

REVIEW ARTICLE

STUDY OF THE PHENOMENON OF DEPLETION OF MEDICINAL AND AROMATIC PLANTS IN THE ROSARY REGION

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ABSTRACT

The study targeted medicinal and aromatic plants in the Al-Wardia region located in the Green Mountain in northeastern Libya, where the plants in them were counted and the most commonly used medicinal and aromatic plants in folk medicine were evaluated, and 70 types of medicinal plants were collected in the study area. Through a survey of these plants and their distribution to the local population and perfumers within the study area and the application of statistical analysis, it was found that the most used medicinal and aromatic plants are *Thymus capitatus* L, *Salvia fruticosa* L, *Retama raetum* (Forsk.) Webb, *Helichrysum stoechas* (L.) Monch., *Peganum hamala* L, *Chamomilla aurea* (Loefl.) Gax ex Cossn & kralik. *Ziziphus lotus* (L.) lam *Salvia fruticosa* L *Ceratonia siliqua* L. *Helichrysum stoechas* (L.) Monch The study Where the study showed that the estimated quantities sold of them ranged from the apple and the Shahi apple per year, which is equivalent to its value 3000,2400 dl, in addition to knowing its anatomical structure using the Libyan flora.

KEYWORDS

Rosacea Region, Libyan Flora, Plant Species, Endemic Plant

1. INTRODUCTION

Man has known medicinal and aromatic plants for a long time, and a lot of knowledge and information about these plants was codified in ancient civilizations such as the civilization of the ancient Egyptians, India, China and Muslims. And the need for it became necessary, especially after the spread of many folk healers with medicinal herbs in providing appropriate treatment for many diseases and avoiding medicines and chemical preparations that have a negative side effect on human health and immunity in the long run, which led to the prosperity of this profession in all regions of Libya general and Al-Jabal Al-Akhdar in particular (Al-Atib et al., 2015). The local people in the area collected medicinal and aromatic plants randomly, marketed and sold them in shops, individually or in bulk, as it was noted that many private shops were selling medicinal and aromatic plants in the study area, as they are located Within the Green Mountain region, which is rich in many medicinal and aromatic plants, whether trees, shrubs or herbs, which are an important part of the vegetation cover. Medicinal and aromatic plants are among the oldest Libyan groups known to man since ancient times. Medicinal plants and drugs are extracted Some of them are of great economic importance, and their importance has increased, as they represent the main part of the raw materials on which the pharmaceutical industry is based in the world. The pharmaceutical industry is one of the strategic industries, as there is a necessity imposed by safety and public health on the continuous and continuous availability of the largest possible amount of medicines, especially in cases of wars, natural calamities, and types of economic embargo in which import and export are not possible (Heikal et al., 1993), and where the extent of their importance was clearly visible. And the multiplicity of its uses, so its economic importance is constantly increasing. A medicinal plant is defined as a plant that contains a medicinal substance or substances capable of treating a specific disease or reducing

its infection, or that contains raw materials used in the preparation of medicinal substances. As for an aromatic plant, it is any plant that contains an essential oil (volatile oil) in part. It is used in the preparation of perfumes, as there are plants that contain essential oils, (Abdo, 2005). Where there was a great demand for picking and collecting in this region Medicinal and aromatic plants in their natural form Random and sold by local people in recent times as it is a profitable business and a source of livelihood for people with limited income. And the demand for it has been noticed in a large way, as it is involved in the treatment of many diseases without any side effects, which is known as medical medicine Folkoric medicine, And if this continued exploitation of these plants continues on me In this way, it will negatively affect this enormous plant wealth over time unless environmental programs are established to develop and preserve it and activate laws to prevent attacks on agricultural forests in order to guarantee the right of future generations.

2. RESEARCH PROBLEM

The study was conducted for the Al-Wardiya area, as it is an area that is constantly exposed to the sale of medicinal and aromatic plants used in Folkoric medicine by some of the local residents of that area, which will negatively affect the growth rates of vegetation, represented by trees, shrubs and herbs that are included in the components of vegetation.

The importance of the study: Medicinal and aromatic plants are of great economic value, as the demand for them has increased locally and globally in recent times as they are involved in several fields, whether medical, nutritional or cosmetic.

3. PURPOSE OF THE STUDY

The study aims to - inventory the medicinal and aromatic plants present in the study area. Evaluate the most frequently used and the quantities sold

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in the study area stores. materials and methods

3.1 Study Area

The study area is located in the north-east of Libya at the second edge of the Green Mountain on the coastal road between Zawiyat Al-Arqoub and Wadi Al-Kouf, 27 km away from the city of Al-Bayda. Astronomical location: As for astronomers, the study area is located between latitudes "30°37'32" and "0°51'3221" north and lines "0°22'21 and 0°36'21 east". Figure 1 Area Map

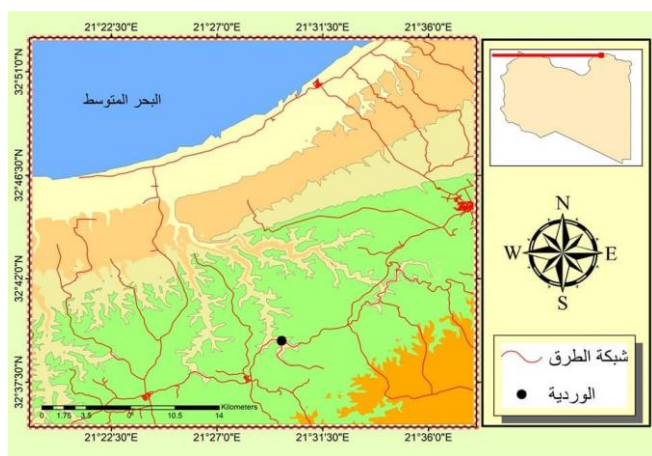


Figure 1: Area Map

Source: Land Sat8 moon images using Arc Gis10.5.

3.2 The Climate

The Mediterranean climate study area prevails, with warm winters and hot and dry summers. The climate affects the distribution of vegetation cover. The monthly average of minimum temperatures ranges between 9 degrees Celsius in January and 23 degrees Celsius in August, while the monthly average of maximum temperatures ranges between 12 °C in January to 28 °C in August, but the relative humidity is not less than 57% during the winter, and the average annual rainfall reaches 630 mm / year, and the maximum amount reaches more than 1200 mm / year, and decreases in some years to reach to 381 mm/year (Kawasma, 1979).

Study methodology: The study relied on the use of a questionnaire to find out the most selling types of medicinal and aromatic plants, as it was found that the most medicinal and aromatic plants represented in thyme, apples, juniper, marjoram, wild kale, sidr, mint, rue and rabbit herb.

Study method: field study and the use of a questionnaire.

3.4 Study Sources

A - Primary sources The study relied on a descriptive desk survey using Libyan flora.

B- Secondary sources of previous studies.

4. DISCUSSION RESULTS

Where a number of (70) medicinal and aromatic plant species were grouped in Appendix (1), belonging to three families. Gymnosperms represented two species: Cupressus, Juniperus phoenicea, and sempervirens, and they belong to the family Cupressaceae. Either covered plants (Angiosperms), which represent 70 plant species divided into dicotyledons. which contained 63 species and 53 genera and monocotyledons that contained 5 Types and 4 generaAs in Table 1, which is followed in the herbalist shops used in folkloric madivine with a comparison of the plant species in the study area with a number of plant species for some areas of previous studies in the Jabal Al-Akhdar region, as the study of Al-Darawi and Badi 2015 was identified 80 plant species collected directly From the vegetation cover of the Al-Kouf Valley in Al-Jabal Al-Akhdar, and studying the trading of medicinal and aromatic plants in the Tokarah area and the surrounding areas and its impact on the target plants. 45 medicinal plant species were collected in 2018, where the most types of medicinal plants were exploited by the local population, represented in the Table 2 Which is an important part of the vegetation cover.

Table 1: Shows the Division of Plant Groups Obtained from the Study Area.

Number	Number of Plant Aggregates	Number of Species	Number of Genera	Number of Families
1	gymnosperm	2	2	1
2	Cotyledons (Dicotyledons)	63	53	31
3	Cotyledons (Monocotyledons)	5	4	2
4	Total	70	59	34

It was found through the study that the most consumed and sold plants, such as the people, are an area in their shops, where the most sold plants were counted as in Table 2 and that the prices are close in their shops and that they are accessible to everyone. The study showed that the most consumed and sold plants, such as the people, are an area in their shops.

Especially the thyme plant, the Shahi apple, the camellia, the harem and the juniper are the most sold medicinal and aromatic plants because they were used in the treatment of many cold diseases. to continue his demise of this profession, and in the absence of the active role of the role of the agricultural police has led to the expulsion of these plants from their natural environments, especially the plant species that have been used completely while they are in flowering state, which leads to a decrease in their production of the seeds that plants depend on for their renewal naturally, such as rabbit weed and mint, which will lead to their extinction, as well as the unjust collection of branches And the branches of plant species such as kale and the apple tree, this assembly will negatively affect the ability of plants to regenerate processes, which leads to their extinction

Table 2: The Types of Medicinal Plants That are Most Used and Sold in The Study Area

Scientific Name	Local Name	Part Used	Its Therapeutic	Uses Method of Sale				
					The Bags are Dried		Wholesale With a Sack	
					Price	Weight	Weight	Price
1	<i>Juniperus Phoenicea</i> L.	Juniper	Leaves	Stomach Infections	100	3	25	50
2	<i>Thymus Capitatus</i> L.	Thyme	Flowers	Colds- Shortness of Breath	100	3	25	30
3	<i>Salvia Fruticosa</i> L.	The Juicy Apple	Is A Whole Plant	That Adjusts the Level of Hormones - <i>Bags and Coughs</i>	50	3	25	40
4	<i>Retama Raetum</i> (Forsk.) Webb	Wormwood	Leaves and Flowers	Worms	100	3	20	20
5	<i>Helichrysum Stoechas</i> (L.) Monch	Rabbit Herb	Flowers and Leaves	Nephritis - Gallstones	100	3	25	20
6	<i>Peganum Hamala</i> L.	Rumal	Flowers	Joint Pail	100	5	25	30
7	<i>Chamomilla Aurea</i> (Loefl.) Gax Ex Cossn & Kralik	Column	Flowers	Pressure - and Colic- Face Glasses - Get Rid of Dark Circles	50	3	20	50
8	<i>Ziziphus Lotus</i> (L.) Lam.	Sidr	Leaves	Joint Pain - Hair Los	100	3	25	25
9	<i>Salvia Fruticosa</i> L.	Mint	Full	Colic	100	2	20	25
10	<i>Ceratonia Siliqua</i> L.	Carob	Fruit	Colic - Menstruation	100	3	25	25
11	<i>Rosmarinus Officinalis</i> L.	Wreath	Leaves	Ovarian Cysts	200	5	30	30
12	<i>Organum Majorana</i> L	Marjoram	Leaves - Flowers	Ovarian Cysts - Congestion of Blood Vessels	100	3	20	40

In comparison with previous studies, it became clear that the most sold quantities are the apple plant *Salvia fruticosa* L and thyme *Thymus capitatus* L, as shown in Table 3, which is consistent with the study and the lowest percentage of the quantities sold of these medicinal plants is the mint plant, which amounts to about 50 kg per year.

Table 3: Shows The Average Prices and Weights of Medicinal Plants Sold

Number	Scientific Name	Local Name	Annual Return Kg / Dinar
1	<i>Juniperus Phoenicea</i> L.	Juniper	1500
2	<i>Thymus Capitatus</i> L.	Thyme	900
3	<i>Salvia Fruticosa</i> L.	The Juicy Apple	2400
4	<i>Retama Raetum</i> (Forsk.) Webb.	Wormwood	600
5	<i>Helichrysum Stoechas</i> (L.) Monch.	Rabbit Herb	600
6	<i>Peganum Hamala</i> L.	Rumal	1500
7	<i>Chamomilla Aurea</i> (Loefl.) Gax Ex Cossn & Kralik.	Column	3000
8	<i>Ziziphus Lotus</i> (L.) Lam.	Sidr	500
9	<i>Salvia Fruticosa</i> L.	Mint	500
10	<i>Cerantonia Siliqua</i> L.	Carob	300
11	<i>Rosmarinus Officinalis</i> L.	Wreath	750
12	<i>Organum Majorana</i> L.	Marjoram	1200

It was found through the study that there are eleven species of endemic plants as shown in Table 4.

Table 4: Shows The Endemic Plants in The Study Area

Number	Name of Species	Family
1	<i>Pistacia Lentiscus</i> L.	Anacardiaceae
2	<i>Rhus Tripartite</i> (Ucria).	Anacardiaceae
3	<i>Cerantonia Siliqua</i> L.	Cupressaceae
4	<i>Cupressu Sempervirens</i> Va. <i>Horizontalis</i> (Mill) Gordn.	Cupressaceae
5	<i>Juniperus Phoenicea</i> L.	Caesalpiniaceae
6	<i>Arbutus Pavarii</i> Pamp.	Ericaceae
7	<i>Ricinus Communis</i> L.	Euphorbiaceae
8	<i>Myrtus Commuins</i> L.	Myrtaceae
9	<i>Olea Europaea</i> L.	Oleaceae
10	<i>Rhamnus Lycioides</i> L.	Rhamnaceae
11	<i>Ziziphus Lotus</i> (L.) Lam.	Rhamnaceaa

Table 5: Phanerophytes in The Study Area.

Number	Name of Species	Family
1	<i>Pistacia Lentiscus</i> L.	Anacardiaceae
2	<i>Rhus Tripartite</i> (Ucria).	Anacardiaceae
3	<i>Cupressu Sempervirens</i> Va. <i>Horizontalis</i> (Mill) Gordn.	Cupressaceae
4	<i>Juniperus Phoenicea</i> L.	Cupressaceae
5	<i>Cerantonia Siliqua</i> L.	Caesalpiniaceae
6	<i>Arbutus Pavarii</i> Pamp.	Ericaceae
7	<i>Ricinus Communis</i> L.	Euphorbiaceae
8	<i>Rosmarinus Officinalis</i> L.	Lamiaceae
9	<i>Myrtus Commuins</i> L.	Myrtaceae
10	<i>Olea Europaea</i> L.	Oleaceae
11	<i>Rhamnus Lycioides</i> L.	Rhamnaceaa
12	<i>Ziziphus Lotus</i> (L.) Lam.	Rhamnaceae

Table 6: Shows The Chamaephytes in The Study Area.

Number	Name of Species	Family
1	<i>Artemisia Herba - Alba</i> Asso.	Asteraceae
2	<i>Cichorium Pumilum</i> Jacq.	Asteraceae
3	<i>Cynara Cardunculus</i> L.	Asteraceae
4	<i>Cynara Scolymus</i> L.	Asteraceae
5	<i>Helichrysum Stoechas</i> (L.) Monch..	Asteraceae
6	<i>Phagnalon Rupestre</i> (L.) DC.	Asteraceae
7	<i>Scorzonera Undulate</i> Vahl , Symb Bot	Asteraceae
8	<i>Diplotaxis Harra</i> (Forsk.)Boiss .	Brassicaceae
9	<i>Sinapis Pubescens</i> L .	Brassicaceae
10	<i>Cistus Parviflous</i> Lam.	Cistaceae
11	<i>Cistus Salvifolius</i> Lam.	Cistaceae
12	<i>Convolvus Althaeoides</i> L.	Convolvulaceae
13	<i>Convolvus Arvensis</i> L .	Convolvulaceae
14	<i>Convolvus Lineatus</i> L	Convolvulaceae
15	<i>Ecballium Elaterium</i> L.	Cucurbitaceae
16	<i>Calicotome Spinosa</i> (L.) Link .	Fabaceae
17	<i>Calicotome Villosa</i> (Poiret) Link..	Fabaceae
18	<i>Retama Raetum</i> (Forsk.) Webb.	Fabaceae
19	<i>Globularia Alypum</i> Linn .	Globulariaceae
20	<i>Paronychia Arabica</i> Linn .	Illecebraceae
21	<i>Ajuga Iva</i> L.Schrer .	Lamiaceae
22	<i>Ballota Hirsute</i> Benth .	Lamiaceae
23	<i>Marrubium Valgare</i> L.	Lamiaceae
24	<i>Salvia Fruticosa</i> L.	Lamiaceae
25	<i>Teucrium Polium</i> (Decne) Aschers Schweinf	Lamiaceae
26	<i>Thymus Capitatus</i> L .	Lamiaceae
27	<i>Plantago Ovata</i> Forskal .	Plantaginaceae
28	<i>Rumex Acetosa</i> L.	Polygonaceae
29	<i>Polygonum Equisetiforme</i> Sibth.	Polygonaceae
30	<i>Clematis Flammula</i> L .	Ranunculaceae
31	<i>Sarcopterium Spinosum</i> Spach.	Rosaceae
32	<i>Putoria Calabrica</i> (L. F) DC.	Rubiaceae
33	<i>Thymelaea Hirsyta</i> (L.) Endl.	Thymelaceae
34	<i>Urtica Pilulifera</i> L .	Urticaceae
35	<i>Peganum Hamala</i> L.	Zygophyllaceae

Table 7: Shows The Cryptophytes in The Study Area.

Number	Name of Species	Family
1	<i>Allium Longanum</i> Pamp .	Alliaceae
2	<i>Allium Roseum</i> L .	Alliaceae
3	<i>Cyrenaicum Hruby . Arum</i>	Araceae
4	<i>Scorzonera Undulata</i> Vahl , Symb.	Asteraceae
5	<i>Androcymbium Gramineum</i> (Cav.) Mcbride Var . <i>Gramineam</i> .	Liliaceae
6	<i>Asphodelus Microcarpus</i> Salzm .& Viv .	Liliaceae
7	<i>Urginea Maritime</i> (L.) Baker	Liliaceae
8	<i>Cyclame Rohlfsianum</i> Asehers.	Primulaceae

Table 8: Shows The Therophytes in The Study Area.

Number	Name of Species	Family
1	<i>Chamomilla Aurea</i> (Loefl.) Gax Ex Cossn & Kralik .	Asteraceae
2	<i>Lobularia Libyca</i> (Viv) Meisner.	Brassicaceae
3	<i>Matthiola Fruticulosa</i> (L) Maire	Brassicaceae
4	<i>Sinapis Flexuosa</i> Poiret .	Brassicaceae
5	<i>Euphorbia Dracunculoides</i> Lam.	Euphorbiaceae
6	<i>Euphorbia Peplus</i> L .	Euphorbiaceae
7	<i>Lotus Tetragonolobus</i> L	Fabaceae
8	<i>Medicago Minima</i> (L.) Bart	Fabaceae
2	<i>Melilotus Sulcatus</i> Desf .	Fabaceae
3	<i>Lotus Tetragonolobus</i> L.	Fabaceae
4	<i>Geranium Molle</i> L.	Geraniaceae
10	<i>Malva Aegyptia</i> Linn .	Malvaceae
11	<i>Malva Parviflora</i> L. Var . <i>Parviflora</i> .	Malvaceae
12	<i>Papaver Rhoeads</i> L.	Papaveraceae
13	<i>Plantago Cyenaica</i> Durand & Barratte	Plantaginaceae

Table 9: Between The Life Forms of Medicinal and Aromatic Plants in The Study Area

Number	Number of Species	Life Forms	Percentage
1	12	Phanerophytes.	%1.71
2	35	Chamaephytes	%50
3	8	Cryptophytes	%11.4
4	15	Therophytes.	%21.4
	70	.	

RECOMMENDATIONS

1. Preserving medicinal and aromatic plants as they are considered a wealth of nature that are on the verge of extinction.
2. Work to collect and preserve the seeds of traded plants in the National Genetic Assets Bank, as they are considered a seed stock that must be preserved from extinction.
3. Activating agricultural police laws to reduce the trade in medicinal plants, as it is an area that is constantly exposed to depletion
4. Benefiting from the experiences of neighboring countries and exchanging experiences and scientific research in the field of alternative medicine.
5. Educating the local population on how to harvest plants in a scientific manner by preserving their roots.
6. 6-Continue in this type of studies until most of the vegetation cover is covered in mountains, valleys and plains of the green mountain and inventory the most exploited species.

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Satellite imagery analysis from the American land Sta 8 and 5 using the space change equation

Table 9 between the life forms of medicinal and aromatic plants in the study area.

Through the study, it was found that plant species belonging to life forms were represented by Phanerophytes by 1.71%, while by Chamaephytes by 50%, by Cryptophytes by 11.4% and by Therophytes. And by Therophytes%21.4(9).

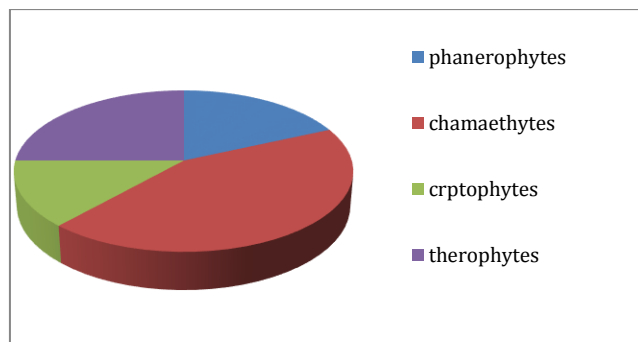


Figure 2: Percentages of growth forms in the study area according to the system (1934, Raunkiaer)

