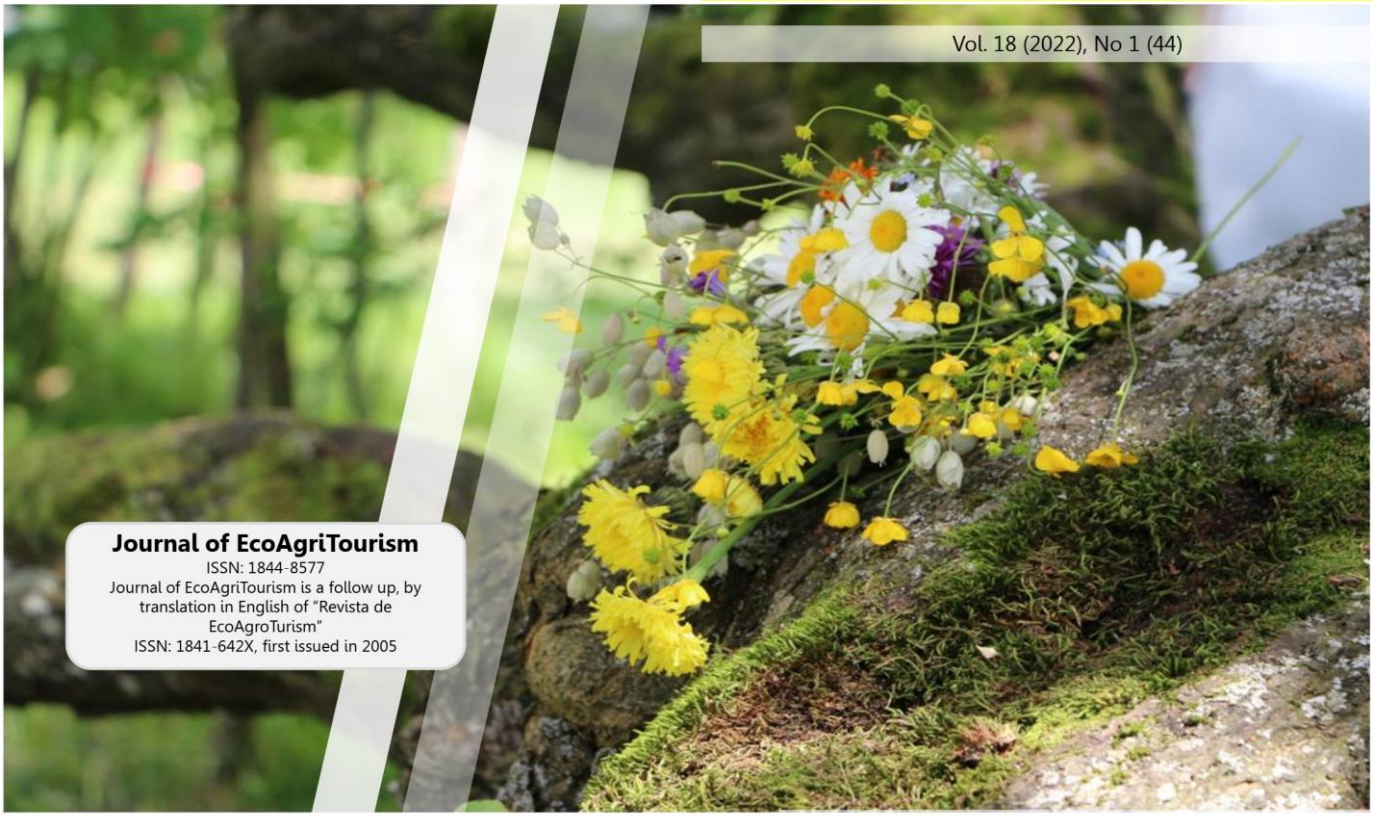
Journal of EcoAgriTourism

Bulletin of Agri-ecology, Agri-food, Bioengineering and Agritourism

Vol. 18 (2022), No 1 (44)



Journal of EcoAgriTourism
ISSN: 1844-8577
Journal of EcoAgriTourism is a follow up, by translation in English of "Revista de EcoAgroTurism"
ISSN: 1841-642X, first issued in 2005

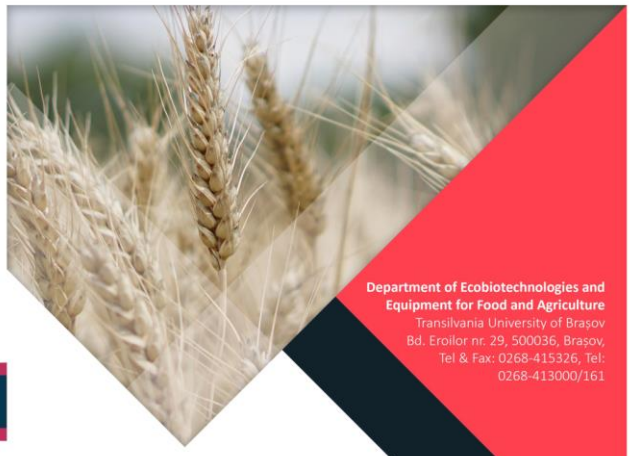
ISSN: 1844-8577

EcoAgriTourism, in the light of its multidisciplinary character, is a wide-open journal which brings together the opinions of specialists from both academic and economic environment, fostering fruitful collaborations.

The journal's structure covers all aspects of the fields approached, the focus being on original and current researches with applications in agriculture, food industry and rural tourism. Collaborators may feel free to undertake biological and technical aspects as well as aspects with social, cultural and environmental impact. Information of general interest is also welcome for the agriecology-food-tourism axis

Prof. Romulus Gruia Ph. D.

The Journal of EcoAgroTurism aims at approaching analyses, methodologies, options and references within the journal's framework.



Department of Ecobiotechnologies and Equipment for Food and Agriculture
Transilvania University of Brașov
Bd. Eroilor nr. 29, 500036, Brașov,
Tel & Fax: 0268-415326, Tel: 0268-413000/161

Published by:
Transilvania University Press
500091 Brasov, B-dul Iuliu Maniu 41 A
Tel: 0268-476050
Fax: 0268-476051
E-mail: editura@unitbv.ro
Co-editor: Romanian Society for Information Technology in Agriculture, Food, Environment and Tourism
www.rosita.ro/jeat
ISSN: 1844-8577

Center for Biodiversity in Agriculture and Forestry INCE/Romanian Academy-Research point ICDT/Transilvania University of Brasov
Romanian Society for Information Technology in Agriculture, Food, Environment and Tourism (ROSITA)

ETHNOBOTANICAL STUDY AND INVENTORY OF MEDICINAL PLANTS IN HAMMAM DALAA (M'SILA, ALGERIA)

N. DJERMANE [1.2], K. REBBAS [3.4*], S. BENHISSEN [3,5] & A. BELKASSAM[3]

[1] *Department of Natural and Life Sciences, Faculty of Exact Sciences and Natural and Life Sciences, Larbi Tebessi University, Tebessa, Algeria.*
[2] *Laboratory of natural substances, biomolecules and biotechnological applications, Larbi Ben M'hidi University, Oum El Bouaghi, Algeria*
[3] *Department of Natural and Life Sciences, Faculty of Sciences, Mohamed Boudiaf University of M'sila, 28 000, Algeria.*
[4] *Laboratory of Agro-Biotechnology and nutrition in arid and semi-arid zones. Ibn Khaldoun University, Tiaret, Algeria.*
[5] *Laboratory of Applied Neuroendocrinology, Department of Biology, Faculty of Sciences, University Badji Mokhtar Annaba 23000, Algeria.*
**Corresponding author : rebbas.khellaf@gmail.com ; khellaf.rebbas@univ-msila.dz*

Abstract *: The ethno-botanical surveys carried out using questionnaires in the region of Hammam Dalaa made it possible to inventory 68 medicinal species belonging to 35 botanical families and to collect as much information as possible concerning local traditional therapeutic uses. This study also showed that the leaves are the most used part. Recipes are basically prepared by decoction or powder. Of all the diseases treated, digestive disorders are the most frequent. These results are considered as a source of information for scientific research in the field of phytochemistry and pharmacology.*

Keywords: *M'Sila, Hammam Dalaa, medicinal plants, ethnobotany.*

1. Introduction

Medicinal plants continue to meet an important need, despite the existence and influence of modern health systems, about 35,000 species of plants are used worldwide for medicinal purposes, which forms the largest range of biodiversity used by humans [1].

These medicinal plants are important for pharmacological research and drug synthesis not only when their constituents are used directly as therapeutic agent but also as raw material for drug synthesis or model for pharmacologically active compounds [2].

Today, herbal treatments are coming back to the fore, as the effectiveness of drugs such as antibiotics (which is considered the near universal solution to serious infections) decreases as bacteria and viruses are adapted to drugs and their are increasingly resisting [3].

The most serious diseases, cancer, sclerosis which are treated in a very difficult way, but thanks to Phytotherapy which is an important alternative can bring comfort in the classic treatment of these serious diseases [4].

Medicinal plants constitute a precious heritage and a real treasure for humanity, and are in great demand in the world and more particularly in developing countries [5].

These medicinal plants are still a source of medical care in developing countries due to the lack of a modern medicinal system [6].

Traditional herbal medicine was well developed in Algeria, but the use of conventional medicine is the cause of a neglect of these ancestral practices, which risk falling into oblivion [7].

Alongside the programs of some international organizations such as the World Health Union (IUCN), which is interested in promoting the conservation of biodiversity and the sustainable use of natural resources in North Africa, and also the involvement of local communities in the biodiversity conservation [6].

The carrying out of ethnobotanical surveys in the region of Hammam Dalaa aims to obtain a floristic inventory of the medicinal plants used by the population and the collection of as much

information as possible on the therapeutic uses practiced in the study area.

The preservation of this knowledge is a challenge for the conservation and development of resources and this within the framework of the sustainable development of the study area.

2. Materials and method

2.1. Geographical location of the study area

The study area was located north of M'Sila. This area is limited to the north by El M'hir, to the east by Maadid, to the west by Ouanougha and to the south by the commune of M'Sila (Figure 1).

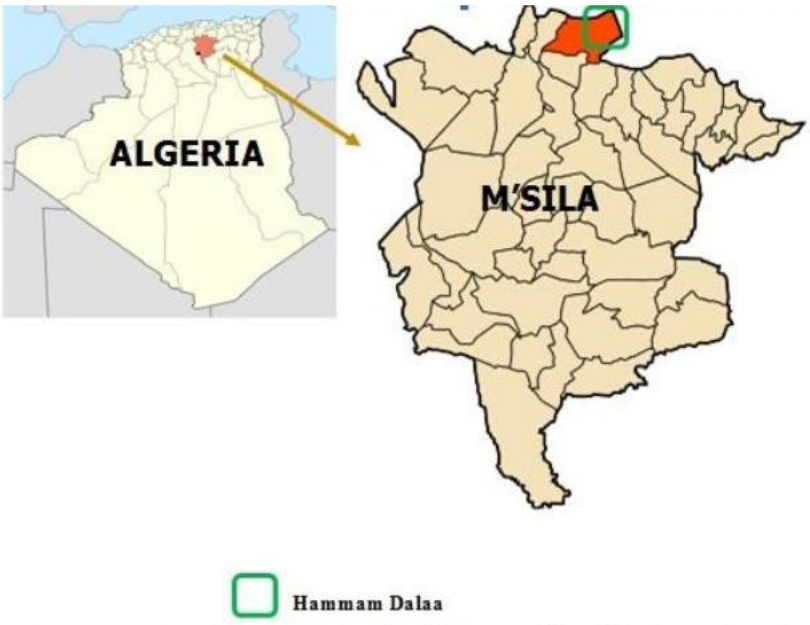


Fig. 1. *Geographical location of the study area*

2.2 . Natural conditions

The region of Hammam Dalaa does not have any weather station. The closest posts are those of M'sila and Bordj Bou Arreridj. The average annual rainfall is 221 mm at the M'Sila station; on the other hand, they are 385 mm at the Bordj Bou Arreridj station.

The mountain ranges receive larger quantities of water, of the order of 400–500 mm in the Saharan Atlas and possibly reaching more than 600 mm in the Hodna and Aurès-Belezma mountains [8].

Hammam Dalaa have a semi-arid climate characterized by cold, harsh winters and hot, dry summers.

2.3. Ethnobotanical surveys

The ethno-botanical surveys on medicinal plants were carried out during the months of March, April and May 2020 using a questionnaire sheet, these surveys allowed us to draw up a list of the medicinal plants used by the population of Hammam Dalaa in traditional herbal medicine.

There were three methods of ethno-botanical surveys, which were the most used, and the most appropriate to our case study, where we completed 132 survey leaves with informants who have knowledge of the therapeutic use of plants.

a. Rural population surveys

This survey consists of asking questions to the villagers about the plants used in traditional medicine, the parts of the plant used, the methods of preparation, and the types of diseases treated by each plant.

b. Surveys of herbalists

The survey of herbalists makes it possible to draw up a list of spontaneous medicinal plants in the study area. This investigation which carried out during the purchase of the plants, enabled us to collect necessary information concerning the vernacular medicinal plants exposed to the sale, the therapeutic uses, the posology and the diseases treated by each plant.

c. Surveys of traditional healers

The survey showed that some family members have significant knowledge of plants of medicinal interest and possessing healing gifts. The pharmacological knowledge of plants from traditional healers makes it possible to identify the basic concepts of the perception of the natural environment and the description of diseases [9].

2.4. Questionnaire leaves

The tool of our survey was a form consists of two parts. The first was based on the person surveyed (age, sex, level of education and professional situation), the second part collected information about each plant medicinal plant studied, this information makes it possible to assess the knowledge of the plant, its use, the prescription and the method of preparation recommended by each of the people interviewed.

3. Results and discussion

The results obtained from the ethno-botanical surveys were expressed in technical leaves, which consist in highlighting the characteristics of the medicinal plants used by the population of the study area. Gives us a list of medicinal plants used by the local population of this area and their therapeutic properties and traditional uses (Table 1, Annex).

3.1. Choice between traditional medicine and clinical medicine

The ethno-botanical survey of medicinal plants carried out with the population of the study area, and the collection of data concerning therapeutic uses, allowed us to describe, classify, and inventory medicinal plants, this floristic inventory highlights a floristic richness of 68 species belonging to 35 botanical families.

Regarding the uses of medicinal plants, and the treatment based on these plants. Show that the population uses phyto-therapy only or with clinical medicine with a cumulative percentage of 60% and the rest 40% uses clinical medicine, which was explained that the population interested by traditional therapies to treat their ailments, and by the fact of the effectiveness of the therapeutic practices that people had acquired from their ancestors.

3.2. Use of medicinal plants according to the survey profile

Both men and women were concerned with the use of medicinal plants, however, women used traditional medicine much more than men, because women have multiple functions and responsibilities as mothers that they must take care of their families, especially their children.

Elderly people in the age group 51 to 70 used medicinal plants more than other age groups, as their knowledge and experience on the use of plants in traditional medicine.

The transmission of knowledge of the uses and properties of medicinal plants from one generation to another is in danger because it is not always ensured.

According to the censuses carried out with the people, who used medicinal plants and according to their level of study, the results obtained show that the illiterate were the most users of the medicinal species followed respectively by the people who have the secondary level, the average level then the university level.

3.3. Information about the herbal drug according to the diseases treated

Analysis of the results obtained shows that plants such as: white horehound (*Marrubium vulgare* L), thyme (*Thymus algeriensis* Boiss. & Reut.), Germander (*Teucrium polium* L), Ivette (*Ajuga iva* L), white mugwort (*Artemisia helba*

alba Asso.) were among the plants most used by the local population in traditional medicine.

On the other hand to these plants which were in great demand and used in the study area, there were other medicinal plants which have a low use because of their toxicity such as oleander (*Nerium oleander* L), Thapsia (*Thapsia garganica* L) .

The leaves were the part of the plant most used in treatment preparations, followed by the other parts of the plants.

The results obtained show that most of the plants intervene in the treatment of the affections of the digestive system with a percentage of (45%) then follow the other affections.

4. Conclusion

In this study, we identified 68 medicinal plants belonging to 35 botanical families, the most important of which was that of the Lamiaceae, the leaves were the most used parts; the infusion and the decoction were the most applied methods of preparation. Digestive disorders were the most known by the population in this area.

The variation in the use of medicinal plants was linked to the profile of the people surveyed; young people generally do not know the names or the use of most plant species, on the other hand the elderly, who have experience in therapeutic uses.

Women and men have a shared medicinal knowledge. Illiterates know information about the therapeutic uses of medicinal plants much more than other literate people. The population of these regions has known the use of plants in traditional medicine.

The multiplication of these ethno-botanical studies on a national scale will make it possible to better understanding the potential in this field, to assess the risks resulting from the use of certain toxic plants and to adopt a new management approach for the safeguarding and preservation of natural resources [10].

Picking must be done with caution because the strong pressure of picking leads to a decrease in productivity and the reduction or loss of biodiversity, this way of harvesting leads to the scarcity, and even the risk of total disappearance of certain species [11].

In the absence of cultivation, many plants are threatened with extinction. In this context, we propose the cultivation of plants in this region, which have been the subject of conclusive scientific work and which are used in human therapy in many countries, because the needs of the pharmaceutical industry in medicinal plants are multiplied [12].

References

1. Fransworth, N., Akerele, O., Binget, A.S., Soejarto, D.D & Guoz : *Place des plantes médicinales dans la thérapeutique*. Bulletin de l'organisation mondiale de lasanté, 64(2), 1986, p.159-164;
2. Ameenah, G-F. : *Medecinal plants: tradition of yesterday and drugs of Tomorrow Molecular Aspects of medicine*, 27, 2006, pp.1-93;
3. Zaghad, N. : *Etude du contenu poly phénolique de deux plantes médicinales d'intérêt économique (Thymus vulgaris, Rosmarinus officinalis) et évaluation de leur activité antibactérienne*. Mémoire de Magister, Biotechnologie Végétale. Univ. de Constantine, 2009, p.96;
4. Roussel, M. : *La phytothérapie, une alternative importante*. Soir Santé, Le Soir d'Algérie, 2009, p. 14. https://www.lesoirdalgerie.com/pdf/2009/04/19/p14sante.pdf
5. Salhi, S. & Fadli, M. : *Plantes médicinales de la ville de Kénitra (Maroc)*. Lazaroa, 31, 2006, pp. 131-146;
6. Hseini, S. & Kahouadji, A. : *Etude ethnobotanique de la flore médicinale dans la région de Rabat (Maroc occidentale)*. Lazoroa, 28, 2007, pp.79-92;
7. Rebbas, K., Bounar, R., Gharzouli, R., Ramdani, M., Djellouli, Y. & Alatou, D. : *Plantes d'intérêt médicinale et écologique dans la région d'Ouanougha (M'Sila, Algérie)*. Phytothérapie, 2012, DOI 10.1007/s10298-012-0701-6;
8. El Houerou, HN., Claudin, J. & Pouget, M. : *Étude bioclimatique des steppes algériennes (avec une carte bioclimatique à 1/1 000 000)*. Bull Soc Hist Nat Afr Nord Alger, t. 68, fasc. 3 et 4, 1977, pp.33–75;
9. Bellakhdar, J. *La pharmacopée marocaine traditionnelle. Médecine arabe ancienne et savoirs populaires*. Ed. Le Fennec, Casablanca/ Ibis Press, Paris, 1997, p.764;
10. Lahsissene, H. & Kahouadji, A. : *Usages thérapeutiques traditionnels des plantes médicinales dans le Maroc occidental: cas de la région de Zaër*. Phytotherapie, 8(4), 2010, pp. 210-217;

11. El Hafian, M., BenHamdini, N., Elyacoubi, M., Zidane, L. & Rochdi, A. : *Etude floristique et ethnobotanique des plantes médicinales utilisées au niveau de la préfecture, d'Agadir-Ida-Outanane (Maroc)*. Journal of Applied Biosciences 81, (2014, pp. 7198-7213;
12. Chemli, R. : *Plantes médicinales de la flore de Tunisie*. CIHEA–Option Méditerranéenne, 23, (1997, pp. 119-25;
13. Baba Aissa, F. : *Encyclopédie des plantes utiles (Flore d'Algérie et du Maghreb). Substances végétales d'Afrique, d'Orient et d'Occident*. Ed. Edas. Alger, 1999, 368p.;
14. Beloued, A. : *Les plantes médicinales d'Algérie.* Ed. Office des publications universitaires (OPU), Alger, 2005, 284p;
15. Ghourri, M., Zidane, L., El Yacoubi, H., Atmane, R., Fadli, M. & Douira, A. : *Etude floristique et ethnobotanique des plantes médicinales de la ville d'El Ouatia (Maroc Saharien).* Kastamonu Üni., Orman Fakültesi Dergisi, 12 (2), 2012, pp. 218-235;
16. Kahouadji, M.S. : *Contribution á une étude ethnobotanique des plantes médicinales dons le Maroc oriental.* Thèse de troisiéme cycle. Univ. Mohammed I. faculté des sciences, Oujda. 1995, 206p;
17. Rebbas, K. : *Développement durable au sein des aires protégées algériennes, cas du Parc National de Gouraya et des sites d'intérêt biologique et écologique de la région de Béjaïa*. Thèse de Doctorat en écologie, Univ. Ferhat Abbas, Sétif 1, 2014, 192p;
18. Schauenberg, P. & Paris, F. : *Guide des plantes médicinales*. Delachaux et Niesetli, Ferdinand Paris, 1977, 396 p;
19. Valnet, J. : Ph*ytothérapie, traitement des maladies par les plantes*. Edition Maloine SA, Paris, 1983, 942p;
20. Achour, S., Chebaibi, M., Essabouni, H. et al. : *Ethnobotanical study of medicinal plants used as therapeutic agents to Manage diseases of humans.* Hindawi, Evidence-Based Complementary and Alternative Medicine, Article ID 4104772, 2022, 8 p. https://doi.org/10.1155/2022/4104772;
21. Bentabet, N., Rahal, R. & Nassour, S. : *Enquête ethnobotanique et inventaire des plantes médicinales utilisées dans le traitement des maladies dermatologiques dans la ville d'Ain Temouchent.* Journal of Applied Biosciences 170, 2022, pp. 17704-17719;
22. Lazli, A., Beldi, M., Ghouri, L. & Nouri, N. : *Étude ethnobotanique et inventaire des plantes médicinales dans la région de Bougous (Parc National d'El Kala - Nord-est algérien).* Bulletin de la Société Royale des Sciences de Liège, 88, 2019, pp. 22 – 43.

Annexes

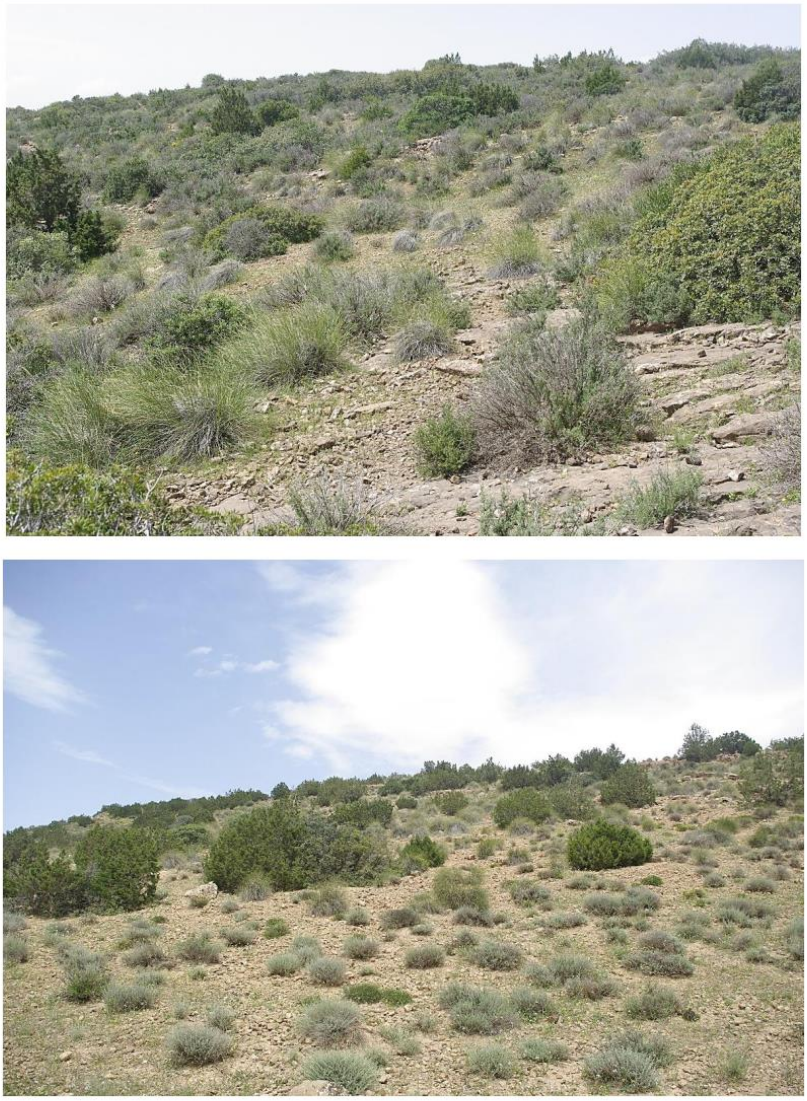


Fig. 2. *General view of a matorral landscape of Hammam Dalaa (K. Rebbas, 2019)*

Table 1. *List of medicinal plants used by the population of Hammam Dalaa (M'Sila, Algeria) [9-22]*

Families	**Species**	**Parts used**	**Therapeutic properties**	**Traditional uses**
Abietaceae	*Pinus halepensis* Mill.	Buds, leaves, resins, bark.	Expectorant, aphrodisiac, spermatogenesis.	A needle decoction is used as an antiseptic, balsamic and antirheumatic.
Anacardiaceae	*Pistacia lentiscus* L.	Leaves, resins, roots, bark.	Astringent, antiseptic, detergent, expectorant, hemostatic, simulant, vulnerary.	The leaves and the bark are used, in decoction or in powder, in the treatment of the intestine, diarrhea and diabetes.
Apicaceae	*Coriandrum sativum* L.	Leaves, fruit.	Antiseptic, antispasmodic, carminative, stomachic, stimulating.	The plant is used in infusion of fresh leaves in boiling water against digestive and gastric disorders. In external use: it acts as a healing agent.
Apicaceae	*Petroselinum sativum* L.	Leaves, stems.	Digestive, cordial, remedial, of the kidneys, healing, fortifying of the hair.	A decoction of the leafy stems is used against kidney stones and bladder problems.
Apicaceae	*Thapsia garganica* L.	Roots.	Thapsia is used against rheumatism and bronchitis.	External use: an oily maceration of the crushed roots is used as a compress against rheumatic pains.
Apocynaceae	*Nerium oleander* L.	Leaves.	Diuretic, antidiabetic, cardiotonic.	The local application of latex is recommended to treat cases of scabies.
Asteraceae	*Antemisia herba-alba* Asso	Leaves, tops, roots.	Emmenagogue, stomachic, vermifuge, antispasmodic, anti gastralgic.	The leafy stem, in decoction, is very indicated in case of intestinal worms, colds, gastric pains, urinary ailments and diabetes.
Asteraceae	*Artemisia campestris* L.	Tops, flowers, roots, leaves.	Vulnerary, anti-haemorrhagic, diuretic.	The plant is used in the form of infusion or powder against abdominal pain, colic and menstruation.
Asteraceae	*Brocchia cinerea* Screw	Leaves	Anti-inflammatory, analgesic, antiseptic, antibacterial, antipyretic.	The plant is used to treat stomach pain, fever, headache and migraine, cough and joint inflammation
Asteraceae	*Chrysanthemum coronarium* L.	The whole plant	Anti-inflammatory, analgesic.	The whole plant, in powder form, is used against stomach ailments.
Asteraceae	*Lactuca sativa* L.	Leaves.	Aperitif, cardiotonic, antitussive, pectoral, anti-ulcer.	A forehead massage is done with the infusion of the leaves against sunburn.
Asteraceae	*Launaea nudicaulis* L. Hook .	Leaves.	Antidiabetic, calming.	The powder of the leaves is recommended against diabetes and gastric ailments.
Brassicaceae	*Brassica rapa* L.	Roots, leaves.	Aperitif, bechic, anti-gout, anti-rheumatic.	A fumigation of the leaves with onion, the leafy stem of white horehound, eucalyptus leaves and cloves, and fish head is effective in cases of typhoid fever.
Chenopodiaceae	*Atriplex halimus* L.	Leaves, seeds.	Diuretic, emollient, laxative, emetic.	Mixing the powder of the plant with olive oil is very

				effective in treating broken bones.
Chenopodiaceae	*Spinacia oleracea* L.	Leaves.	Laxative, hepatic, anti-inflammatory of the urinary tract, anti-ulcer, anti-anemic.	A decoction of the leaves, against inflammations of the digestive tract, liver and bladder.
Cistaceae	*Cistus albidus* L.	Leaves, flowers.	Hypoglycemic, diuretic, healing.	The leaves, in decoction, are used against gastric pains and considered hypoglycemic. as a poultice: they are used against abscesses. In external use: it is used as a poultice against wounds.
Cucurbitaceae	*Colocynthis vulgaris* L.	Fruits.	Purgative, emetic, scalp tonic.	Very dilute infusion of pruned dried fruit or pulp as a purgative and hypoglycemic.
Cucurbitaceae	*Cucumis citrullus* (L) Ser.	Fruits.	Diuretic, hypotensive, softening, refreshing.	One drinks a spoon of oil extracted from the seeds every morning on an empty stomach against hypertension.
Cupressaceae	*Juniperus oxcycedrus* L.	Leaves, fruits, roots, wood, cones, resins.	Antiseptic, diuretic, stomachic stimulant, sudorific.	Cade oil extracted from *Juniperus oxcycedrus* cures rashes.
Cupressaceae	*Juniperus phoenicea* L.	Twigs, fruits, wood.	Antiparasitic, antiseptic, astringent.	The leaves are used, in decoction, as a hypoglycaemic. Infusion of the leaves, is used as a body bath to treat rheumatism.
Ericaceae	*Arbutus unedo* L.	Fruit leaves.	Anti-inflammatory, antiseptic, astringent, diuretic and depurative.	A decoction of the leaves is used against urinary calculi.
Euphorbiaceae	*Euphorbia guyoniana* Boiss. and Reut.	Stems.	Calms pain due to scorpion stings.	External use: The stem latex is applied to sites of viper bites to relieve pain and stop the spread of venom.
Fabaceae	*Vicia faba* L.	Seeds.	Laxative, lowers blood cholesterol levels.	A powder of broad bean seeds mixed with chickpea seed, rice seed, and egg yolk are used as a poultice on the face against abscesses.
Fabaceae	*Ononis spinosa* L.	Flowers, roots.	Antiseptic, astringent, depurative, diuretic, sudorific.	The infusion of the roots increases the secretion of urine and acts against gout.
Fabaceae	*Calycotome spinosa* (L.) Lamk.	Flowers, leaves and seeds.	The calycotome is recommended for external use, against swelling, edema and especially against urine retention because its active substances are strongly diuretic.	The infusion or decoction of the flowers and leaves of the calycotome is diuretic. It can be used in powder form to treat new wounds.
Fabaceae	*Retama retam* webb.	Whole plant.	Healing recommended to treat eye irritations, diarrhea, feverish illnesses and solitary worms.	Mixing the dried leaves with olive oil or water is effective against eczema.

Fabaceae	*Trigonella faenum-graecum* L.	Seeds.	Softening, anabolic, emollient, febrifuge, galactagogue, hypoglycemic, tonic.	Internally, a decoction of the seeds is used to soothe abdominal pain, cough and diarrhoea. It promotes weight recovery and acts as an aperitif and soothing. Externally, the seeds are used to remove dandruff from the hair.
Fagaceae	*Quercus ilex* L.	Bark, leaves, stems.	Antiseptic, antidiarrheal, astringent, haemostatic febrifuge.	As a gargle: 15g per liter of water, against angina, stomatitis and pharyngitis.
Globulariaceae	*Globularia allypum* L.	Leaves.	Astringent, laxative, cholagogue, depurative. stomachic and sudorific.	The infusion of this plant is recommended to treat gastric disorders, diarrhea and menstrual pain. In powder: it is used against eczema and burns.
Lamiaceae	*Ajiga iva* (L.) Schreb.	Whole plant.	Antiseptic, parasiticide, hypoglycemic.	Ivette tea is used against diabetes, hypertension, diarrhoea, gastric pain and cancer.
Lamiaceae	*Marrubium vulgare* L.	Flowering tops, leaves.	Bitter tonic, cholagogue, regulates heart rhythm.	Infusion of horehound leaves is used against colds, fever and cases of allergy.
Lamiaceae	*Mentha pulegium* L.	Leaves, flowering tops.	Hypotensive, bechic, pectoral, cephalic, antirheumatic, antipyretic.	In decoction, the dried or fresh leaves recommended to treat abdominal ailments.
Lamiaceae	*Mentha spicata* L.	Leaves	Analgesic, antiseptic, antispasmodic, aromatic, carminative, cholagogue, digestive, stimulant, tonic.	Among the villagers, spearmint is commonly used in infusion as carminative, odontalgic, tonic, stomachic, calming, hypotensive and hypocholesterolemic. It is used to treat dysmenorrhea, urinary incontinence and oral diseases. In powder, spearmint is used to treat wounds and burns as well as to nourish the hair.
Lamiaceae	*Mentha viridis* L.	Leaves, stems.	Antispasmodic, antirheumatic, antiemetic, antineuralgic.	The leafy stem, infused in tea, is used as a digestive and refreshing. As a poultice, the leaves are used against headaches and wounds.
Lamiaceae	*Teucrium polium* L.	Leaves, tops, flowers.	Anti-inflammatory, astringent, detergent, febrifuge, hypoglycemic, bitter tonic.	The plant used in infusion against gastrointestinal pain, fever, diarrhea, liver attacks, biliary retention.
Lamiaceae	*Thymus algeriensis* Boiss. & Reut.	Whole plant.	Vulnerable, vermifuge, tonic, stomachic, expectorant, bechic, carminative, appetizer, antiseptic.	This plant is used in the form of herbal tea to treat the flu.
Lamiaceae	*Rosmarinus officinalis* L.	The leaves and flowers.	Anti-inflammatory, antiseptic, antispasmodic, astringent, carminative, cholagogue, emmenagogue, febrifuge,	Rosemary leaves are used in the form of decoction or infusion against gastric disorders, colic and menstruation and back pain

			general stimulant, stomachic, tonic, vulnerary.	It is considered carminative and diuretic.
Lauraceae	*Laurus nobilis* L.	Leaves, fruit.	Stomachic, carminative.	Compress bay leaves, used against rheumatism.
Liliaceae	*Allium cepa* L.	Bulbs.	Treatment: infected wounds, otalgia, chest, otitis, eyes, constipation, headaches, rheumatism, apples, respiratory, hair loss.	The bulb of the onion is used in the form of poultice against dermatological affections, and orally against affections at the level of the gallbladder.
Liliaceae	*Allium sativum* L.	Bulbs.	Garlic is effective against corns, warts, earaches, arthritis pain and rheumatism.	It is considered hypotensive.
Liliaceae	*Asphodelus microcarpus* Salzm and Vivo	Tubers.	Detergent, resolving, antirheumatic, analgesic, antispasmodic.	An oily maceration of the tubers is applied against ear infections, rheumatism, dental pain.
Lythraceae	*Lawsonia inermis* L.	Leaves.	Anti-ulcer, fungicide, anti-diarrheal, vermifuge.	The leaves are used as an infusion against diarrhea and renal lithiasis.
Malvaceae	*Malva sylvestris* L.	Leaves, flowers, roots.	Mallow acts as a calming and diuretic.	The leaves and flowers in infusion are used against chronic constipation, cough and bronchitis.
Moraceae	*Ficus carica* L.	Fruits.	Laxative, anti-animic, bechic, pectoral, remedying warts.	In infusion, the fruits are used to treat cough. and the latex is used externally against warts.
Oleaceae	*Jasminum fruticans* L.	Flowers.	Calming and sedative.	Usually comes in the form of herbal tea made from the flowers. Jasmine essential oil is used on the skin of the face, for its antioxidant and anti-wrinkle effect but also for its antibacterial action for acne cases.
Oleaceae	*Olea europea* L.	Leaves, barks, fruits.	Leaves and bark: astringent, diuretic, febrifuge, tonic, hypotensive, hypoglycemic. oil and fruit: cholagogue, laxative, emollient, sedative.	Olive oil is used as a laxative in the case of chronic constipation.
Oleaceae	*Phillyrea media* L.	Barks.	Antiulcer, analgesic.	The bark, in decoction, is used in the treatment of fever.
Papaveraceae	*Papaver rhoeas* L.	Flowers	Antispasmodic, soothing, calming, emollient, pectoral, sedative, slightly hypnotic.	The infusion of the flowers is used as a tranquilizer, and Antitussive.
Plantaginaceae	*Plantago albicans* L.	Leaves, roots and seeds.	Softener, astringent, emollient, diuretic and laxative.	Combine with colocynth root to make poultices in wound care. Against diarrhea.
Poaceae	*Ampelodesma mauritanica* (Poir.) Hard. & Schinz	Leaves	The succulent tender base of its flower stems is often eaten in the countryside; its sweetish juice is refreshing.	This plant is used in infusion to treat kidney stones and gallbladder.

Poaceae	*Hordeum vulgare* L.	Seeds.	Diuretic, antitussive, anti-inflammatory and detoxifying.	Barley is used in the treatment of diseases: of the stomach, tuberculosis, colon, diarrhea, leanness jaundice. Boiled barley helps cure cough.
Poaceae	*Stipa tenacissima* L.	Leaves.	Alfa is used in the treatment of chronic scalp ulcers.	The infusion of crushed esparto sprigs in boiling water is very effective in treating kidney stones.
Poaceae	*Triticum durum* L.	Seeds.	Bechic, laxative, astringent, caring for skin and boils, pectoral.	Wheat is used in several forms, pancake, semolina, or soup in the treatment of gastric pain, anemia and fractures.
Punicaceae	*Punica granatum* L.	Bark, fruit, flowers.	Vermifuge, healing, haemostatic, antidiarrheal, relieve painful menstruation.	A decoction of the barks where the fruit powder is used against diarrhea and gastrointestinal diseases.
Ranunculaceae	*Nigella sativa* L.	Seeds	Analgesic, antiseptic, antispasmodic, appetizer, carminative, digestive, diuretic, expectorant, febrifuge, galactagogue, vermifuge.	The use of nigella is very effective against the flu by inhaling the crushed seeds.
Rhamnaceae	*Rhamnus alaternus* L.	Leaves, stems, twig bark.	Astringent, laxative, purgative, effective against jaundice, hepatic.	Alterne is used as an infusion to treat jaundice (jaundice) and abdominal pain.
Rhamnaceae	*Ziziphus lotus* L. (Desf.)	Leaves, fruit.	Anti-inflammatory, diuretic, sedative, emollient, tonic.	Dried leaf powder, moistened with water, is applied as a poultice against boils and abscesses. Jujubes, associated with rush fruits, corn style, couch grass and prickly pear flowers, are used against kidney stones.
Rosaceae	*Prunus dulcis* (Mill.) DA Webb	Fruits.	Aperitif, anti-dandruff	Fruit powder mixed with milk as a poultice to improve facial skin.
Rosaceae	*Prunus armeniaca* L.	Fruits, barks, seeds.	Antiasthenic, antianaemic, appetizer, tonic, nutritive, astringent, laxative.	The ripe fruit is eaten to treat constipation, anemia and weakness.
Rosaceae	*Prunus domestica* L.	Leaves, fruit.	Softener, anti-anaemic, depurative, digestive, laxative, emollient, diuretic, astringent.	Prune (dried fruit) compote is an excellent remedy for constipation, especially if taken in the morning on an empty stomach.
Rosaceae	*Pyrus communis* L.	Fruits.	Anti-anaemic, astringent, depurative, tonic, anti-inflammatory, nutritious.	The fruits are eaten to treat kidney ailments.
Rutaceae	*Ruta chalepensis* L.	Leaves, roots.	Antispasmodic, anti-inflammatory, diuretic, emmenagogue, sedative, sudorific, vermifuge.	The root, in decoction, is used against stomach-ache, affections of the respiratory system and diseases of the liver.
Salicaceae	*Populus alba* L.	Buds.	Disinfectant, treatment of kidney and bladder ailments.	Poplar wood is used for heating (rural area).

Solanaceae	*Capsicum annuum* L.	Fruits.	Antiasthenic, aperitif, carminative, tonic, rubefacient.	Infusion of the seeds in boiling water for 24 hours is used to strengthen hair and eliminate dandruff.
Thymelaceae	*Thymelaca hirsuta* Endl.	Leaves.	Purgative, vermifuge.	The leaves, in decoction, are used against urinary ailments and kidney stones. The use of this plant is limited in external use, it consists in mixing the crushed leaves with olive oil to treat burns and scabies.
Vitaceae	*Vitis vinifera* L.	Leaves, fruit.	The leaves considered the remedy for menopause and uterine bleeding.	A gargle by infusion of the leaves against inflammation of the throat and stomatitis.
Zygophyliaceae	*Peganum harmala* L.	Seeds, leaves.	Rue is used as an antirheumatic.	The seeds are used in powder form in the treatment of rheumatic pain, back pain and haemorrhoids.
Zygophyliaceae	*Zygophyllum album* L.	Aerial part.	The plant is used as an analgesic and wound healing.	The white Zygophylle is a disinfectant used for the body care of infants.