [10, 12, 16] and Diabetes, indigestion, skin diseases, analgesic, disinfectant [12] diuretic, local anaesthetic, antihistaminic [23].

Table 2: Several diseases that are treated with different plants

Disease	Plants
Heart	<i>Nerium oleander</i>
Hemorrhage	<i>Cynodon dactylon</i> , <i>Tamarix gallica</i> , <i>Erodium glaucophyllum</i> , <i>Matricaria pubescens</i>
Anti - virus and fungi	<i>Cynodon dactylon</i> , <i>Cotula cinerea</i> , <i>Zygophyllum album</i> , <i>Erodium glaucophyllum</i> , <i>Nerium oleander</i> , <i>Glycyrrhiza glabra</i>
Liver and kidney	<i>Cynodon dactylon</i> , <i>Glycyrrhiza glabra</i> , <i>Cornulaca monacantha</i> , <i>Daucus carota</i> , <i>Limoniastrum guyonianum</i>
Rheumatism	<i>Cynodon dactylon</i> , <i>Melilotus indica</i> , <i>Traganum nudatum</i> , <i>Cleome arabica</i>
Diuretic	<i>Tamarix gallica</i> , <i>Ammodaucus leucotricus</i> , <i>Matricaria pubescens</i> , <i>Daucus carota</i>
Urinary and Reproductive system infections	<i>Cynodon dactylon</i> , <i>Daucus carota</i> , <i>Peganum harmala</i> , <i>Juncus maritimus</i> , <i>Cleome Arabica</i> , <i>Anabasis articulata</i> , <i>Haloxylon articulatum</i>
Fracture	<i>Fagonia glutinosa</i> , <i>Nerium oleander</i>
Gallbladder	<i>Cynodon dactylon</i> , <i>Juncus maritimus</i>
Appetite	<i>Tamarix gallica</i> , <i>Ammodaucus leucotricus</i>
Fever and jaundice	<i>Cynodon dactylon</i> , <i>Tamarix gallica</i> , <i>Halocnemum strobilaceum</i> , <i>Matricaria pubescens</i> , <i>Peganum harmala</i>
Astringent and laxative	<i>Cynodon dactylon</i> , <i>Cuscuta epithymum</i> , <i>Melilotus indica</i> , <i>Cotula cinerea</i> , <i>Zygophyllum album</i> , <i>Matricaria pubescens</i> , <i>Glycyrrhiza glabra</i>
Diarrhea	<i>Convolvulus arvensis</i> , <i>Euphorbia guyoniana</i> , <i>Melilotus indica</i> , <i>Cistanche tinctoria</i> , <i>Anabasis articulata</i> , <i>Cynomorium coccineum</i> , <i>Erodium glaucophyllum</i> , <i>Haloxylon articulatum</i> , <i>Traganum nudatum</i> , <i>Ammodaucus leucotricus</i>
Cysts	<i>Daucus carota</i> , <i>Atriplex halimus</i>
Muscle spasm	<i>Haloxylon articulatum</i> , <i>Rhanterium suaveolens</i> , <i>Fagonia glutinosa</i>
Indigestion, constipation, belly and stomach pain	<i>Melilotus indica</i> , <i>Cistanche tinctoria</i> , <i>Cotula cinerea</i> , <i>Zygophyllum album</i> , <i>Aristida pungens</i> , <i>Asphodelus refractus</i> , <i>Haloxylon articulatum</i> , <i>Ammodaucus leucotricus</i> , <i>Colocynthis vulgaris</i> , <i>Matricaria pubescens</i> , <i>Glycyrrhiza glabra</i> , <i>Fagonia glutinosa</i> , <i>Salsola tetragona</i> , <i>Limoniastrum guyonianum</i>
Hearing	<i>Urginea noctiflora</i>
Intensive and stimulant	<i>Peganum harmala</i> , <i>Hyosyamus muticus</i> , <i>Fagonia glutinosa</i> , <i>Ammodaucus leucotricus</i> , <i>Asphodelus refractus</i> , <i>Neurada procumbens</i> , <i>Cotula cinerea</i> , <i>Aristida pungens</i> , <i>Halocnemum strobilaceum</i>
Tapeworms	<i>Peganum harmala</i>
Anemia	<i>Limoniastrum guyonianum</i>
Injury, wounds and skin diseases	<i>Cynodon dactylon</i> , <i>Euphorbia guyoniana</i> , <i>Nitraria retusa</i> , <i>Plantago ciliata</i> , <i>Urginea noctiflora</i> , <i>Colocynthis vulgaris</i> , <i>Anabasis articulata</i> , <i>Oudneya Africana</i> , <i>Traganum nudatum</i> , <i>Launaea nudicaulis</i> , <i>Fagonia glutinosa</i> , <i>Pergularia tomentosa</i> , <i>Juncus maritimus</i> , <i>Zygophyllum album</i> , <i>Helianthemum lippii</i> , <i>Panicum turgidum</i> , <i>Asphodelus refractus</i> , <i>Haloxylon articulatum</i> , <i>Cistanche tinctoria</i>
Cough, cold, influenza and respiratory system	<i>Genista saharae</i> , <i>Zizyphus lotus</i> , <i>Erodium glaucophyllum</i> , <i>Matricaria pubescens</i> , <i>Ammodaucus leucotricus</i> , <i>Ephedra alata</i> , <i>Peganum harmala</i> , <i>Glycyrrhiza glabra</i> , <i>Pergularia tomentosa</i> , <i>Tamarix gallica</i>
Diabetes and obesity	<i>Zygophyllum album</i> , <i>Colocynthis vulgaris</i> , <i>Ammodaucus leucotricus</i> , <i>Limoniastrum guyonianum</i>
Analgesic, antiseptic and anti-inflammatory	<i>Juncus maritimus</i> , <i>Nitraria retusa</i> , <i>Cotula cinerea</i> , <i>Plantago ciliata</i> , <i>Zizyphus lotus</i> , <i>Zygophyllum album</i> , <i>Retama retam</i> , <i>Colocynthis vulgaris</i> , <i>Bassia muricata</i>
Scorpion stings and snake bites	<i>Euphorbia guyoniana</i> , <i>Anabasis articulata</i> , <i>Colocynthis vulgaris</i> , <i>Randonia Africana</i> , <i>Matricaria pubescens</i> , <i>Haloxylon articulatum</i> , <i>Calligonum comosum</i> , <i>Limoniastrum guyonianum</i> , <i>Astragalus gyzensis</i>
Hypertension	<i>Ephedra alata</i> , <i>Salsola tetragona</i> , <i>Limoniastrum guyonianum</i>
Headache	<i>Anabasis articulata</i> , <i>Tamarix gallica</i> , <i>Halocnemum strobilaceum</i> , <i>Haloxylon articulatum</i> , <i>Limoniastrum guyonianum</i>

The representing plants are mostly used to cure fever, diuretic, cardiac disease, scorpion stings, gastrointestinal disorders, piles, skin diseases, cough, abortion, gastric ulcer, cephalalgia, hypertension, loss of appetite, colon, prostate, articular pains,

conjunctivitis, diseases of eyes and eyelids, weakness of vision, fortify the gum asthma, jaundice, wounds and urinary problems. To improve the knowledge of medicinal plants and prevent the knowledge-loss, future work documenting

medicinal plant identification, formulation and treatment preparation are taken internally or applied externally. Most of the plants used in medicines are single or either mixed with other ingredients. The plant parts used for medical preparation were leaves, flowers, rhizomes, roots, seeds and boughs. The medicinal plant parts are processed in various forms (decoction, infusion,

inhalation, ointment, herb tea) and administered through various routes (oral, dermal, nasal and other body parts). However, plant part (s) and homogenizing it in water are the commonly used form of herbal preparation for both human. The oral administration which regrouped the major form of usage, which was in form of drink, was most exercised.



Cistanche tinctoria (forssk.) Beck.



Cotula cinerea del.



Limoniastrum guyonianum Coss & Dur.



Fagonia glutinosa Delile.



Traganum nudatum Del.



Halocnemum strobilaceum (pall)



Salsola tetragona Del.



Zygophyllum album L.

4. Conclusion

The present study focused on the need of proper documentation of medicinal plants that are used by the habitants of Oued Righ region for common diseases prevailing at this area.

The results of this study revealed a rich diversity of medicinal plants used to treat various disease conditions and ethnomedicinal knowledge, amongst the residents at the various communities in the valley of Oued Righ which may through proper scientific investigations may yield novel compounds to treat both old and emerging diseases. According to our investigation, an inventory of 53 species belonging to 30 families is collected. Chenopodiaceae with seven species (*A. articulata*, *C. monacantha*, *A. halimus*, *H. strobilaceum*, *T. nudatum*, *B. muricata* and *S. tetragona*) is the most dominant family that was used to treat various illnesses with a rate of 23.33 %; followed by the family of Asteraceae and Fabaceae with 16,66 %, Poaceae and Zygophyllaceae both with a rate of 13,33 %.

The study should be extended to other parts of the country to discover any unknown potential use of any medicinal plants That have not been mentioned before, but is being used for the centuries to treat many difficult diseases.

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