An- Najah National University
Faculty of Graduate Studies

Studies on Folkloric Medicinal Plants Used by Palestinians in the Qalqilia District

By
RAEDA TAWFEEQ EBRAHIM DAOUD

SUPERVISOR
Prof. Dr. Mohammed S. Ali-Shtayeh

Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Environmental Science, Faculty of Graduate Studies, at An-Najah National University, Nablus; Palestine.

2008

Studies on Folkloric Medicinal Plants Used by Palestinians in the Qalqilia District

By

Raeda Tawfeeq Ebrahim Daoud

This thesis was successfully defended on 5/ 3/ 2008 and approved by:

Committee members	**Signature**
1. Prof. Dr. Mohammed S. Ali-Shtayeh (Supervisor)	.....
2. Dr. Mohammed Musmar (Internal Examiner)	.....
3. Dr. Hazem Sawalha (External Examiner) **Arab American University of Jenin**	.....

DEDICATION

To my parents, brothers, sister, and my friends for their encouragement, with love and respect

ACKNOWLEDGEMENTS

I would like to express my sincere special thanks and gratitude to my supervisor, Professor Dr. Mohammed S. Ali-Shtayeh for his supervision, encouragement, guidance and help throughout this study. Thanks are also due to Miss Rana M. Jamous for her guidance help and encouragement. I will never forget the role of the committee members.

I am also indebted for the generous help and facilities supplied by the Biodiversity and Environmental Research Center, BERC, Til, Nablus, throughout this work.

I offer my faithful thanks to my lovely father- may Allah mercy him- who I always dream and longed to be with me to share me this happiness of achievement.

Special thanks are due to my mother, brothers, sister, and their children for their help, patience encouragement and endless support.

Also special thanks for colleagues at An-Najah University and my school mates in various schools, and my friends especially Hadeel Shwahneh, Tagreed Jarar, Maha Melhem, Amal Jaber, Majida Sabri, Ruba Elqaisy and RADAR group, for their help and encouragement.

إقـــــرار

أنا الموقع/ة أدناه, مقدم الرسالة التي تحمل العنوان:

Studies on Folkloric Medicinal Plants Used by Palestinians in the Qalqilia District

أقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص, باستثناء ما تمت الإشارة إلية حيثما ورد, وان هذه الرسالة ككل, أو أي جزء منها لم يقدم من قبل لنيل أي درجة أو لقب علمي أو بحثي لدى أية مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's Name: اسم الطالب:

Signature: التوقيع:

Date: التاريخ:

LIST OF CONTENTS

	Page
Committee Decision	II
Dedication	III
Acknowledgment	IV
إقرار	V
List of Contents	VI
List of Tables	VIII
List of Figures	IX
Abstract	X
CHAPTER ONE: INTRODUCTION	1
1.1 Definitions	2
1.2 Herbal Medicine	3
1.3 History of Herbal Medicine	5
1.4 Islamic Medicinal History	6
1.4.1 Prophet Medicine	6
1.4.2 The Second Stage of Islamic Medicine	6
1.5 Traditional Medicine in Palestine	8
1.5.1 Traditional Arabic Palestinian Herbal Medicine (TAPHM) among Arab Palestinian communities in Israel	9
1.5.2 TAPHM in the Northern West Bank (NWB) and Gaza	10
1.6 The use of plants in traditional medicine in some Arab countries	11
1.7 The Study Objectives	12
CHAPTER TWO: MATERIALS AND METHODS	**14**
2.1 Study Area	15
2.1.1 Borders	15
2.1.2 Area and Population	15
2.1.3 Climate and Rainfall	15
2.2 Study Population	16
2.3 Ethnobotanical Methods	19
2. 3.1 Identification and Classification	19
2.4 Data Analysis	20
CHAPTER THREE: RESULTS	**22**
3.1 Taxonomic diversity of plants under investigation	23

3.2 Most cited plants and remedies 24
3.3 Socio-economic significance 33
3.4 Sources of ethnobotanic knowledge 34
3.5 Procurement methods of plant sources 34
3.6 Used parts 35
3.7 Forms of use and preparation 36
3.8 Daily used plants 36
3.9 Storage of medicinal plants 47
3.10 Herbal medicine vs. synthetic drugs 47
3.11 Non-botanical medical materials 48
3.12 Healing potential of medicinal plants based on calculated indices 49
3.12.1 Fidelity level values (FL) 49
3.12.2 Relative popularity level values (RPL) 49
3.12. 3 Rank-order priority (ROP) values 50
3.12.3.1 Healing effectiveness among study plants 50
CHAPTER FOUR: DISCUSSION 61
4.1 Study population 62
4.2 Primary use 63
4.3 Taxonomic diversity of plants 64
4.4 Commonly used plants and remedies 65
4.5 Socio-economic significance and sources of ethnobotanic knowledge 67
4.6 Plant parts and forms used 68
4.7 Non-botanical medical materials 69
4.8 **Healing potential of medicinal plants based on calculated indices** 69
4.8.1 Relative popularity level values (RPL) 69
4.8.2 Rank-order priority (ROP) values 70
CONCLUSION AND RECOMMENDATION 71
References 72
APPENDICES 80
Appendix A 81
Appendix B 86
Appendix C 92
Appendix D **108**
Appendix F **113**
Abstract in Arabic **ب**

LIST OF TABLES

No.	Title	Page
3.1	Distribution of plant families by number of genera and species	23
3.2	Distribution of plant by number of informants	25
3.3	Diversity of medicinal use- categories	32
3.4	Latin, family, English, and local Arabic names, and plant parts, preparation and the diseases treated by local medicinal plant species used in TAPHM in the Qalqilia District	37
3.5	Non-herbal materials used in TAPHM	48
3.6	Distribution of plant by ROP	51
3.7	Healing effectiveness among study plants based on primary use and ROP values	58
4.1	comparison between 20 plants cited in the present survey with those cited in West Bank and Israel survey	64
4.2	The top ten utilized plants based on the number of informants who mentioned the plant for any use, in Qalqilia, Northern West Bank, and Gaza Strip	67
4.3	The top ten utilized plants based on ROP, in Qalqilia and West Bank	70

LIST OF FIGURES

No.	Title	Page
2.1	Qalqilia District map	17
2.2	Distribution of study population by sex	18
2.3	Distribution of study population by age	18
2.4	Photograph shows interview with informants	20
3.1	Procurement methods of medicinal plants	33
3.2	Sources folk medical knowledge	34
3.3	Sources of used plants	35
3.4	Percentage of used plant parts	35
3.5	Daily used plants by the study population	47
3.6	Relationship between number of informants who cited a particular plant and the number of its uses.	57
3.7	Plant figures	59

Studies on Folkloric Medicinal Plants Used by Palestinians in the Qalqilia District

By
Raeda Tawfeeq Ebrahim Daoud

SUPERVISOR
Prof. Dr. Mohammed S. Ali-Shtayeh

ABSTRACT

An ethnobotanical study was conducted in the Qalqilia district, a semicoastal area in the northern West Bank, Palestine from January 2006 to April 2007. The study aimed at evaluating the current status of the Traditional Arabic Palestinian Herbal Medicine (TAPHM) in the Qalqilia District, determining medicinal plants still in use, their primary health care importance at the household level, economic value, conservation status, and their healing potentials. The work also aimed at documenting and preserving the traditional knowledge associated with the use of medicinal plants before its disappearance. Information was collected from 200 people: 174 women and 26 men, using specially designed questionnaires. The participants included 3 local healers, and 197 well known informants. One hundred and sixteen medicinal plants were reported to be used as a cure for 62 ailments. The studied plants belong to 46 families and 103 genera. The fidelity level (FL), relative popularity level (RPL), and rank order priority (ROP) of the medicinal plants were determined. Based on their FL values, the following plants were the most frequently utilized plants: *Dianthus strictus* Banks & Sol., *Ficus sycomorus* L., *Pyrus communis* L., *Abelmoschus esculantus* L., *Oryza sativa* L., *Corylus*

avellana L., *Cupressus sempervirens* L., *Salvadora persica* L., *Arachis hypogea* L., *Lepidium sativum* L., *Spinacia oleraceae* L., and *Opuntia ficus- indica* (L.) Mill. Based on their RPL values, the following plants can be considered popular plants: *Allium cepa* L., *Allium sativum* L., *Anisum vulgare* L., *Camellia thea* Link., *Ceratonia siliqua* L., *Citrus limon* (L.) Burm. Fil, *Coffea arabica* L., *Majorana syriaca* (L.) Rafin., *Matricaria aurea* (L.) Sch. Bip., *Mentha spicata* L., *Olea europaea* L., *Petroselinum sativum* Hoffm., *Ricinus communis* L., *Salvia fruticosa* Mill., *Sesamum indicum* L., and *Trigonella foenum- graecum* L. The remaining plants were considered less popular. Based on ROP values, and primary use, the following medicinal plants were considered to be the most effective: *Ceratonia siliqua* L. (ROP= 92.9), *Sesamum indicum* L. (92), *Cucumis sativus* L. (85.6), *Salvia fruticosa* Mill. (86.2), *Camellia thea* Link. (81.6), *Anisum vulgare* L. (79.6), *Lycopersicon esculentum* Mill. (75.7), *Teucrium polium* L. (75.2), *Crataegus aronia* (L.) Bosc. ex DC. (74.3), *Allium cepa* L. (73.8), *Majorana syriaca* (L.) Rafin. (73.3), and *Coffea arabica* L. (70.3). The most frequently utilized plant parts were leaves 38.8 %, followed by fruits 25%, and seeds 24.1 %. The majority of remedies were used to treat gastrointestinal disorders, 97 plants (83.6 %) followed by skin related health problems, 77 plants (66.4%), and reproductive system, 68 plants (58.6%). This probably indicates a high incidence of these types of ailments in the region due to poor socio-economic and sanitary conditions of these people. Fifteen animal or mineral materials were also found to be used in the TAPHM for the treatment of human ailments.

Chapter One

Introduction

Palestine is distinguished by its unique geographical location at the meeting point of three continents; Asia, Africa, and Europe. It has a large desert and a lot of mountains; it is at the coast of the Mediterranean, in addition to the continental rift valley. This geographical variety lead to the weather and climate changes and this in turns leads to biodiversity (Mendelssohn & Yom-Tov, 1999). As a result, Palestine is famous for its availability of medicinal and useful plants that are used for a long period of time (Crowfoot & Baldensperger, 1932).

The Palestinian Mountains are rich in plant species. About 2953 species are found on this small Mediterranean area, of which more than 700 are mentioned in published ethnobotanical data (Dafni *et al*., 1984; Friedman *et al*., 1986; Palevitch & Yaniv, 1991; Shtayeh & Hamad, 1995; Ali- Shtayeh & Jamous, 2002; 2006).

1.1 Definitions

Medicinal plant: is a plant which at least one of its parts contains substances that can be used for therapeutic purposes (Sofowora, 1982; Bruneton, 1995).

Traditional Medicine (TM): Traditional medicine refers to health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being.

Complementary and Alternative Medicine (CAM): is a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine.

Countries in Africa, Asia and Latin America use traditional medicine (TM) to help meet some of their primary health care needs. In Africa, up to 80% of the population uses traditional medicine for primary health care (World Health Organisation *et al*., 1993). In industrialized countries, adaptations of traditional medicine are termed "Complementary" or "Alternative" (CAM).

Herbal medicine, herbology, and phytotherapy: is a folk and traditional medicinal practice based on the use of plants and plant extracts.

Ethnomedicine: is a sub-field of medical anthropology and deals with the study of traditional medicines: not only those that have relevant written sources (e.g. Traditional Chinese Medicine, Ayurveda), but especially those, whose knowledge and practices have been orally transmitted over the centuries.

1.2 Herbal Medicine

Utilizing the healing properties of plants is an ancient practice. People in all continents have long used hundreds, if not thousands, of indigenous plants for treatment of various ailments dating back to prehistory. These plants are still widely used in ethnomedicine around the world.

Anthropologists theorize that over time, and with trial and error, a small base of knowledge would have been acquired within early tribal communities. As this knowledge base expanded over the generations, the specialized role of the herbalist emerged. The process would likely have occurred in varying manners within a wide diversity of cultures.

Plants have an almost limitless ability to synthesize aromatic substances, most of which are phenols or their oxygen-substituted derivatives such as tannins. Most are secondary metabolites, of which at least 12,000 have been isolated, a number estimated to be less than 10% of the total. In many cases, these substances (esp. alkaloids) serve as plant defense mechanisms against predation by microorganisms, insects, and herbivores. Many of the herbs and spices used by humans to season food yield useful medicinal compounds.

The use of and search for drugs and dietary supplements derived from plants have accelerated in recent years. Pharmacologists, microbiologists, botanists, and natural-products chemists are combing the Earth for phytochemicals and leads that could be developed for treatment of various diseases. In fact, many modern drugs have been derived from plants (Hunke, 1962/ 1981).

The use of herbs to treat disease is almost universal among non-industrialized societies. A number of traditions came to dominate the practice of herbal medicine in the Western world at the end of the twentieth century: The Western, based on Greek and Roman sources; also called Arabic Medicine, The Ayurvedic from India, and Chinese herbal medicine (Chinese herbology) (WHO, 2002).

1.3 History of Herbal Medicine

There are many factors that lead to the process of increasing the use of medical plants in treating different diseases. First of all, the presence of new diseases that some of which have not been got rid of till now. Secondly, the belief of the societies' members that the natural substances have good effects not bad effects. Finally, the appearance of ecological movements all over the world that call for paying attention to the medical use of plants since people believed strongly that plant- medicine is safer and more successful than the manufactured synthetic drugs (Shulz *et al*., 1998; Tyler, 1999).

The old Egyptians are considered to be the first nation that practiced medicine according to correct rules and bases. Ebers papyrus (1550 B.C) showed that the old Egyptians were using plants in medicine.

The Greeks also knew of the importanc of medical plants and their use. This is evident from Hippocrates oath (377-460 B.C), who was famous for his medical recepies and writings in the field. In addition, Theophrastus (285- 372B.C) wrote a very important book entitled: Etiology of plants (*be Historia Plantarum*). This famous book includes 500 medical plants.

During the Roman Age, people were aware of drugs and their medicinal applications. Since that time, doctors examine and diagnose disease and were able to prescribe suitable treatment based on their diagnosis. At that time pharmacist job was to prepare medicine and drugs. It is also important to note that during that time the physicans wre also the Pharmacist. This age also witnessed the appearance of Discorides (65 A. D)

who put a medical book entitled "*Materia Medica*". This book includes descriptions for about 500 medical plants besides their uses. This famous book remained one of the most vital resources for studying drugs until the end of 16th century. Many Roman writers had also participated in the study of medicinal plants. For example, Pliny the Elder (73-79 A.D) wrote *Historia Naturalis* (Natural History) and Claudius Galen (130- 201A.D) wrote twenty books about drugs.

1.4 Islamic Medicinal History

1.4.1 Prophet Medicine

The Arab System in the traditional medicine has grown through the works of the doctors who lived during the time of the prophet Mohammad (PBUH) (571- 632 A.D), among them, Al-Hareth Bin Kildeh and Ibn Ramthah Al-Tamimi. The sayings of the prophet Mohammad (PBUH) about health and disease have developed into a system that is known later as Prophet Medicine (AT-Tib An-Nabawi) (Savage-Smith, 1996; Johnstone, 1998). The old Islamic medicine was influenced by the medical practices in the Persian countries (Iran), Iraq, Greece, Rome and India. The system of Greco-Roman had developed depending mainly on the books of Hippocrates, Discorides and Galen in Alexandria and other cities that developed as centers for medical and scientific activity (Savage-Smith, 1996).

1.4.2 The Second Stage of Islamic Medicine

During the Umayyad rule (661- 750 A.D.), attempted translations of ancient medical works began. The Abbasids dominated the sociopolitical life of the greater part of the Muslim world from 750 to 1258 A. D. The ten

Caliphs of the period were generous in their promotion of knowledge and medicine. Al-Mansur (reign: 754- 775 A.D.), Harun al-Rashid (reign: 786- 802A.D.), and al-Ma'mun (reign: 813- 833 A.D.) were especially respected. Countless manuscripts, particularly those written in Greek, were collected and stored in the Bayt al- hikmah (House of Wisdom, established in 830 A.D., by Caliph al-Ma'mun), where scholars translated them into Arabic (Hitti, 1952; Ullmann, 1978).

Within a century, Muslim physicians and scientists were making original contributions to medical and botanical knowledge. In Baghdad, and in other parts of the Muslim world, centers of medical learning had already been founded. The next three centuries saw the synthesis and creation of new drugs and therapies.

One of the greatest and most famous Islamic doctors was Ibn Sina (Avicenna, 980- 1037 A.D.), who combined the *Canon of Medicine* (Kitab al-Qanun fi al-Tibb), which is regarded as the epitome of Islamic medicine, and the culmination and masterpiece of Arab systematization. This text includes many descriptions of uses for medicinal plants (Al-Said, 1997). Another Arabic philosopher- physician of this period was al- Razi (Rhazes, 865- 923 A.D.), who composed a *Comprehensive Book on Medicine (Kitab al- Hawi fi al-Tibb).* The material composed by al- Hawi was arranged under the headings of different diseases, with separate sections on pharmacologic topics. It should be noted that Ibn Sina's and al-Razi's works were translated later into Latin and continued to influence medical work until the eighteenth or even the nineteenth century (Johnstone, 1998; Murad, 1966; Al-Shatti, 1970).

At the western end of the Islamic empire, Islamic Andalus, Spain was established in 750 A.D., with its capital at Cordoba. The areas around Cordoba and Granada became centers of learning, with the rich and diverse flora of Spain contributing to the development of medical botany.

Ibn al-Baytar (1197-1248 A.D.), a physician, spent this early life identifying and studying different plants. Ibn al- Baytar's work, the *Compendium of Simple Drugs and Food* (*al- jami' li-mufradat al- adwiya wa'l-aghdiya*) described more than 1400 medical drugs, including 300 previously undocumented drugs. The text recorded them alphabetically and discussed them with clarity and detail. This compendium also specified the names of herbs and remedies in various languages, providing a first- class tool for future comparative research on medical plants (Al-Najjar, 1994; Hamarneh, 1991).

The industrial revolution- that Europe witnessed at the end of the eighteenth century and the beginning of the nineteenth century- made big progress in the field of chemistry. In this field, it was possible to take out many active substances from different plants and it was possible to manufacture a large number of these substances throughout the laboratory (manufacturing) ways without depending on the plants. By this way, the manufactured medicine and drugs appeared and they were used widely because of their economic produce and their easy marketing.

1.5 Traditional Medicine in Palestine

The modern use of plant medicine in Palestine has historical roots in ancient Arabic medicine, which itself was influenced by the ancient medical practices of Mesopotamia, Greece, Rome, Persia, and India

(Mursi, 1966; Savage, 1996; Abu- Rabia, 2005; Bailey & Danin,1981; Granqvist, 1974). The use of traditional medicine, particularly herbal medicine, is widespread throughout the contemporary Middle East, including Palestine (Abu-Rabia, 1999; Ali- Shtayeh *et al*., 2000; Abu-Rabia, 2005; Ali-Shtayeh & Jamous, 2006). More detailed discussion on this issue is shown in the following topics.

1.5.1 Traditional Arabic Palestinian Herbal Medicine among Arab Palestinian communities in Israel

During the last 43 years, there were a few studies concerning ethnobotany, or ethnopharmacology of medicinal plants used in traditional medicine. These studies were aimed at identifying the traditional medicine and the medical uses for the medicinal plants, minerals, and salts by the Arab Palestinians in Israel to protect and save them.

At the beginning of the eighties of the last century, an ethnobotanic study was made about the medicinal plants which were in use in north of Israel. The study involved 66 informants, and produced information about 150 species of the plants which were used in folkloric medicine (Dafni *et al*., 1984).

Two year latter another ethnobotanic study was carried out in Israel involving 100 persons from the Palestinian Arab community (Muslims, Christian, Druses, Bedouins, and Sharkas) (Palevitch *et al*., 1986).

Also, in 1986, a study that aimed to value and to estimate the curing value of the medical plants that were used by the Bedouins in Negev desert in the middle of the 80s from the last century. This study includes 27 persons who were known for their wide knowledge in using the medical

plants in treatment. This study showed; there were about 81 species of these plants, 41 were mentioned by four persons for any medical use (Friedman *et al*., 1986).

In 1991, Palevitch and Yaniv released a book of two parts under the title Medicinal Plants in Holy land.

In the late 90's of the last century, Lev and Amar (2000) carried out an ethnopharmacological study on medical materials (*Materia Medica*) that were sold in shops in Israel. In this study, about 310 materials were found to be used; including 264 plants (85.1%), 20 animal materials (6.5%), 19 minerals and metals (6.1%), and 7 other materials (2.3%).

An ethnobotanical survey was conducted among 31 local Arab practitioners living in Galilee (15), Negev (8), Golan Heights (1), and West Bank (7) (Said *et al*., 2002; Azaizeh *et al*., 2002). The survey revealed that 129 plant species were still in use in the Arabic Traditional Medicine for the treatment of various diseases.

A twenty-year (1984-2004) study of ethnobotany and folk medicine among pastoral nomads in the Middle East was carried out by Abu- Rabia (2005). The study presented examples of different treatments of diseases and disorders of the urinary tract carried out by healer herbalists. Eighty-five plant species belonging to thirty-six families were identified. The most representative families were: Compositae (8), Brassicaceae (6), Poaceae (6), Umbelliferae (6).

1.5.2 TAPHM in the Northern West Bank (NWB) and Gaza

An ethnobotanical survey was carried out in the West Bank to evaluate the relative efficacy of the plants used to treat skin diseases and prostate

cancer (Ali-Shtayeh *et al*., 2000). A total number of 102 informants, 165 plant species mentioned by the informants, 63 (38.1%) were mentioned by three or more informants. On the basis of their primary uses, 21 of these plants were reported to relieve skin disorders, 17 for urinary system disorders, 16 for gastric disorders, nine for cancer and prostate disorders, eight for arthritis, five for respiratory problems, and five for other ailments. The following plant species were classified as popular in this study: *Teucrium polium, Matricaria aurea, Urtica pilulifera, Paronychia argentea, Petroselinum sativum, and Salvia fruticosa*. The remaining 57 species were classified as 'less popular'. Fifty-nine plants were claimed to be effective against cancer and prostate disorders, which include *Arum dioscorides, Urtica pilulifera, Allium sativum, Viscum cruciatum,* and *Allium cepa* (Ali-Shtayeh *et al*., 2000).

A second comprehensive ethnobotanic study was carried out in the Northern West Bank (NWB) and Gaza Strip in 2006, by Ali-Shtayeh and Jamous. The study population comprised 535 subjects (340 from NWB, 153 from Gaza Strip). Many plant species were still in use in traditional medicine in Palestinian communities, for treating various human diseases (261 in the NWB, and 120 in in the Gaza Strip, belonging to 84 families and 226 genera). The most commonly used plants in the NWB and Gaza were: *Matricaia aurea, Salvia fruticosa, Allium sativum,* and *Anisum vulgare*.

1.6 The use of plants in traditional medicine in some Arab countries

Some researches were made on traditional herbal medicine in some Arab country such as Jordan, Syria, Lebanon, Yemen, Egypt ...etc. (Abu-

Irmaileh & Afifi, 2000, 2003; Lev & Amar, 2002; Sanagustin, 1983; Alrawi & Chaakravarty, 1964; Hoper, 1937; Kotb, 1985; Abu-Chaar & Ades, 1961; Fahmy, 1963; Eddouksh *et al*., 2002; Heneidy & Bidak, 2004). Recent studies have reported that less than 200– 250 species of plants are still in use in Arabic Traditional Medicine for treatment of many diseases in the Arab world (Lev & Amar, 2000, 2002; Azaizeh *et al*., 2003; Said *et al*., 2002).

1.7 The Study Objectives

Medicinal plants are increasingly utilized for treating various human ailments and diseases worldwide. This has been stimulated by several factors including the notion that plant remedies are safer and sometimes more effective than synthetic drugs. Palestine is unique and diverse in its geographical location and its cultural characteristics, including traditional Arab Palestinian medicine especially herbal medicine and the use of medicinal materials for curing illnesses.

The current study represent a systematic review on Traditional Arabic Palestinian Herbal Medicine (TAPHM). Due to limited studies in the field, the current study was aimed at:

1. Evaluating current status of the Palestinian herbal medicine in the Qalqilia District, determining medicinal plants still in use, their primary health care importance at the household level, economic value, conservation status, and their healing potentials; and
2. Documenting and preserving of the traditional knowledge associated with the use of medicinal plants for future generations.

The study was conducted in the district of Qalqilia due to the fact that the area represented a semi-coastal area with an expected wide range of plant diversity.

Chapter Two

Materials and Methods

2.1 Study Area

An ethnobotanic survey was conducted in Qalqilia District from January 2006 to April 2007 (Fig. 2.1). Qalqilia district is situated in the north west of the West Bank, near the Green Line in Palestine.

The destrict is located at the crossroads of the western parts of Nablus Mountains and the eastern part of the Palestinian coast, along the Palestinian coast at Latitude 32.2 N and Longitude 35 E.

2.1.1 Borders

North: Tulkurm region, East: Nablus, South: Salfit, West: The Green Line.

2.1.2 Area and Population

Qalqilia District has an area of 160500 Dunum, with a population of 104,543 inhabitants, and an annual growth rate of 3.8%. Qalqilia city has 47,952 inhabitants (Palestinian Central Bureau of Statistics PCBS; 2006). The population, comprises urban (Qalqilia & Azzun), 54.34 %; rural, 45.34%; and Bedouin communities, 0.32%.

2.1.3 Climate and Rainfall

Qalqilia has a temperate Mediterranean climate with rainy and warm winter, and hot and humid summer with humidity levels reaching 70% during July and August. Annual average rainfall is about 600 mm (Qalqilia Municipality, 2007).

2.2 Study Population

Eight communities were selected in Qalqilia district, one in each of the following towns and villages located within hilly and semi coastal areas: Qalqilia, Azzoun, Kufur Thulth, Hableh, Ras Attya, Jeensafout, Far'ata and Al-Nabi Alyas (Figure 2.1). The considered localities were expected to include a broad variety of ecological and socio-economic environments.

Interviews were conducted during the spring, winter, and summer of 2006, with approximately 25 informants in each community (total number of informants 200; 26 men, 174 women) (Figure 2.2). The informants were selected using snowball techniques and preference was given to traditional healers, or to those community members who are emically considered to be " knowledgeable persons" in the field of traditional and herbal medicine, and women who are traditionally responsible for family healthcare (Table A.1).

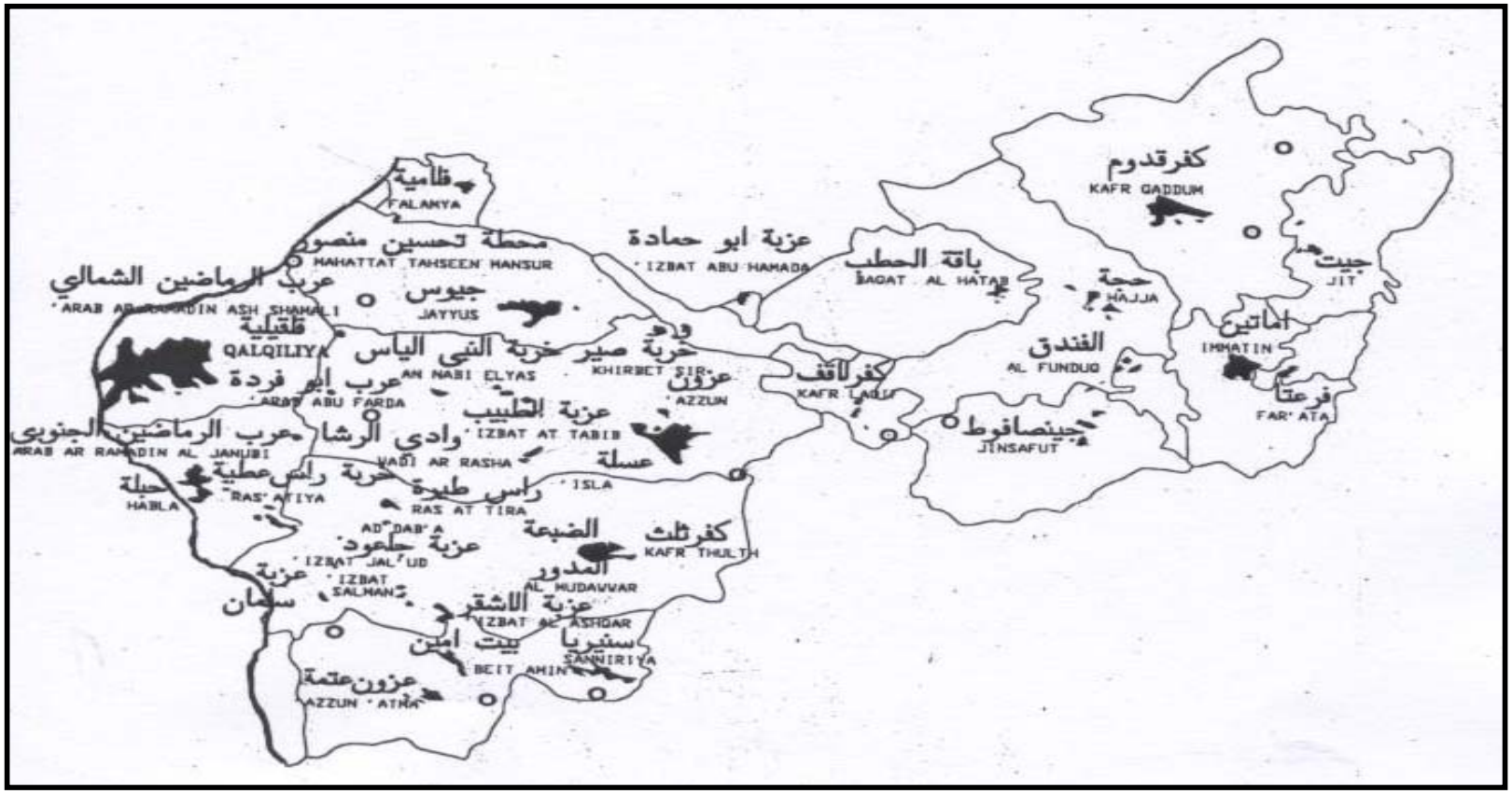


Figure 2.1 Qalqilia District map

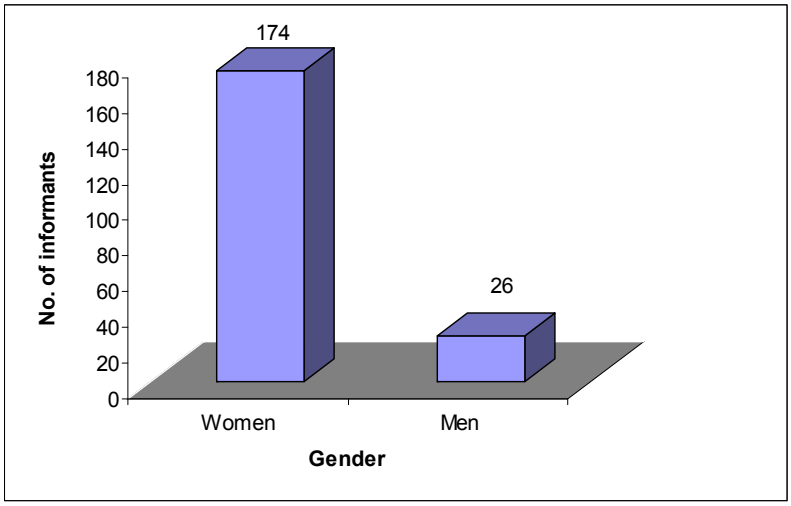


Figure 2.2 Distribution of study population by sex

Most of the informants (average age 41 years) were either native born or had been living in the region for 20 years or above (Figure 2.3).

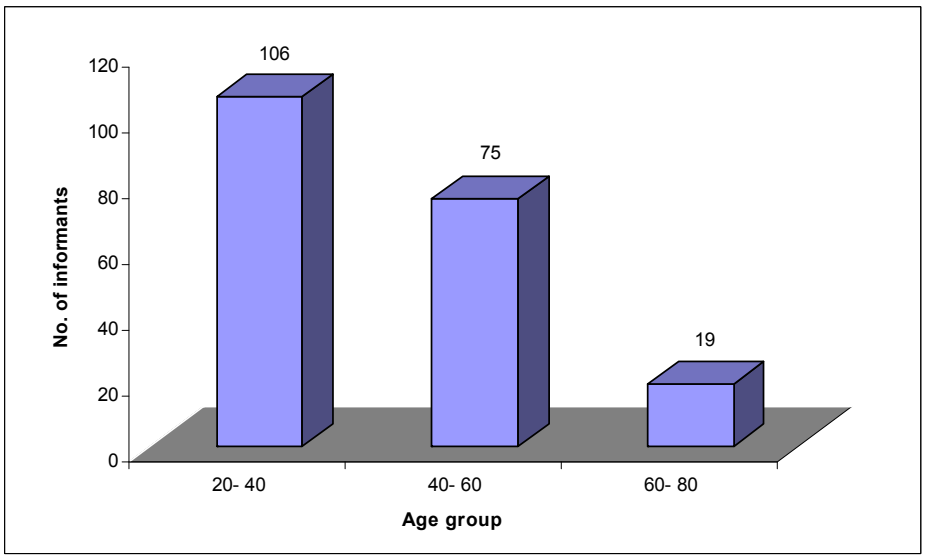


Figure 2.3 Distribution of study population by age

2.3 Ethnobotanical Methods

In this study semistructured interviews were employed to gather ethnobotanic information (Appendix B). A clear expression of consent was obtained before each interview (Figure 2.4). Informants were asked to name medicinal plants they know and use, and precisely describe their methods of preparation and use. Questions addressed to the informants were therefore, mainly focused on the purpose of plant application, parts used, the manner of their preparation and administration, forms of use, procurement method, place of collection, date/season of collection, method of storage, and period of storage confirmation.

2.3.1 Identification and classification

Voucher specimens of species mentioned by informants were collected. Where necessary, the informants were invited to go to the field with the researcher to collect the plants or were shown the plants later to confirm if the species were actually the right plants.

Plant species identification was carried out with the aid of available floras, and field guides (Zohary & Feinbrun-Dothan, 1966-1986; Plitmann et al., 1983; Al-Eisawi, 1998; Ali-Shtayeh et al., 2003). Species identification was further confirmed by comparing voucher specimens with herbarium specimens preserved at the BERC Herbarium, Biodiversity and Environmental Research Center, BERC, Til, Nablus.

Figure 2.4 Photograph shows interview with informants

2.4 Data Analysis

The collected ethnobotanical data were analyzed and various indices determined following the methods used by Friedman *et al*., (1986), and Ali-Shtayeh *et al*., (2000), to allow classification of the plant used in a rank-order priority, based on their claimed relative effectiveness. Toward this end, the fidelity level (FL) of each plant was determined as follows: $FL = (I_p / I_u) \times 100$. I_p is the number of informants who independently suggested the use of species for a particular purpose; and I_u is the total number of informants who mentioned the plant for any use.

In order to differentiate the healing potential of plants with similar FL values, but known to several informants, a correlation index (coefficient) was calculated as follows; The plants were divided into 'popular' and 'less popular' groups; Popular plants are those which were cited by more than half of the maximum number of informants (for plants reported by three informants or above) who reported a plant for any medical use (Table 3.6). The remaining plants were designated less popular.

A co-ordinate system was utilized in which the X-axis corresponds to the number of informants citing a plant for any medical use, while the Y-axis corresponds to the number of different uses reported for each plant (Figure 3.6). For plants with a low popularity level, a linear increase was assumed (r^2 = 0.631), namely, a greater number of informants cited the plant for any use, hence a greater average number of uses per species. On the other hand, for popular plants a horizontal line (Figure 3.6) was assumed namely, the average number of uses per plant is independent of the number of informants who know the species; hence, the average number of uses of a popular plant does not increase with the increased number of informants who cite the plant for any medical use. For popular plants, the relative popularity level (RPL) was arbitrarily selected to equal unity (i.e. equals 1.0). For plants within the less popular group, the RPL is less than (1.0). RPL values may be calculated for each specific plant in accordance with its position on the graph (Figure 3.6). The rank-order priority (ROP) or the corrected FL of the plants were derived from FL values, by multiplying FL values by RPL values (ROP = FL x RPL).

Mathematically (ROP = $[(I_p/ I_u)x 100]$ x RPL), so, when the I_u increases; the ROP decreases (inverse relationship), and when I_p increases; the ROP increases (direct relationship). And direct relationship between ROP and RPL.

Chapter Three

Results

3.1 Taxonomic diversity of plants under investigation

The current study reported 143 plants species that were still in use in Traditional Arabic Palestinian Herbal Medicine (TAPHM) in Qalqilia District. Out of 143 plants, 116 plants were selected for further analysis on the basis that they were reported by three or more informants (Table C.1). The rest of the plants (27) are shown in Table C.3. The plants were distributed across 46 families, and 103 genera (Table 3.1). The most represented families were: Leguminosae (9 genera, 9 species), Umbelliferae (9 genera, 9 species), Compositae (8 genera, 9 species), and Labiatae (7 genera, 8 species) (Table 3.1).

Table 3.1 Distribution of plant families by number of genera and species

No.	Family Name	العائلة النباتية	No. of Genera	No. of Species
1	Araceae	لوفية	1	1
2	Burseraceae	البخوريات	1	1
3	Cactaceae	الصباريات	1	1
4	Convolvulaceae	العلاقية	1	1
5	Corylaceae	البندقية	1	1
6	Cupressaceae	السروية	1	1
7	Euphorbiaceae	السوسبية	1	1
8	Fagaceae	البلوطية	1	1
9	Hypericaceae	الهايبركية	1	1
10	Iridaceae	السوسنية	1	1
11	Lythraceae	الحنائيات	1	1
12	Musaceae	الموزية	1	1
13	Oleaceae	الزيتونية	1	1
14	Oxalidaceae	اقصلييات	1	1
15	Palmae (Arecaceae)	النخيلية	1	1
16	Pedaliaceae	السمسمية	1	1
17	Pinaceae	الصنوبرية	1	1
18	Piperaceae	الفلفليات	1	1
19	Portulacaceae	الرجلية	1	1
20	Primulaceae	الربيعية	1	1
21	Punicaceae	الرمانية	1	1
22	Ranunculaceae	الشقيقية	1	1
23	Rubiaceae	الروبية	1	1
24	Salvadoraceae	الأراكية	1	1
25	Theaceae	عائلة الشاي	1	1

No.	Family Name	العائلة النباتية	No. of Genera	No. of Species
26	Tiliaceae	الزيزفونية	1	1
27	Urticaceae	القريصية	1	1
28	Vitaceae	الكرمية	1	1
29	Caryophyllaceae	القرنفلية	2	2
30	Lauraceae	الغارية	2	2
31	Anacardiaceae	البطمية, المانجية	2	3
32	Liliaceae	الزنبقية	2	3
33	Moraceae	التوتية	2	3
34	Rutaceae	السذابية	2	4
35	Malvaceae	الخبازية	3	3
36	Myrtaceae	الآسية	3	3
37	Zingiberaceae	الزنجبيلية	3	3
38	Solanaceae	الباذنجانية	3	5
39	Gramineae (Poaceae)	النجيلية	4	4
40	Cruciferae (Brassicaceae)	الصليبية	4	5
41	Cucurbitaceae	القرعية	4	5
42	Rosaceae	الوردية	6	7
43	Labiatae	الشفوية	7	8
44	Comositae(Asteraceae)	المركبة	8	9
45	Leguminosae (Fabaceae)	البقولية	9	9
46	Umbelliferae (Apiaceae)	الخيمية	9	9

3.2 Most cited plants and remedies

The most frequently utilized plants were *Olea europaea* (Olives) (197 informants, 98.5%); *Salvia fruticosa* (sage) (196, 98%); *Citrus limon* (lime, lemon tree) (171, 85.5%); *Camellia thea* (Tea) (152, 76%) as shown in Table 3.2.

Medicinal plants were reported to be used for the treatment of several ailments as shown in Table 3.3. The largest number of remedies was used to treat gastrointestinal disorders, 97 plants (83.6 %). The second commonly used remedies were for the treatment of skin related problems including burns and hair and were represented by 77 plants (66.4%). Remedies for the treatment of problems related to reproductive system were represented by 68 plants (58.6%).

Table 3.2 Distribution of plant by number of informants

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	الع لاتي انائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
1.	*Olea europaea* L.	Olives	زيتون	Oleaceae	الزيتونية	197	17	Ear diseases	112	56.9	1	56.9
2.	*Salvia fruticosa* Mill.	White sage, Common sage, garden sage	مريمية	Labiatae	الشفوية	196	14	Digestive system	169	86.2	1	86.2
3.	*Citrus limon* (L.) Burm. Fil	Lime, limon tree	ليمون	Rutaceae	السذابية	171	12	Respiratory system	113	66.1	1	66.1
4.	*Camellia thea* Link.	Tea	شاي	Theaceae	عائلة الشاي	152	10	Eye diseases	124	81.6	1	81.6
5.	*Anisum vulgare* L.	Anise	ينسون	Umbelliferae (Apiaceae)	الخيمية	152	12	Digestive system	121	79.6	1	79.6
6.	*Allium sativum* L.	Garlic	ثوم	Liliaceae	الزنبقية	148	18	Digestive system	80	54.1	1	54.1
7.	*Mentha spicata* L.	Peppermint	نعنع	Labiatae	الشفوية	139	11	Digestive system	77	55.4	1	55.4
8.	*Coffea arabica* L.	Coffee	قهوة	Rubiaceae	الروبية	138	7	Nervous system	97	70.3	1	70.3
9.	*Matricaria aurea* (L.) Sch. Bip.	Golden cotula	بابونج	Compositae(Asteraceae)	المركبة	136	13	Respiratory system	85	62.5	1	62.5
10.	*Majorana syriaca* (L.) Rafin.	Wild thyme, mother of thyme	زعتر	Labiatae	الشفوية	135	12	Respiratory system	99	73.3	1	73.3
11.	*Ceratonia siliqua* L.	Carob	خروب	Leguminosae (Papilionaceae)	البقولية	127	7	Digestive system	118	92.9	1	92.9
12.	*Petroselinum sativum* Hoffm.	Parsley	بقدونس	Umbelliferae (Apiaceae)	الخيمية	124	11	Reproductive/urinary	75	60.5	1	60.5
13.	*Allium cepa* L.	Onions	بصل	Liliaceae	الزنبقية	122	11	Skin, burns, and hair	90	73.8	1	73.8
14.	*Trigonella foenum-graecum* L.	Fenugreek seed	حلبة	Leguminosae (Papilionaceae)	البقولية	120	10	Reproductive system	74	61.7	1	61.7
15.	*Sesamum indicum* L.	Sesame	سمسم	Pedaliaceae	السمسمية	112	8	Digestive system	103	92.0	1	92.0
16.	*Ricinus communis* L.	Castor beans	خروع	Euphorbiaceae	السوسبية	100	6	Digestive system	60	60.0	1	60.0
17.	*Lycopersicon esculentum* Mill.	Tomato	بندورة	Solanaceae	الباذنجانية	97	10	Bites, Stings	75	77.3	0.99	76.5
18.	*Cucumis sativus*	Cucumber	خيار	Cucurbitaceae	القرعية	95	9	Digestive system	84	88.4	0.98	86.5

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
	L.											
19.	*Dianthus strictus* Banks & Sol.	Wild Pink	قرنفل	Caryophyllaceae	القرنفلية	90	4	Teeth inflammation	90	100.0	0.44	44.4
20.	*Nigella ciliaris* DC.	Nigella, black cumin	حبة البركة	Ranunculaceae	الشقيقية	90	12	Reproductive system	38	42.2	0.94	39.9
21.	*Pyrus malus* L.	Apple	تفاح	Rosaceae	الوردية	82	11	Digestive system	32	39.0	0.89	34.7
22.	*Solanum tuberosum* L.	Potato	بطاطا	Solanaceae	الباذنجانية	77	4	Digestive system	57	74.0	0.44	32.9
23.	*Cinnamomum zeylanicum* Blume.	Tree Cinnamon	قرفة	Lauraceae	الغارية	76	6	Reproductive system	70	92.1	0.67	61.4
24.	*Lawsonia inermis* L.	Henna	حناء	Lythraceae	الحنائيات	70	6	Skin, burns, and hair	66	94.3	0.67	62.9
25.	*Hordeum vulgare* L.	Barley	شعير	Gramineae (Poaceae)	النجيلية	69	5	Urinary system	48	69.6	0.56	38.6
26.	*Psidium guajava* L.	Guava	جوافة	Myrtaceae	الآسية	66	6	Respiratory system	61	92.4	0.67	61.6
27.	*Lens culinaris* Medikus	Lentils	عدس	Leguminosae (Papilionaceae)	البقولية	64	5	Digestive system	59	92.2	0.56	51.2
28.	*Amygdalus communis* L.	Almond	لوز	Rosaceae	الوردية	64	5	Digestive system	38	59.4	0.56	33.0
29.	*Teucrium polium* L.	Cat thyme	الجعدة	Labiatae	الشفوية	56	9	Digestive system	44	78.6	0.71	55.9
30.	*Crataegus aronia* (L.) Bosc. ex DC.	Spiny Hawthorn	زعرور	Rosaceae	الوردية	55	8	circulatory system	48	87.3	0.89	77.6
31.	*Cuminum cyminum* L.	Cumin	كمون	Umbelliferae (Apiaceae)	الخيمية	54	3	Digestive system	49	90.7	0.33	30.2
32.	*Ecballium elaterium* (L.) A. Richard	Squirting cucumber	قثاء الحمار	Cucurbitaceae	القرعية	53	4	Digestive system	46	86.8	0.44	38.6
33.	*Ficus carica* L.	Fig tree	تين	Moraceae	التوتية	46	5	Skin, burns, and hair	26	56.5	0.56	31.4
34.	*Punica granatum* L.	Pomegranate	رمان	Punicaceae	الرمانية	34	8	Digestive system	16	47.1	0.89	41.8
35.	*Zea mays* L.	Zea, corn	ذرة	Gramineae (Poaceae)	النجيلية	33	6	Digestive system	21	63.6	0.67	42.4
36.	*Micromeria fruticosa* (L.)	Thyme	زعتر بلاط	Labiatae (Lamiaceae)	الشفوية	33	9	Respiratory system	14	42.4	0.56	23.6

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
	Druce											
37.	*Oryza sativa* L.	Rice	ارز	Gramineae (Poaceae)	النجيلية	33	1	Digestive system	33	100.0	0.11	11.1
38.	*Urginea maritima* (L.) Baker	Squill	بوصلان	Liliaceae	الزنبقية	32	3	Skin, burns, and hair	29	90.6	0.33	30.2
39.	*Eruca sativa* Miller	Garden rocket	جرجير	Cruciferae (Brassicaceae)	الصليبية	30	5	Reproductive system	24	80.0	0.56	44.4
40.	*Brassica oleracea* L.	Wild cabbage	ملفوف	Cruciferae (Brassicaceae)	الصليبية	30	8	Rheumatism	11	36.7	0.89	32.6
41.	*Triticum aestivum* L.	Wheat	قمح/نخالة	Gramineae (Poaceae)	النجيلية	29	7	Skeletal and muscular system	16	55.2	0.78	42.9
42.	*Arum palaestinun* Sibth & Sm	Spotted arum	لوف	Araceae	اللوفية	29	4	Cancer	26	89.7	0.44	39.8
43.	*Lupinus albus* L.	White Lupines	ترمس مر	Leguminosae (Papilionaceae)	البقولية	27	8	Diabetes	11	40.7	0.89	36.2
44.	*Anacardium occidentale L.*	Cashew	كاشو	Anacardiaceae	بطمية,المانجية	27	2	Reproductive system	25	92.6	0.22	20.6
45.	*Solanum nigrum* L.	Black nightshade	سموه	Solanaceae	الباذنجانية	25	4	Skin, burns, and hair	24	96.0	0.44	42.7
46.	*Ammi visnaga* (L.) Lam.	Tooth Pick	خلة	Umbelliferae (Apiaceae)	الخيمية	25	2	Urinary system	24	96.0	0.22	21.3
47.	*Urtica pilulifera* L.	Roman Nettle	قريص	Urticaceae	القريصية	25	9	Skin, burns, and hair	10	40.0	0.50	20.0
48.	*Phoenix dactylifera* L.	Date palm	نخيل، تمر	Palmae (Arecaceae)	النخيلية	25	7	digestive/nervous/ reproductive	6	24.0	0.78	18.7
49.	*Juglans regia* L.	Wallnut	جوز البلدي	Juglandaceae	الجوزيات	24	6	Reproductive system	12	50.0	0.67	33.3
50.	*Ficus sycomorus* L.	Sycamore	جميز	Moraceae	التوتية	24	2	Skin, burns, and hair	24	100.0	0.22	22.2
51.	*Vitis vinifera* L.	Grape	عنب	Vitaceae	الكرمية	22	5	Skin, burns, and hair	12	54.5	0.56	30.3
52.	*Raphanus sativus* L.	Radish	فجل	Cruciferae (Brassicaceae)	الصليبية	21	8	Ear diseases	9	42.9	0.89	38.1
53.	*Capsicum annuum* L.	Sweet Peppers, Chilli	فليفلة	Solanaceae	الباذنجانية	21	4	Circulatory system	17	81.0	0.44	36.0
54.	*Zingiber officinale* Roscoe	Ginger	زنجبيل	Zingiberaceae	الزنجبيلية	21	10	Respiratory/circulatory/reproductive	7	33.3	0.48	15.9
55.	*Foeniculum*	Fennel	شومر	Umbelliferae (Apiaceae)	الخيمية	20	8	Digestive system	11	55.0	0.89	48.9

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	الع لائي انائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
	vulgare Miller											
56.	*Brassica oleracea* var. botrytis L.	Cauliflower	قرنبيط/زهرة	Cruciferae (Brassicaceae)	الصليبية	20	4	Circulatory system	12	60.0	0.44	26.7
57.	*Quercus calliprinos* Oecne	Kermes oak	بلوط/ سنديان	Fagaceae	البلوطية	19	8	Digestive system	13	68.4	0.89	60.8
58.	*Corylus avellana* L.	Hazelnut	بندق	Corylaceae	البندقية	19	1	Reproductive system	19	100.0	0.11	11.1
59.	*Citrus sinensis* (L.) Osbeck	Orange- tree Sweet	برتقال	Rutaceae	السذابية	18	6	Respiratory, scurvy	5	27.8	0.67	18.5
60.	*Portulaca oleracea* L.	Purslane	رجلة	Portulacaceae	الرجلية	17	5	Skin, burns, and hair	12	70.6	0.56	39.2
61.	*Eucalyptus camaldulensis* Dehn.	Red River Gum	كينا	Myrtaceae	الآسية	16	6	Headache and tempreture	11	68.8	0.67	45.8
62.	*Malva neglecta* Wall.	Common mallow	خبيزة	Malvaceae	الخبازية	16	8	Reproductive system	8	50.0	0.89	44.4
63.	*Ruta chalepensis* L.	Rue	سذاب/فيجن	Rutaceae	السذابية	15	6	Digestive system	11	73.3	0.67	48.9
64.	*Pistacia lentiscus* L.	Lentisk, Mastic tree	سريس	Anacardiaceae	البطمية,المانجية	15	8	Reproductive system	4	26.7	0.89	23.7
65.	*Lactuca sativa* L.	Lettuce	خس	Compositae(Asteraceae)	المركبة	14	6	Digestive system	6	42.9	0.67	28.6
66.	*Carum carvi* L.	Caraway	كراوية	Umbelliferae (Apiaceae)	الخيمية	14	4	Reproductive system	6	42.9	0.44	19.0
67.	*Paronychia argentea* Lam.	Silvery Whitlow-Wart	رجل الحمام	Caryophyllaceae	القرنفلية	13	4	Urinary system	10	76.9	0.44	34.2
68.	*Cupressus sempervirens* L.	Cypress	سرو	Cupressaceae	السروية	12	1	Teeth inflammation	12	100.0	0.11	11.1
69.	*Salvadora persica* L.	Persian salvadora, Toothbrush tree	سواك	Salvadoraceae	الأراكية	12	1	Teeth inflammation	12	100.0	0.11	11.1
70.	*Inula viscosa* (L.) Ait.	Inula	طيون	Compositae(Asteraceae)	المركبة	11	4	Teeth inflammation	8	72.7	0.44	32.3
71.	*Cucurbita maxima* L.	Pumpkin	قرع	Cucurbitaceae	القرعية	11	4	Digestive system	8	72.7	0.44	32.3

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	الع لائي انائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
72.	*Piper nigrum* L.	Pepper Black	فلفل	Piperaceae	الفلفليات	11	3	Reproductive system	5	45.5	0.33	15.2
73.	*Pistacia paleastina* Boiss.	Palestinian pistachio, Terebinth	بطم	Anacardiaceae	البطمية,المانجية	10	6	Urinary system	6	60.0	0.67	40.0
74.	*Musa sapientum* L.	Banana	موز	Musaceae	الموزية	10	5	Digestive system	4	40.0	0.56	22.2
75.	*Micromeria nervosa* (Desf.)	Thyme	زعتر ناعم	Labiatae (Lamiaceae)	الشفوية	9	5	Respiratory system	5	55.6	0.56	30.9
76.	*Citrullus colocynthis* (L.) Schrader	Colocynth	حنظل	Cucurbitaceae	القرعية	9	4	Digestive system	6	66.7	0.44	29.6
77.	*Hibiscus sabdariffa* L.	Roselle	كركدية	Malvaceae	الخبازية	9	2	Circulatory system	8	88.9	0.22	19.8
78.	*Cicer arietinum* L.	Chick Pea	حمص	Leguminosae (Papilionaceae)	البقولية	8	2	Digestive system	7	87.5	0.22	19.4
79.	*Citrullus lanatus* (Thunb.) Matsun. & Nakai	Watermelon	بطيخ	Cucurbitaceae	القرعية	7	4	Digestive system	3	42.9	0.44	19.0
80.	*Laurus nobilis* L.	Laurel, Sweet bay	غار	Lauraceae	الغارية	7	4	Reproductive system	3	42.9	0.44	19.0
81.	*Cassia senna* L.	Senna	سنمكة	Leguminosae (Papilionaceae)	البقولية	7	2	Digestive system	6	85.7	0.22	19.0
82.	*Rosa centifolia L*	Provence Rose	ورد جوري	Rosaceae	الوردية	7	2	Digestive system	6	85.7	0.22	19.0
83.	*Myrtus communis* L.	Common Myrtle	ريحان	Myrtaceae	الآسية	7	5	Urinary/teeth	2	28.6	0.56	15.9
84.	*Prunus mahaleb* L. *(Cerasus mahaleb)*	Mahaleb Cherry	محلب	Rosaceae	الوردية	7	3	Digestive/ nervous	3	42.9	0.33	14.3
85.	*Corchorus olitorius* L.	Jews Mallow	ملوخية	Tiliaceae	الزيزفونية	7	3	Digestive/circulatory	3	42.9	0.33	14.3
86.	*Daucus carota* L.	Carrot	جزر	Umbelliferae (Apiaceae)	الخيمية	7	2	Cancer/Diabetes	2	28.6	0.22	6.3
87.	*Citrus paradisi* Macfad.	Grapefruit	جريبفروت	Rutaceae	السذابية	6	4	Wieght loss	3	50.0	0.44	22.2
88.	*Sarcopoterium spinosum* (L.) Sp.	Shruppy barnet	نتش	Rosaceae	الوردية	6	2	Diabetes	5	83.3	0.22	18.5
89.	*Lactuca scariola*	Prickly	خس الحمار	Compositae(	المركبة	6	2	Skin, burns, and hair	4	66.7	0.22	14.8

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	الع لائي انائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
	L. (*L. serriola* L.)	lettuce, compass plan		Asteraceae)								
90.	*Alhagi maurorum* Medik.	Alhagi Manna	شرش العاقول	Leguminosae (Papilionaceae)	البقولية	6	2	Urinary system	4	66.7	0.22	14.8
91.	*Vicia faba* L.	Broad bean	فول	Leguminosae (Fabaceae)	البقولية	6	2	Digestive system	4	66.7	0.22	14.8
92.	*Hypericum languinosum* Lam.	Downy St. John's- Wort	عشبة الجرح	Hypericaceae	الهايبركية	6	2	skin, burns, and hair/reproductive	3	50.0	0.22	11.1
93.	*Crocus sativus* L.	Saffron	زعفران	Iridaceae	السوسنية	6	3	Circulatory/ nervous/reproductive	2	33.3	0.33	11.1
94.	*Artemisia herba- alba* Asso	White Wormwood	شيح	Compositae(Asteraceae)	المركبة	5	3	Digestive system	3	60.0	0.33	20.0
95.	*Rhus tripartita* (Ucria)	Syrian sumach	غيلان	Anacardiaceae	البطمية,المانجية	5	3	Digestive system	3	60.0	0.33	20.0
96.	*Boswellia carterii* Birdw.	Olibanum, frankincense tree, Incense	بخور, لبان ذكر	Burseraceae	البخوريات	5	3	Urinary system	3	60.0	0.33	20.0
97.	*Elettaria cardamomum* Maton	Cardamom	هال	Zingiberaceae	الزنجبيلية	5	3	Digestive/reproductive	2	40.0	0.33	13.3
98.	*Carthamus tinctorius* L.	Safflower	عصفر	Compositae(Asteraceae)	المركبة	5	2	Circulatory system	3	60.0	0.22	13.3
99.	*Morus alba* L.	Mulberry	توت	Moraceae	التوتية	5	5	Skin, burns, and hair	1	20.0	0.56	11.1
100.	*Arachis hypogaea* L.	Groundnut	فستق	Leguminosae (Papilionaceae)	البقولية	5	1	Digestive system	5	100.0	0.11	11.1
101.	*Pyrus communis* L.	Pear	اجاص	Rosaceae	الوردية	4	2	Digestive system	4	100.0	0.22	22.2
102.	*Rosmarinus officinalis* L.	Rosemary	اكليل الجبل	Labiatae (Lamiaceae)	الشفوية	4	3	Reproductive system	2	50.0	0.33	16.7
103.	*Phagnalon rupestre* (L.) DC.	African Fleabane, Rock Phagnalon	قديح	Compositae (Asteraceae)	المركبة	4	3	Skin, burns, and hair	2	50.0	0.33	16.7
104.	*Solanum melongena* L.	Egg- plant	باذنجان	Solanaceae	الباذنجانية	4	2	Digestive system	3	75.0	0.22	16.7
105.	*Coriandrum sativum* L.	Coriander	كزبرة	Umbelliferae (Apiaceae)	الخيمية	4	2	Circulatory system	3	75.0	0.22	16.7

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	الع لائي انائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
106.	*Oxalis pes-caprae*	Wood Sorrel	حمصيص	Oxalidaceae	أقصلبيات	4	2	Digestive system/ skin	2	50.0	0.22	11.1
107.	*Varthemia iphionoides* Boiss & Blanche	Common Varthemia	كتيلة/ صفيرة	Compositae(Asteraceae)	المركبة	4	2	Wieght loss/Digestive system	2	50.0	0.22	11.1
108.	*Lepidium sativum* L.	Cress	رشاد	Cruciferae (Brassicaceae)	الصليبية	4	1	Reproductive system	4	100.0	0.11	11.1
109.	*Spinacia oleraceae* L.	Spinach	سبانخ	Convolvulaceae	العلاقية	4	1	Circulatory system	4	100.0	0.11	11.1
110.	*Anthemis palestina* Reuter	Daisy	اقحوان	Compositae(Asteraceae)	المركبة	3	4	Skin, burns, and hair	2	66.7	0.44	29.6
111.	*Abelmoschus esculantus* L.	Okra, Lady's finger	بامية	Malvaceae	الخبازية	3	2	Digestive system	3	100.0	0.22	22.2
112.	*Pinus halepensis* Mill.	Aleppo Pine	صنوبر	Pinaceae	الصنوبرية	3	2	Reproductive system	2	66.7	0.22	14.8
113.	*Curcuma longa* L.	Turmeric	كركم	Zingiberaceae	الزنجبيلية	3	2	Cancer	2	66.7	0.22	14.8
114.	*Opuntia ficus-indica* (L.) Mill.	Prickly- pear	صبر	Cactaceae	الصباريات	3	1	Skin, burns, and hair	3	100.0	0.11	11.1
115.	*Anethum graveolens* L.	Dill	عين جرادة	Umbelliferae (Apiaceae)	الخيمية	3	3	Respiratory /digestive/weight loss	1	33.3	0.33	11.1
116.	*Mellisa officinalis* L.	Lemon Balm	ماليسيا	Labiatae (Lamiaceae)	الشفوية	3	3	Nervous /cancer/tempreture	1	33.3	0.33	11.1

NIMU: No. of informants who mentioned the plant for any medicinal use, NA: No. of ailments treated by species, NIPU: No. of informants who reported the plant for the primary use

Table 3.3 Diversity of medicinal use- categories

Disease	No. of Plants (%)
Digestive System	**97, (83.6%)**
Skin, burns, and hair	**77, (66.4%)**
Reproductive system	**68, (58.6%)**
Circulatory system	**66, (56.9%)**
Nervous system	**56, (48.3%)**
Respiratory system	**42, (36.2%)**
Urinary system	**42, (36.2%)**
Diabetes	**39, (33.6%)**
Rheumatism	**33, (28.4%)**
Teeth inflammation	**28, (24.1%)**
Weight loss	**26, (22.4%)**
Cancer	**23, (19.8%)**
Headache and temperature	**18, (15.5 %)**
Eye diseases	**16, (13.8%)**
Skeletal and muscular system	**12, (10.3%)**
Bites, Stings	**11, (9.5%)**
Food Toxins	**9, (7.7%)**
Scurvy	**7, (6%)**
Ear diseases	**6, (5.1%)**
Another	**5, (4.3%)**

3.3 Socio-economic significance

With respect to sources of utilized medicinal plant in TAPHM in the Qalqilia District, 96% of informants purchased medicinal plants from local market, 43.1% collected plants from nature, and 75.1% cultivated some of the plants (Figure 3.1). The average family annual expenditure on medicinal plants varied considerably as 54.3 % of informants reported to spend about (NIS 100), 41.1 % (NIS 100 – 500), and 4.6% (NIS 500 - 1000).

The findings of the current study showed that families in the study population saved a monthly average of 9 visits to their physicians by relying on herbal treatment for minor health problems that otherwise required medical attention.

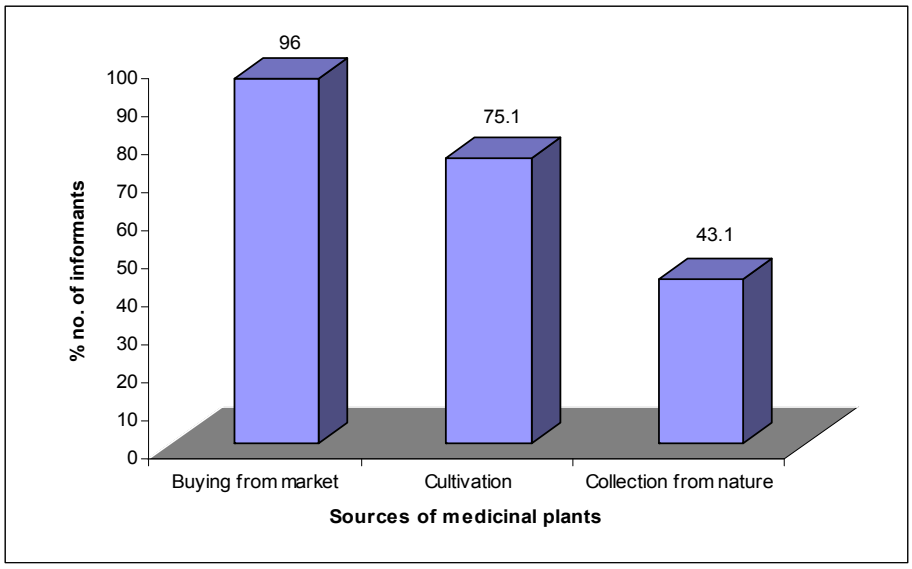


Figure 3.1 Procurement methods of medicinal plants

3.4 Sources of ethnobotanic knowledge

Parents and grandparents seem to be the main source of traditional knowledge (TK) with respect to TAPHM as 88.5% of the study population reported to gain their knowledge from such sources. Other information sources were obtained from textbooks, media and others (Figure 3.2).

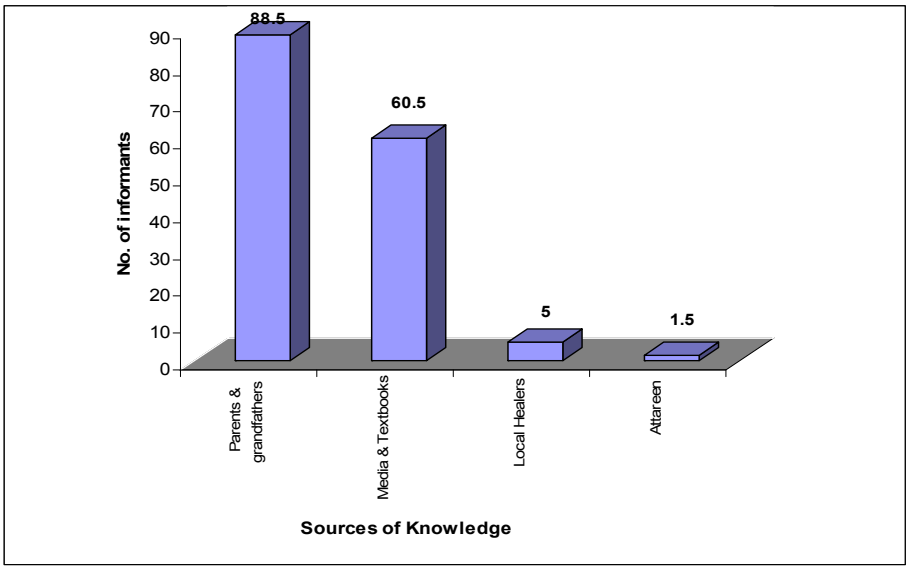


Figure 3.2 Sources folk medical knowledge

3.5 Procurement methods of plant sources

The majority of the used plants in the current study (58 plants, 50%) were reported to be cultivated, whereas 34 plants (29.3%) were wild type (Figure 3.3).

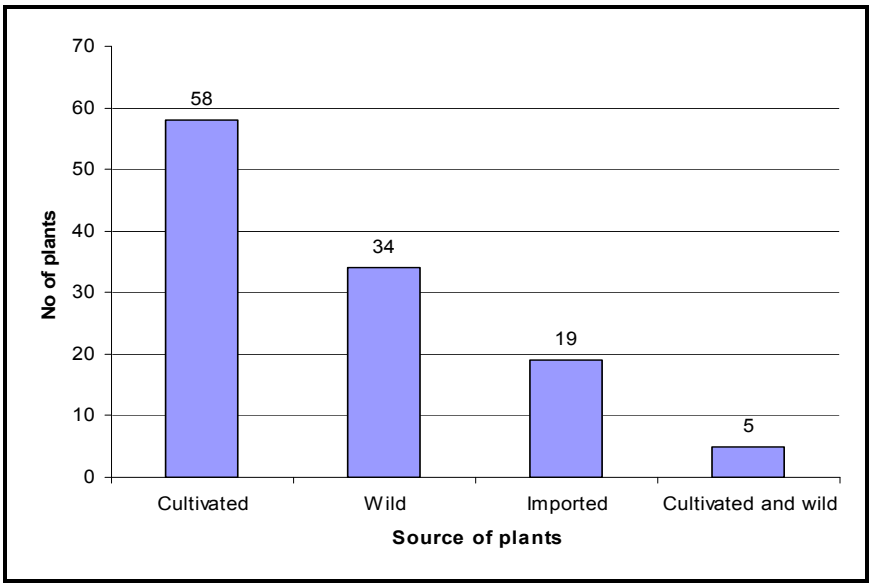


Figure 3. 3 Sources of used plants

3.6 Used parts

The most frequently utilized plant parts were leaves, fruits and seeds which were represented by 38.8 %, 25% and 24.1 %, respectively. Other plant parts were also reported to be used in TAPHM as shown in Figure 3.4.

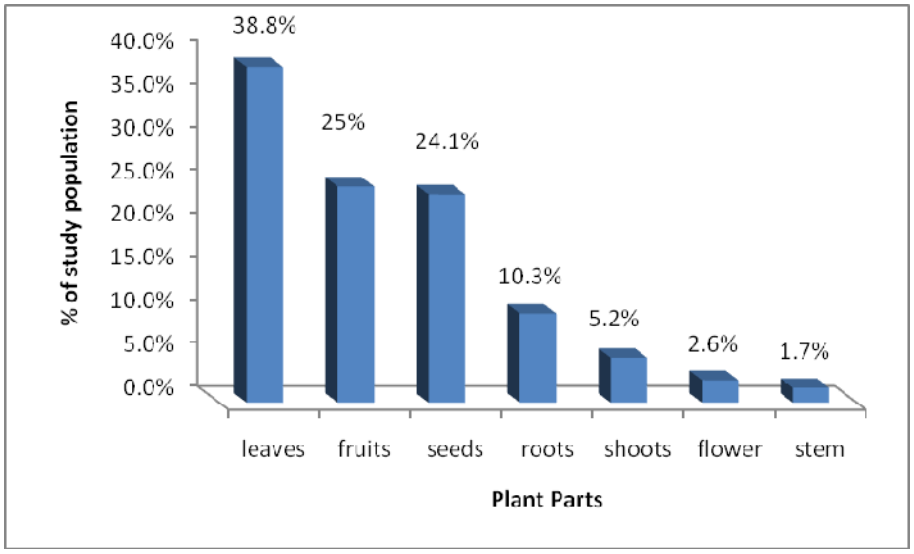


Figure 3. 4 Percentage of used plant parts

3.7 Forms of use and preparation

According to the survey, the informants administer their remedies in various forms including standard decoction prepared by boiling plant parts in hot water, preparation of juice or syrup, presented in roasted form, use as fresh material in salads, inhalation of volatile compound and oils, use as ointment and use as paste. The remedies were administered orally or used externally according to the disease and preparation method (Table 3.4).

3.8 Daily used plants

Data presented in Figure 3.5 represent constantly used plant by the study population. These include: *Salvia fruticosa* Mill. (77%), *Mentha spicata* L. (47.7%), *Majorana syriaca* (L.) Rafin. (24%), *Matricaria aurea* (L.) Sch. Bip. (19.8%), *Anisum vulgare* L. (18.8%), *Micromeria fruticosa* (L.) Druce (15.2%), *Trigonella foenum-graecum* L. (15.2%), *Teucrium polium* L. (3.5%), *Camellia thea* Link. (3.5%) and *Petroselinum sativum* Hoffm. (3.5%).

Table 3.4 Latin, family, English, and local Arabic names, and plant parts, preparation and the diseases treated by local medicinal plant species used in TAPHM in the Qalqilia District

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Abelmoschus esculantus L. (Malvaceae) Okra, Lady's finger	بامية	Fruits	Ulcer, constipation, kidney stones.	Eat fresh fruits as need. Or cooked fruits once weekly at least
Alhagi maurorum Medik. (Leguminosae) Alhagi Manna	شرش العاقول	Roots	Kidney stones Rheumatism and joint pain.	A decoction is prepared from roots and taken orally Making a poultice of roots and flour for 3 hrs.
Allium cepa L. (Liliaceae) Onions	بصل	Bulb	Sexual weakness, hypnotic. Furuncles	Eat uncooked bulb with meals. Grill the bulb shell and put on the furuncle for 4 hrs. and repeat until improvement occurs.
Allium sativum L (Liliaceae) Garlic	ثوم	Cloves	- Heart problems, blood pressure. - Scorpion and bees sting, and furuncle - Digestive system -Ear pain or inflammation. - hemorrhoids	- swallowing 3 cloves approximately, daily, morning. - grinding some cloves and put it on the wound. - grinding a cloves and mixed with boiled potatoes or yogurt, eaten when need. - two tepid drops of garlic oil are put in the affected ear. - grind 4-5 cloves and mixed with honey and to smear on effected area to be treated.
Ammi visnaga (L.) Lam. (Umbelliferae) Tooth Pick	خلة	Flower	Diuretic, kidney stones, prostate problems.	- boil in water and drink daily in the morning.
Amygdalus communis L. (Rosaceae) Almond	لوز	Fruits	Stomach acidity, sterile. Hair loss.	Eat uncooked fruits with honey or without. Oil is applied externally.
Anacardium occidentale L. (Anacardiaceae) Cashew	كاشو	Fruits	Male and female sterility, weak circulatory, Sexual appetite.	Eat it once daily
Juglans regia L. (Juglandaceae) Wallnut	الجوز البلدي	Fruits Leaves	Increase memory. Mycosis.	Eat the fruits daily whenever can. Grind the leaves and put on the effected areas, twice daily until improvement occurs.
Anethum graveolens L. (Umbelliferae) Dill	عين جرادة	Seeds	Influenza, stomach acidity	A decoction is prepared and taken orally.
Anisum vulgare L. (Umbelliferae) Anise	ينسون	Seeds	Constipation, indigestion, intestinal pain, nervous calming Toothache	A decoction is prepared and taken tow times/ day until improvement occurs. To rinse the mouth with a decoction of plant.
Anthemis palestina Reuter (Compositae) Chamomile.	أقحوان فلسطيني	Leaves and flowers.	Muscle contraction, joint pain.	Making a poultice of a decoction of plants, and message.

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Arachis hypogaea L. (Leguminosae) Groundnut	فستق	Seeds	Stomach acidity	Eat uncooked seeds as need
Artemisia inculata Delile *(A. herba- alba* Asso*)* (Compositae)White Wormwood	شيح	Foliage	Rheumatism, arthritis Nerve system, heart diseases, sexual weakness, and diabetes	500g of leaves are boiled in 2 l water and added to bath. Patient is immersed in the bath for 30 min. An infusion of foliage is prepared and taken, tow times/ day
Arum palestinun Sibth & Sm (Araceae) Spotted arum	لوف	Leaves	Cancer	Eat the leaves cooked or uncooked whenever can.
Boswellia carterii Birdw.(Burseraceae) Olibanum	بخور, لبان ذكر	bark	Kidney stones Against ' evil eye'	A decoction is prepared with little mahaleb, and drink a cup in empty stomach. Burn the bark in the house.
Brassica oleracea L. (Cruciferae) Wild cabbage	ملفوف	Leaves	Rheumatism, arthritis. Weight loss, ulcer, cancer, Iron deficiency anemia	Put boiled leaves on effected areas 4-5 hrs for a week approximately. Eat fresh leaves as a salad daily.
Brassica oleracea var. botrytis L. (Cruciferae) Cauliflower	قرنبيط/ زهرة	Whole plant.	Stomach acidity, Iron deficiency anemia.	Eating it cooked or uncooked once daily at least.
Camellia thea Link. (Theaceae) Tea	شاي	Leaves	- Eye inflammation.	- making poultice from boiled plant material.
Capsicum annuum L (Solanaceae) Sweet peppers	الفليفلة, فلفل حلو	Fruits	Iron deficiency anemia	Eat fresh fruits with meal.
Carum carvi L. (Umbelliferae) Caraway	كراوية	Seeds	Diuretic, urinary tract infection, female sterility, bed wetting, urinary retention, milk diuretic.	A decoction is prepared and drinks orally, twice daily.
Cassia senna L. (Leguminosae) Senna	سنمكة	Leaves	Constipation, weight loss.	Drink a cup of leaves decoction from times to other.
Ceratonia siliqua L. (Leguminosae) Carob	خروب	Fruits	- Mouth and gum inflammation - Jaundice, iron deficiency anemia, coughing, digestive system, and diarrhea.	- Smear the mouth and gum with fruits syrup three times/ day as needed. - One cup of fruits syrup is taken internally, 2-3 times/ day as needed.
Cicer arietinum L. (Leguminoseae) Chick pea	حمص	Seeds	Stomach acidity	Eat uncooked seeds as need.
Cinnamomum zeylanicum Blume. (Lauraceae) Tree cinnamon H	قرفة	Stem layer or bark	Abortion, birth facilitation, period pain	A decoction is prepared and put little honey and drink.

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Citrullus colocynthis (L.) Schrader (Cucurbitaceae) Colocynth	حنظل	Fruits	Rheumatism and joints pain Jaundice Hemorrhoids.	Cutting the fruit in the middle and put around the leg heel for all night. Spot a one drop of fruits juice in nostril. Smearing the infection area with internal pulp.
Citrullus lanatus (Thunb.) Matsun. & Nakai (Cucurbitaceae) Watermelon	بطيخ	Fruits	Stomach acidity, intestinal gas.	Eat the fruits twice daily in its season.
Citrus limon (L.) (Rutaceae) Lime	ليمون	Fruits	Diarrhea Influenza, headache, fever. Toothache, and bleeding	Squeeze half lemon with spoon of coffee, mixed and eat once only. Squeeze a lemon in a cup of water with little sugar, three times/ day. And smear juice of lemon on the forehead. Put a small piece on molar with little salt, until improvement occurs and stop bleeding.
Citrus paradisi Macfad. (Rutaceae) Grapefruit	جريب فروت	Fruits	Weight loss, diabetes, weak circulatory.	Drink a cup juice of fruits twice daily. Or eat fresh fruits.
Citrus sinensis (L.) Osbeck (Rutaceae) Orange- tree sweet	برتقال	Fruits	Influenza, indigestion, nervous calming.	Drink orange juice daily, or eat two fresh oranges daily in its season.
Coffea arabica L. (Rubiaceae) Coffee	قهوة	Grains	Nervous stimulation, indigestion Stop bleeding	Drink a cup of decoction of roasted fruits. Put a little of fruits powder on wound to stop bleeding.
Corchorus olitorius L.(Tiliaceae) Jews mallow	ملوخية	Leaves	Constipation, increase blood iron, and memory.	Eat cooked leaves once weekly.
Coriandrum sativum L. (Umbelliferae) Coriander	كزبرة	Seeds and leaves	Hemorrhoids Iron deficiency anemia, high blood pressure.	Making a poultice from a decoction of leaves or seeds. Eat the fresh leaves as a salad with meal.
Corylus avellana L. (Corylaceae) Hazelnut	بندق	Seeds	Impotence	Eat the seeds once daily.
Crataegus aronia (L.) (Rosaceae) Hawthorn	زعرور	leaves	- Heart diseases, blood pressure, diabetes, weight loss, cholesterol, urinary system.	A decoction of leaves prepared and drinks orally, twice daily.
Crocus sativus L. (Iridaceae) Saffron	زعفران	Flowers	Arteriosclerosis, increase memory.	Drink a cup of flowers decoction.
Cucumis sativus L. (Cucurbitaceae) Cucumber	خيار	Fruits	Stomach acidity, constipation.	Eat two of fruits in empty stomach as need.
Cucurbita maxima L. (Cucurbitaceae) Pumpkin	قرع	Seeds	Helminthes, sexual appetite	Eat uncooked seeds in empty stomach.
Cuminum cyminum L.(Umbelliferae) Cumin	كمون	Seeds	Intestinal gas, birth facilitation	Spoon of grinded seeds in cup of water and drink.

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Cupressus sempervirens L (Cupressaceae) Cypress	سرو	Fruits	Toothache	- To rinse the mouth with a decoction of plant.
Daucus carota L. (Umbelliferae) Carrot	جزر	Roots	Cancer, diabetes, sexual appetite, clear vision.	Eat 3 uncooked roots daily.
Dianthus strictus Banks & Sol. (Caryophyllaceae) Wild Pink	قرنفل	Fruits	Toothache	- put a stick on effected tooth and press. - To rinse the mouth with a decoction of plant.
Inula viscosa (L.) (Compositae) Inula	طيون	Leaves	Toothache	Chewing the leaves to calm the pain
Ecballium elaterium (L.) A. Richard (Cucurbitaceae) Squirting cucumber	قثاء الحمار (فقوس حمار)	Fruits	Liver diseases, jaundice, and sinusitis.	One drop of juice from the fruit is inhaled in each nostril.
Elettaria cardamomum Maton (Zingiberaceae) Cardamom	هال	Seeds	Ulcer, prevent pregnant	Swallowing the seeds as need.
Eruca sativa Miller (Cruciferae) Garden rocket	الجرجير	Leaves	Sexual weakness, sexual appetite Skin diseases, burns	- Fresh leaves are eaten as salad as you can. - Grind the leaves and put on effected areas as a poultice.
Eucalyptus camaldulensis Dehn. (Myrtaceae) Red River Gum	كينا	Leaves	Reduction of temperature	A decoction is prepared and drinks.
Ficus carica L. (Moraceae) Fig	تين	- stem - Fruit - Leaf	- Warts - Constipation - Kidney stones, respiratory system, asthma, and cholesterol	Sap secreted from stem is applied on affected areas and repeated daily until the condition improves Fruits are eaten Boil and drink a cup twice daily
Ficus sycomorus L.(Moraceae) Sycamore	جميز	Stem	Skin diseases	Stem milky sap is used externally until the condition improves.
Foeniculum vulgare Miller (Umbelliferae) Fennel	شومر	Seeds	Ulcer, intestinal gas, reproductive system, toothache	A decoction is prepared and drink 1-3 cups daily To rinse the mouth with a decoction of plant
Hibiscus sabdariffa L. (Malvaceae) Roselle	كركدية	Leaves	High blood pressure.	An infusion is prepared and drinks as need.
Hordeum vulgare L. (Gramineae) Barley	شعير	Seeds	Kidney stones and pain, urinary tract inflammation Burns	A decoction is prepared and drink cup in empty stomach morning. Grind roasted seeds and spray on burns directly.
Hypericum languinosum Lam. (Hypericaceae) Downy St. John's Wort	عشبه الجرح	Leaves	Wounds and bleeding.	Grinding the leaves and put on wounds.
Lactuca sativa L. (Compositae) Lettuce	خس	Leaves	Stomach acidity, constipation, nervous calm.	Eat as raw salad.

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Lactuca scariola L. (*L. serriola* L.) (Compositae)Prickly lettuce	خس الحمار/ خس بري	Foliage	Warts, hemorrhoids, burns.	Grinding the leaves and put on affected areas as a poultice.
Laurus nobilis L. (Lauraceae) Laurel	غار	Leaves	Contraception, prevent the period finally.	Drink a cup of a decoction of leaves for one week.
Lawsonia inermis L. (Lythraceae) Henna	حناء	Leaves	Eczema, and white hair	Grind a dried leaves and mixed with little water and put on wanted areas.
Lens culinaris Medikus (Leguminosae) Lentils	عدس	Seeds	Iron deficiency anemia Stomach acidity	Eat seeds soup daily for one month. Eat uncooked seeds as need.
Lepidium sativum L. (Cruciferae) Cress	رشاد	leaves	Sexual appetite.	An infusion is prepared and taken orally.
Lupinus albus L. (Leguminosae) White Lupines	ترمس مر	Seeds	- Weight loss, diabetes, blood pressure, increase memory, kidney stones. - Contraception - Abortion	- Eat 5 seeds daily morning. - Swallowing 4 seeds after birth directly. - Drink a decoction of seeds in first pregnancy stage
Lycopersicon esculentum Mill. (Solanaceae) Tomato	بندورة	Fruits	Snake, scorpion, bees stings, burns Circulation, blood pressure	Cut one and rub of affected area. Eat uncooked fruits daily to increase iron percentage, and with salt in low pressure.
Majorana syriaca (L.) Rafin. (Labiatae) Wild thyme	زعتر	Leaves	-Influenza, cough -Nervous system, memory -Toothache, inflammation -Arthritis - Hair loss	- An infusion is made and taken a cup daily until improvement occurs. - dry the leaves and grind and eat with olive oil. - To rinse the mouth with a decoction of plant. - make a bath with a decoction of leaves. - wash the hair with a decoction of leaves.
Malva neglecta Wall.. (Malvaceae) Common mallow	خبيزة	Foliage	Constipation, cancer. Reproductive system inflammation	Eat fresh leaves twice weekly. Make poultice of leaves.
Matricaria aurea (L.) Sch. Bip. (Compositae) Golden cotula	بابونج	Leaves, flowers.	- Respiratory diseases, intestinal pain, toothache, nerve system, urinary system - Eye inflammation and eczema	- A decoction of plants material is prepared and taken orally twice daily. Decoction is then used as steam bath. - making poultice from boiled plant material.
Mellisa officinalis L. (Labiatae) Lemon balm	ماليسيا	Leaves	Nervous calming	Drink a cup of a decoction of leaves with little tea.

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Mentha spicata L. (Labiatae) Peppermint	نعنع	Leaves	Nervous calming, urinary tract inflammation, intestinal pain and gas, period pain.	An infusion is prepared and drink cup as need.
Micromeria fruticosa (L.) Druce (Labiatae) Thyme	زعتر بلاط	Foliage	Asthma, stomach, intestinal pain and inflammation, cough. Toothache, and gum inflammation.	An infusion is prepared from plant material in boiling water; 1-3 cups are taken daily until improvement occurs. To rinse the mouth with a decoction of plant.
Morus alba L. (Moraceae) Mulberry	توت	Fruits Leaves	Weak appetite, Mycosis	Eat the fruits daily. Grinding the leaves and put on infection areas.
Musa sapientum L. (Musaceae) Banana	موز	Fruits	Ulcer, stomach acidity	Eat one daily.
Myrtus communis L. (Myrtaceae) Common Myrtle	ريحان, آس	Leaves	Toothache Excess perspiration.	Chewing the leaves to calm the pain. Washing with a decoction of leaves.
Nigella ciliaris DC. (Ranunculaceae) Nigella	حبة البركة/ قزحة	Seeds	Heart diseases, blood pressure, and sexual weakness Muscle contraction, bone pain.	- grinding the seeds and mix with honey and eat twice daily. - To smear of oil on effected area.
Olea europaea L. (Oleaceae) Olives	زيتون	Fruits and leaves	- Coughing. - Diabetes, high blood pressure. - Stones in kidney. - Ear inflammation. - Hair loss, muscle contractions. - Stop bleeding - Poisoning	Oil is rubbed on the chest for coughing. Leaf decoction are taken orally Drink cup of oil morning until improvements occur. Oil is applied externally to affected area with garlic. To smear oil externally to affected areas as needed with massage. Poultice of oil put on wound to stop bleeding. Drink a cup of oil when infection occurs.
Oxalis pes-caprae (Oxalidaceae) Wood Sorrel	حمصيص	Roots	Skin diseases, furuncle, and hemorrhoids.	Grinding the roots and put on infection area twice daily.
Paronychia argentea Lam.(Caryophyllaceae) Silvery Whitlow- Wart	رجل الحمام	Leaf and flower	Stones in kidney, urinary system, sexual weakness.	A decoction is prepared and taken internally, three times/ day.
Petroselinum sativum Hoffm. (Umbelliferae) Parsley	بقدونس	Leaves	Urinary system, inflammation, kidney stones, diuretic, intestinal gas and period regulator. Arthritis.	- drink a cup of an infusion of leaves daily. - eat a fresh leaves as a salad. - bathtub mad by a decoction of the plants

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Phagnalon rupestre (L.) DC. (Comositae) African fleabane	قديح	Leaves	Warts Indigestion, depression	Burning the leaves and put directly on warts. Drink a cup of leaves decoction.
Phoenix dactylifera L. (Palmae) Date palm	نخيل / تمر	Fruits	Constipation, birth facilitation, increase memory	Eat 3-4 of fruits daily.
Pinus halepensis Mill. (Pinaceae) Aleppo pine	صنوبر	Fruits	Sexual appetite	Eat uncooked fruits daily
Piper nigrum L. (Piperaceae) Pepper	فلفل	Fruits	Increase the blood iron, sexual appetite.	Eat fresh green fruits with meal.
Pistacia lentiscus L. (Anacardiaceae) Lentisk, Mastic tree	سريس	Leaves	Ulcer, warts, jaundice.	An infusion is prepared and taken orally, 3 times/day.
Pistacia paleastina Boiss.(Anacadiaceae) Palestinian pistachio	بطم	Leaves	Diabetes, stones, urinary tract inflammation, reproductive system.	A decoction is prepared and drink cup in empty stomach morning.
Portulaca oleracea L.(Portulacaceae) Purslane	رجلة	Foliage	Eczema, stings. Iron deficiency anemia	Grind the plants and put on effected areas. Eat fresh leaves with meal.
Prunus mahaleb L.(Rosaceae) Mahaleb cherry	محلب	Seeds	Intestinal gas, kidney stones.	A decoction is prepared with little olibanum and drink a cup daily.
Psidium guajava L. (Myrtaceae) Guava	جوافا	Leaves	Cough	A decoction is prepared and taken two times/ day until improvement occurs.
Punica granatum L. (Punicaceae) Pomegranate	رمان	Fruits shell	Weight loss, ulcer, urinary tract inflammation, stomach acidity, kidney stones. Burns	Drying the shells then crushed it and make an infusion and taken orally. Spread the shell powder on burnt areas.
Pyrus communis L. (Rosaceae) Pear	أجاص	Fruits	Constipation, kidney stones.	Eat two fresh fruits daily.
Pyrus malus L. (Rosaceae) Apple	تفاح	Fruits	- Weight loss. - Toothache. - Fever. - Varicosis,	- Small spoon of apple vinegar mixed in a cup of water and drink in empty stomach morning. - To rinse the mouth with diluted apple vinegar for 1 min. - smear forehead with diluted vinegar to reduce a temperature. - Make a massage with vinegar on affected areas twice weekly.
Quercus calliprinos Oecne (Fagaceae) Kermes oak	البلوط/ السنديان	Fruits and bark	Stomach and intestinal pain, bed wetting.	Fruits and bark are decocted and taken internally, two times /day.

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Raphanus sativus L. (Cruciferae) Radish	فجل	Roots	Ear inflammation Intestinal gas, increase blood iron.	Grill the radish and squeeze in the effected ear. Eat fresh radish with meal.
Rhus tripartita (Ucria) (Anacardiaceae) Syrian sumach	غيلان	Roots	Men sterility Sciatica.	Drink a cup of a root decoction daily. Cutting the root tree in one hit.
Ricinus communis L. (Euphorbiaceae) Castor beans	خروع	Seeds	- Hemorrhoids, and furuncle . - Helminthes, laxative. - Hair loss and skin diseases. - Contraception	Make poultices of oil from seeds on affected area tow times/ day. Drink cup of oil in empty stomach once/ daily. Oil is applied externally to affected areas and massaged. 3 of seeds are drinking after birth directly, contraceptive to 3 years.
Rosa centifolia L (Rosaceae) Provence rose	ورد جوري	Flowers	White hair Respiratory and digestive system.	Mix a decoction of flowers with henna and put on hair for 6 hrs. Drink cup of an infusion of flowers as need.
Rosmarinus officinalis L. (Labiatae) Rosemary	إكليل الجبل/ حصالبان	Leaves	Increase memory, weight loss, kidney disease, skin irritation	An infusion is prepared and taken orally, 2-3 times/ day until the condition improves.
Ruta chalepensis L.(Rutaceae) Rue	سذاب/ الفيجن	Foliage	Hemorrhoids Against ' evil eye'	Poultice of a decoction on the affected areas before sleeping. Put the plants in the house, or planted it in the garden.
Salvadora persica L.(Salvadoraceae) Persian savadora	سواك	Roots	Mouth sterilization, tooth whitening	Rubbing the teeth with the root twice daily at least.
Salvia fruticosa Mill.(Labiatae*)* Sage	مريمية	Leaf	- Stomachache, intestinal gas, and period pain. - Toothache - Wound bleeding - Diabetes	- An infusion is prepared from 50 g in 1 l water and taken orally, 1-2 times /day. - make a decoction of leaves and some salt, to rinse the mouth. Or chewing the green leaves. - grinding the leaves and put it on the wound to stop bleeding. - A decoction of 100g plants material in 1 l water is prepared and taken orally, one daily.
Sarcopoterium spinosum (L.) Sp. (Rosaceae) Shruppy barnet	نتش	Leaves	Diabetes	An infusion is prepared and taken orally.
Sesamum indicum L. (Pedaliaceae) Sesame	سمسم	Seeds (oil)	- Respiratory system, burns. - Digestive system	-Smear the oil on back and chest, and eat small spoon of oil, and poultice on burned area. - Smear the mouth with tahini for gum inflammation.
Solanum melongena L. (Solanaceae) Egg- plant	باذنجان	Fruits	Hemorrhoids	Burning the fruits completely, and smear on affected areas.

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Solanum nigrum L.(Solanaceae) Black nightshade	سموة	Foliage	Skin diseases, furuncle, bees and scorpion sting.	Grind fresh leaves and put on affected area.
Solanum tuberosum L. (Solanaceae) Potato	البطاطا, البطاطس	Tubers	Diarrhea Burns	Grinding a boiled plant and mixed with some salt and garlic. Cut the stem and put on infection area.
Teucrium polium L (Labiatae) Cat thyme	جعدة	Foliage	- Stomachache, colic, Diabetes, weight loss.	- A decoction of 50g plants material in 1 l water is prepared and taken orally, once daily.
Trigonella foenum- graecum L. (Leguminosae) Fenugreek seed	حلبة	Seeds	Urinary tract inflammation, kidney stones, diabetes, increase milk in breast, sexual weakness, stomach and intestinal pain, and iron deficiency anemia.	A decoction is prepared and taken orally, three times/ day until improvement occurs.
Triticum aestivum L. (Gramineae) Wheat	قمح/ نخالة	Crushed grains, bran	Weight loss, diabetes, cancer. Burns Broken bones	Eat bread made from grains and bran. Grind the roasted grains and spread on burn for 3 days. Mixing the bran with eggs and soap, and make a splint.
Urginea maritima (L.) Baker (Liliaceae) Squill	غوصلان	Bulbs	Skin diseases and inflammation.	Smear the infection area with internal pulp twice daily, until improvement occurs.
Urtica pilulifera L (Urticaceae) Roman Nettle	قريص	Leaves	Heart diseases. Rheumatism, arthritis, inflammation. Burns, and hair loss	A decoction is prepared and taken orally daily. Relax in the bath of a decoction of plants material with leaves of common mallow. Making poultice from boiled plant material.
Varthemia iphionoides Boiss & Blanche *(Chiliadenus iphionoides)* (Compositae) Common varthemia	اكتيلا/ كتيلة / صفيرة	Foliage	Weight loss, stomach and intestinal inflammation.	An infusion is prepared and taken orally twice daily.
Vicia faba L. (Leguminosae) Broad bean	فول	Fruits	Diarrhea, amoeba, urinary retention.	Eat pods cooked or uncooked once daily for two days.
Vitis vinifera L.(Vitaceae) Grape	عنب	Fruits Leaves	Hair loss and weakness. Jaundice, constipation, calming. Furuncles	Washing the hair with grape water. Eat fresh fruits in its season, or drink fruits juice daily. Put a leaves on furuncle all night for 3 days.

Latin (family), English common names	Local Arabic name	Parts used	Medicinal use	Mode of preparation and use
Zea mays L. (Gramineae) corn, zea	الذرة الصفراء	Kernel, and fibers	Helminthes Urinary system, kidney stones, blood pressure, joint inflammation, and weight loss. Diarrhea	Eat uncooked kernel once daily. A standard decoction of kernels and fibers is prepared and taken orally, 3 times/ day until improvement occurs. Mix one spoon of starch with half lemon and eat as need.
Zingiber officinale Roscoe (Zingiberaceae) Ginger	زنجبيل	Roots	- Inflammation, weight loss. - Varicose	Drink a cup of a decoction daily Smear the infection area with a decoction, and drink a cup from it.

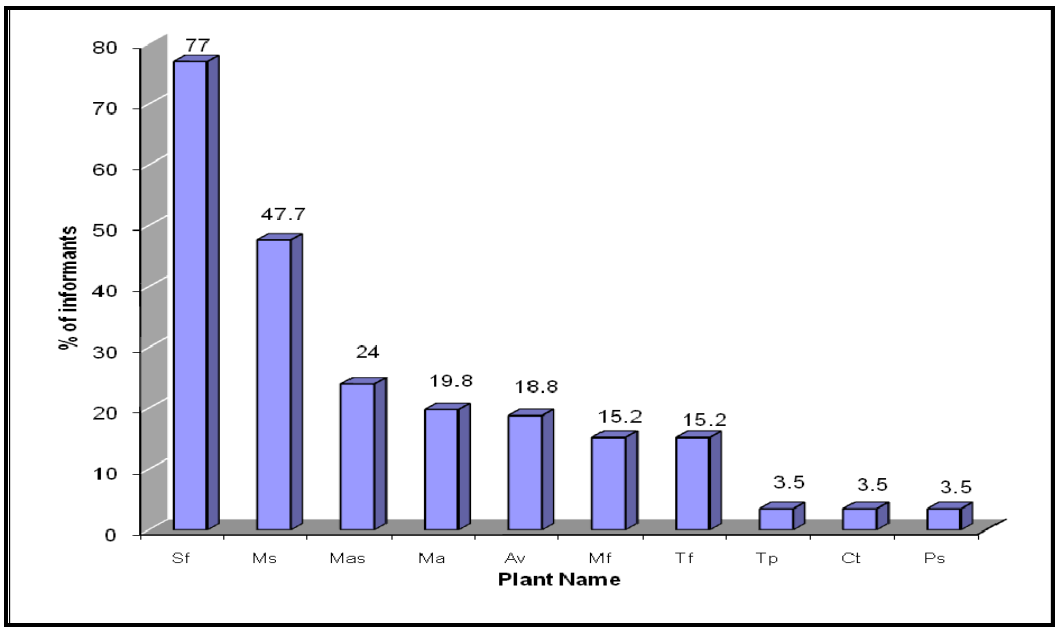


Figure 3.5 Daily used plants by the study population
Sf: *Salvia fruticosa*; Ms: *Mentha spicata*; Mas: *Majorana syriaca*; Ma: *Matricaria aurea*; Av: *Anisum vulgare*; Mf: *Micromeria fruticosa*; Tf: *Trigonella foenum-graecum*; Tp: *Teucrium polium*; Ct: *Camellia thea*; Ps: *Petroselinum sativum*.

3.9 Storage of medicinal plants

The results showed that 95 % of study population dried fresh material by exposing to air at room temperature. The dried form then stored in suitable containers till use. The remaining population did not rely on any home stored material.

3.10 Herbal medicine vs. synthetic drugs

The findings of the current study showed that 94% of the study population preferr the use of medicinal plants more than synthetic drugs. The reason behind that was attributed to the fact that medicinal plants were safer (78.7 %), more effective (40.1 %) and less expensive (18.8 %).

3.11 Non-botanical medical materials

Data presented in Table 3.5 showed the most commonly used non-botanical medical material by the study population. Fifteen animal, mineral, organic and inorganic, fungi and other chemical materials were still in used in the TAPHM for treatment of human ailments.

Table 3.5 Non-herbal materials used in TAPHM

No.	popular name	الإسم العربي	No. of informants who reported use of species	No. of ailments treated by species	primary use	NO. of informants	Source
1	Honey	عسل	144	12	Skin, burns, and hair	72	animal
2	Yogurt	لبن	123	7	circulatory system	63	animal
3	Milk	حليب	116	13	food toxins	70	animal
4	Egg	بيض	47	7	Skeletal and muscular system	22	animal
5	Camel fat	شحم الجمل	2	1	Digestive system	2	animal
6	Ghee	سمنة	10	3	Bites, Stings	7	animal
7	Engine greese	شحم المحركات	5	2	Digestive system	4	chemical
8	Yeast	خميرة	13	4	Reproductive system	8	Fungus
9	Sodium bicarbonate	صودا (كربون)	25	4	Digestive system	10	Mineral (rocks)
10	Salt (NaCl)	ملح	90	6	circulatory system	72	Mineral (rocks)
11	Clay	طين	12	2	Bites, Stings	12	Mineral (rocks)
12	Sulfur	كبريت	1	1	Skin, burns, and hair	1	Mineral (rocks)
13	Ammonium Alum $Al(NH_4)(SO_4)_2.12H_2O$	الشبة	7	4	digestive/ skin/ reproductive system	2	Mineral (rocks)
14	Gasoline	كاز	2	2	digestive/ skin	1	Organic
15	Soap (local)	صابون نابلسي (محلي)	23	5	Skeletal and muscular system	15	plant (Olive oil) + Mineral (NaOH)

3.12 Healing potential of medicinal plants based on calculated indices

Medicinal plants were considered to have healing potential if reported by three or more informants. Indices on fidelity levels (FLs), relative popularity level (RPL), and rank-order priority (ROP) were calculated. Plants were classified in two groups based on their RPL values: 'popular' (RPL =1) or 'less popular' (RPL <1).

3.12.1 Fidelity level values (FL)

Based on their fidelity level values (FL), the following plants were found to be the most frequently utilized: *Dianthus strictus* Banks & Sol., *Ficus sycomorus* L., *Pyrus communis* L., *Abelmoschus esculantus* L., *Oryza sativa* L., *Corylus avellana* L., *Cupressus sempervirens* L., *Salvadora persica* L. , *Arachis hypogaea* L. , *Lepidium sativum* L. , *Spinacia oleraceae* L. , and *Opuntia ficus- indica* (L.) Mill. (Table 3.6). All of the above mentioned plants were with an FL value of 100. Other plants have an FL value less than 100 as shown in (Table 3.6).

3.12.2 Relative popularity level values (RPL)

Based on their RPL values, the following plants were considered to be popular plants: *Allium cepa* L., *Allium sativum* L., *Anisum vulgare* L., *Camellia thea* Link., *Ceratonia siliqua* L., *Citrus limon* (L.) Burm. Fil, *Coffea arabica* L., *Majorana syriaca* (L.) Rafin., *Matricaria aurea* (L.) Sch. Bip., *Mentha spicata* L., *Olea europaea* L., *Petroselinum sativum* Hoffm., *Ricinus communis* L., *Salvia fruticosa* Mill., *Sesamum indicum* L., and *Trigonella foenum- graecum* L. (Table 3.6). The remaining plants were considered less popular based on their RPL values.

3.12. 3 Rank-order priority (ROP) values

Based on ROP values, the following medicinal plants were considered to be with the most effective healing properties: *Ceratonia siliqua* L. (92.9), *Sesamum indicum* L. (92), *Salvia fruticosa* Mill. (86.2), *Cucumis sativus* L. (85.6), *Camellia thea* Link. (81.6), *Anisum vulgare* L. (79.6), *Lycopersicon esculentum* Mill. (75.7), *Teucrium polium* L. (75.2), *Crataegus aronia* (L.) Bosc. ex DC. (74.3), *Allium cepa* L. (73.8), *Majorana syriaca* (L.) Rafin. (73.3), and *Coffea arabica* L. (70.3) (Table 3.6; Figure 3.6).

3.12.3.1 Healing effectiveness among study plants

Based on primary use and ROP values, data presented in Table 3.7 show the 2 most important plants with effective healing properties for certain disease problems reported in Qalqilia district. Among these plants (*Ceratonia siliqua* L, *Sesamum indicum* L.), (*Allium cepa* L., *Lawsonia inermis* L.), (*Trigonella foenum- graecum* L., *Petroselinum sativum* Hoffm.) were reported to be most effective for healing problems related to digestive, skin, respiratory system, respectively (Figure 3.7). Effective healing properties for nervous, respiratory, circulatory systems in addition to cancer and diabetic diseases were also reported by different plant.

Table 3.6 Distribution of plant by ROP

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
1.	*Ceratonia siliqua* L.	Carob	خروب	Leguminosae (Papilionaceae)	البقولية	127	7	Digestive system	118	92.9	1	92.9
2.	*Sesamum indicum* L.	Sesame	سمسم	Pedaliaceae	السمسمية	112	8	Digestive system	103	92.0	1	92.0
3.	*Cucumis sativus* L.	Cucumber	خيار	Cucurbitaceae	القرعية	95	9	Digestive system	84	88.4	0.98	86.5
4.	*Salvia fruticosa* Mill.	White sage, Common sage, garden sage	مريمية	Labiatae	الشفوية	196	14	Digestive system	169	86.2	1	86.2
5.	*Camellia thea* Link.	Tea	شاي	Theaceae	عائلة الشاي	152	10	Eye diseases	124	81.6	1	81.6
6.	*Anisum vulgare* L.	Anise	ينسون	Umbelliferae (Apiaceae)	الخيمية	152	12	Digestive system	121	79.6	1	79.6
7.	*Crataegus aronia* (L.) Bosc. ex DC.	Spiny Hawthorn	زعرور	Rosaceae	الوردية	55	8	Circulatory system	48	87.3	0.89	77.6
8.	*Lycopersicon esculentum* Mill.	Tomato	بندورة	Solanaceae	الباذنجانية	97	10	Bites, Stings	75	77.3	0.99	76.5
9.	*Allium cepa* L.	Onions	بصل	Liliaceae	الزنبقية	122	11	Skin, burns, and hair	90	73.8	1	73.8
10.	*Majorana syriaca* (L.) Rafin.	Wild thyme, mother of thyme	زعتر	Labiatae	الشفوية	135	12	Respiratory system	99	73.3	1	73.3
11.	*Coffea arabica* L.	Coffee	قهوة	Rubiaceae	الروبية	138	7	Nervous system	97	70.3	1	70.3
12.	*Citrus limon* (L.) Burm. Fil	Lime, limon tree	ليمون	Rutaceae	السذابية	171	12	Respiratory system	113	66.1	1	66.1
13.	*Lawsonia inermis* L.	Henna	حناء	Lythraceae	الحنائيات	70	6	Skin, burns, and hair	66	94.3	0.67	62.9
14.	*Matricaria aurea* (L.) Sch. Bip.	Golden cotula	بابونج	Compositae(Asteraceae)	المركبة	136	13	Respiratory system	85	62.5	1	62.5
15.	*Trigonella foenum- graecum* L.	Fenugreek seed	حلبة	Leguminosae (Papilionaceae)	البقولية	120	10	Reproductive system	74	61.7	1	61.7
16.	*Psidium guajava* L.	Guava	جوافة	Myrtaceae	الآسية	66	6	Respiratory system	61	92.4	0.67	61.6
17.	*Cinnamomum zeylanicum* Blume.	Tree Cinnamon	قرفة	Lauraceae	الغارية	76	6	Reproductive system	70	92.1	0.67	61.4
18.	*Quercus calliprinos* Oecne	Kermes oak	بلوط/ سنديان	Fagaceae	البلوطية	19	8	Digestive system	13	68.4	0.89	60.8
19.	*Petroselinum sativum* Hoffm.	Parsley	بقدونس	Umbelliferae (Apiaceae)	الخيمية	124	11	Reproductive/urinary	75	60.5	1	60.5

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
20.	*Ricinus communis* L.	Castor beans	خروع	Euphorbiaceae	السوسبية	100	6	Digestive system	60	60.0	1	60.0
21.	*Olea europaea* L.	Olives	زيتون	Oleaceae	الزيتونية	197	17	Ear diseases	112	56.9	1	56.9
22.	*Teucrium polium* L.	Cat thyme	جعدة	Labiatae	الشفوية	56	9	Digestive system	44	78.6	0.71	55.9
23.	*Mentha spicata* L.	Peppermint	نعنع	Labiatae	الشفوية	139	11	Digestive system	77	55.4	1	55.4
24.	*Allium sativum* L.	Garlic	ثوم	Liliaceae	الزنبقية	148	18	Digestive system	80	54.1	1	54.1
25.	*Lens culinaris* Medikus	Lentils	عدس	Leguminosae (Papilionaceae)	البقولية	64	5	Digestive system	59	92.2	0.56	51.2
26.	*Foeniculum vulgare* Miller	Fennel	شومر	Umbelliferae (Apiaceae)	الخيمية	20	8	Digestive system	11	55.0	0.89	48.9
27.	*Ruta chalepensis* L.	Rue	سذاب/فيجن	Rutaceae	السذابية	15	6	Digestive system	11	73.3	0.67	48.9
28.	*Eucalyptus camaldulensis* Dehn.	Red River Gum	كينا	Myrtaceae	الآسية	16	6	Headache and tempreture	11	68.8	0.67	45.8
29.	*Dianthus strictus* Banks & Sol.	Wild Pink	قرنفل	Caryophyllaceae	القرنفلية	90	4	Teeth inflammation	90	100.0	0.44	44.4
30.	*Eruca sativa* Miller	Garden rocket	جرجير	Cruciferae (Brassicaceae)	الصليبية	30	5	Reproductive system	24	80.0	0.56	44.4
31.	*Malva neglecta* Wall.	Common mallow	خبيزة	Malvaceae	الخبازية	16	8	Reproductive system	8	50.0	0.89	44.4
32.	*Triticum aestivum* L.	Wheat	قمح/نخالة	Gramineae (Poaceae)	النجيلية	29	7	Skeletal and muscular system	16	55.2	0.78	42.9
33.	*Solanum nigrum* L.	Black nightshade	سموه	Solanaceae	الباذنجانية	25	4	Skin, burns, and hair	24	96.0	0.44	42.7
34.	*Zea mays* L.	Zea, corn	ذرة	Gramineae (Poaceae)	النجيلية	33	6	Digestive system	21	63.6	0.67	42.4
35.	*Punica granatum* L.	Pomegranate	رمان	Punicaceae	الرمانية	34	8	Digestive system	16	47.1	0.89	41.8
36.	*Pistacia paleastina* Boiss.	Palestinian pistachio, Terebinth	بطم	Anacardiaceae	البطمية,المانجية	10	6	Urinary system	6	60.0	0.67	40.0
37.	*Nigella ciliaris* DC.	Nigella, black cumin	حبة البركة	Ranunculaceae	الشقيقية	90	12	Reproductive system	38	42.2	0.94	39.9
38.	*Arum palaestinun* Sibth & Sm	Spotted arum	لوف	Araceae	اللوفية	29	4	Cancer	26	89.7	0.44	39.8
39.	*Portulaca oleracea* L.	Purslane	رجلة	Portulacaceae	الرجلية	17	5	Skin, burns, and hair	12	70.6	0.56	39.2

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
40.	*Hordeum vulgare* L.	Barley	شعير	Gramineae (Poaceae)	النجيلية	69	5	Urinary system	48	69.6	0.56	38.6
41.	*Ecballium elaterium* (L.) A. Richard	Squirting cucumber	قثاء الحمار	Cucurbitaceae	القرعية	53	4	Digestive system	46	86.8	0.44	38.6
42.	*Raphanus sativus* L.	Radish	فجل	Cruciferae (Brassicaceae)	الصليبية	21	8	Ear diseases	9	42.9	0.89	38.1
43.	*Lupinus albus* L.	White Lupines	ترمس مر	Leguminosae (Papilionaceae)	البقولية	27	8	Diabetes	11	40.7	0.89	36.2
44.	*Capsicum annuum* L.	Sweet Peppers, Chilli	فليفلة	Solanaceae	الباذنجانية	21	4	Circulatory system	17	81.0	0.44	36.0
45.	*Pyrus malus* L.	Apple	تفاح	Rosaceae	الوردية	82	11	Digestive system	32	39.0	0.89	34.7
46.	*Paronychia argentea* Lam.	Silvery Whitlow-Wart	رجل الحمام	Caryophyllaceae	القرنفلية	13	4	Urinary system	10	76.9	0.44	34.2
47.	*Juglans regia* L.	Wallnut	جوز البلدي	Juglandaceae	الجوزيات	24	6	Reproductive system	12	50.0	0.67	33.3
48.	*Amygdalus communis* L.	Almond	لوز	Rosaceae	الوردية	64	5	Digestive system	38	59.4	0.56	33.0
49.	*Solanum tuberosum* L.	Potato	بطاطا	Solanaceae	الباذنجانية	77	4	Digestive system	57	74.0	0.44	32.9
50.	*Brassica oleracea* L.	Wild cabbage	ملفوف	Cruciferae (Brassicaceae)	الصليبية	30	8	Rheumatism	11	36.7	0.89	32.6
51.	*Inula viscosa* (L.) Ait.	Inula	الطيون	Compositae(Asteraceae)	المركبة	11	4	Teeth inflammation	8	72.7	0.44	32.3
52.	*Cucurbita maxima* L.	Pumpkin	قرع	Cucurbitaceae	القرعية	11	4	Digestive system	8	72.7	0.44	32.3
53.	*Ficus carica* L.	Fig tree	تين	Moraceae	التوتية	46	5	Skin, burns, and hair	26	56.5	0.56	31.4
54.	*Micromeria nervosa* (Desf.)	Thyme	زعتر ناعم	Labiatae (Lamiaceae)	الشفوية	9	5	Respiratory system	5	55.6	0.56	30.9
55.	*Vitis vinifera* L.	Grape	عنب	Vitaceae	الكرمية	22	5	Skin, burns, and hair	12	54.5	0.56	30.3
56.	*Cuminum cyminum* L.	Cumin	كمون	Umbelliferae (Apiaceae)	الخيمية	54	3	Digestive system	49	90.7	0.33	30.2
57.	*Urginea maritima* (L.) Baker	Squill	بوصلان	Liliaceae	الزنبقية	32	3	Skin, burns, and hair	29	90.6	0.33	30.2
58.	*Citrullus colocynthis* (L.) Schrader	Colocynth	حنظل	Cucurbitaceae	القرعية	9	4	Digestive system	6	66.7	0.44	29.6
59.	*Anthemis palestina* Reuter	Daisy	اقحوان	Compositae(Asteraceae)	المركبة	3	4	Skin, burns, and hair	2	66.7	0.44	29.6

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
60.	*Lactuca sativa* L.	Lettuce	خس	Compositae(Asteraceae)	المركبة	14	6	Digestive system	6	42.9	0.67	28.6
61.	*Brassica oleracea* var. botrytis L.	Cauliflower	قرنبيط/زهرة	Cruciferae (Brassicaceae)	الصليبية	20	4	Circulatory system	12	60.0	0.44	26.7
62.	*Pistacia lentiscus* L.	Lentisk, Mastic tree	السريس	Anacardiaceae	البطمية,المانجية	15	8	Reproductive system	4	26.7	0.89	23.7
63.	*Micromeria fruticosa* (L.) Druce	Thyme	زعتر بلاط	Labiatae (Lamiaceae)	الشفوية	33	9	Respiratory system	14	42.4	0.56	23.6
64.	*Ficus sycomorus* L.	Sycamore	جميز	Moraceae	التوتية	24	2	Skin, burns, and hair	24	100.0	0.22	22.2
65.	*Musa sapientum* L.	Banana	موز	Musaceae	الموزية	10	5	Digestive system	4	40.0	0.56	22.2
66.	*Citrus paradisi* Macfad.	Grapefruit	جريبفروت	Rutaceae	السذابية	6	4	Wieght loss	3	50.0	0.44	22.2
67.	*Pyrus communis* L.	Pear	اجاص	Rosaceae	الوردية	4	2	Digestive system	4	100.0	0.22	22.2
68.	*Abelmoschus esculantus* L.	Okra, Lady's finger	بامية	Malvaceae	الخبازية	3	2	Digestive system	3	100.0	0.22	22.2
69.	*Ammi visnaga* (L.) Lam.	Tooth Pick	الخلة	Umbelliferae (Apiaceae)	الخيمية	25	2	Urinary system	24	96.0	0.22	21.3
70.	*Anacardium occidentale L.*	Cashew	كاشو	Anacardiaceae	بطمية,المانجية	27	2	Reproductive system	25	92.6	0.22	20.6
71.	*Urtica pilulifera* L.	Roman Nettle	قريص	Urticaceae	القريصية	25	9	Skin, burns, and hair	10	40.0	0.50	20.0
72.	*Artemisia herba-alba* Asso	White Wormwood	شيح	Compositae(Asteraceae)	المركبة	5	3	Digestive system	3	60.0	0.33	20.0
73.	*Rhus tripartita* (Ucria)	Syrian sumach	غيلان	Anacardiaceae	البطمية,المانجية	5	3	Digestive system	3	60.0	0.33	20.0
74.	*Boswellia carterii* Birdw.	Olibanum, frankincense tree, Incense	بخور, لبان ذكر	Burseraceae	البخوريات	5	3	Urinary system	3	60.0	0.33	20.0
75.	*Hibiscus sabdariffa* L.	Roselle	كركدية	Malvaceae	الخبازية	9	2	Circulatory system	8	88.9	0.22	19.8
76.	*Cicer arietinum* L.	Chick Pea	حمص	Leguminosae (Papilionaceae)	البقولية	8	2	Digestive system	7	87.5	0.22	19.4
77.	*Carum carvi* L.	Caraway	كراوية	Umbelliferae (Apiaceae)	الخيمية	14	4	Reproductive system	6	42.9	0.44	19.0
78.	*Citrullus lanatus* (Thunb.) Matsun. & Nakai	Watermelon	بطيخ	Cucurbitaceae	القرعية	7	4	Digestive system	3	42.9	0.44	19.0

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
79.	*Laurus nobilis* L.	Laurel, Sweet bay	غار	Lauraceae	الغارية	7	4	Reproductive system	3	42.9	0.44	19.0
80.	*Cassia senna* L.	Senna	سنمكة	Leguminosae (Papilionaceae)	البقولية	7	2	Digestive system	6	85.7	0.22	19.0
81.	*Rosa centifolia L*	Provence Rose	ورد جوري	Rosaceae	الوردية	7	2	Digestive system	6	85.7	0.22	19.0
82.	*Phoenix dactylifera* L.	Date palm	نخيل، تمر	Palmae (Arecaceae)	النخيلية	25	7	Digestive/nervous/ reproductive	6	24.0	0.78	18.7
83.	*Citrus sinensis* (L.) Osbeck	Orange- tree Sweet	برتقال	Rutaceae	السذابية	18	6	Respiratory, scurvy	5	27.8	0.67	18.5
84.	*Sarcopoterium spinosum* (L.) Sp.	Shruppy barnet	نتش	Rosaceae	الوردية	6	2	Diabetes	5	83.3	0.22	18.5
85.	*Rosmarinus officinalis* L.	Rosemary	اكليل الجبل	Labiatae (Lamiaceae)	الشفوية	4	3	Reproductive system	2	50.0	0.33	16.7
86.	*Phagnalon rupestre* (L.) DC.	African Fleabane, Rock Phagnalon	قديح	Compositae (Asteraceae)	المركبة	4	3	Skin, burns, and hair	2	50.0	0.33	16.7
87.	*Solanum melongena* L.	Egg- plant	باذنجان	Solanaceae	الباذنجانية	4	2	Digestive system	3	75.0	0.22	16.7
88.	*Coriandrum sativum* L.	Coriander	كزبرة	Umbelliferae (Apiaceae)	الخيمية	4	2	Circulatory system	3	75.0	0.22	16.7
89.	*Zingiber officinale* Roscoe	Ginger	زنجبيل	Zingiberaceae	الزنجبيلية	21	10	Respiratory/circulatory /reproductive	7	33.3	0.48	15.9
90.	*Myrtus communis* L.	Common Myrtle	ريحان	Myrtaceae	الآسية	7	5	Urinary/teeth	2	28.6	0.56	15.9
91.	*Piper nigrum* L.	Pepper Black	فلفل	Piperaceae	الفلفليات	11	3	Reproductive system	5	45.5	0.33	15.2
92.	*Lactuca scariola* L. (*L. serriola* L.)	Prickly lettuce, compass plan	خس الحمار	Compositae(Asteraceae)	المركبة	6	2	Skin, burns, and hair	4	66.7	0.22	14.8
93.	*Alhagi maurorum* Medik.	Alhagi Manna	شرش العاقول	Leguminosae (Papilionaceae)	البقولية	6	2	Urinary system	4	66.7	0.22	14.8
94.	*Vicia faba* L.	Broad bean	فول	Leguminosae (Fabaceae)	البقولية	6	2	Digestive system	4	66.7	0.22	14.8
95.	*Pinus halepensis* Mill.	Aleppo Pine	صنوبر	Pinaceae	الصنوبرية	3	2	Reproductive system	2	66.7	0.22	14.8
96.	*Curcuma longa* L.	Turmeric	كركم	Zingiberaceae	الزنجبيلية	3	2	Cancer	2	66.7	0.22	14.8
97.	*Prunus mahaleb* L. *(Cerasus mahaleb)*	Mahaleb Cherry	محلب	Rosaceae	الوردية	7	3	Digestive/ nervous	3	42.9	0.33	14.3
98.	*Corchorus olitorius* L.	Jews Mallow	ملوخية	Tiliaceae	الزيزفونية	7	3	Digestive/circulatory	3	42.9	0.33	14.3

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	Primary use	NIPU*	FL	RPL	ROP
99.	*Elettaria cardamomum* Maton	Cardamom	هال	Zingiberaceae	الزنجبيلية	5	3	Digestive/reproductive	2	40.0	0.33	13.3
100.	*Carthamus tinctorius* L.	Safflower	عصفر	Compositae(Asteraceae)	المركبة	5	2	Circulatory system	3	60.0	0.22	13.3
101.	*Oryza sativa* L.	Rice	ارز	Gramineae (Poaceae)	النجيلية	33	1	Digestive system	33	100.0	0.11	11.1
102.	*Corylus avellana* L.	Hazelnut	بندق	Corylaceae	البندقية	19	1	Reproductive system	19	100.0	0.11	11.1
103.	*Cupressus sempervirens* L.	Cypress	سرو	Cupressaceae	السروية	12	1	Teeth inflammation	12	100.0	0.11	11.1
104.	*Salvadora persica* L.	Persian salvadora, Toothbrush tree	سواك	Salvadoraceae	الأراكية	12	1	Teeth inflammation	12	100.0	0.11	11.1
105.	*Hypericum languinosum* Lam.	Downy St. John's- Wort	عشبة الجرح	Hypericaceae	الهايبركية	6	2	Skin, burns, and hair/reproductive	3	50.0	0.22	11.1
106.	*Morus alba* L.	Mulberry	توت	Moraceae	التوتية	5	5	Skin, burns, and hair	1	20.0	0.56	11.1
107.	*Arachis hypogaea* L.	Groundnut	فستق	Leguminosae (Papilionaceae)	البقولية	5	1	Digestive system	5	100.0	0.11	11.1
108.	*Oxalis pes-caprae*	Wood Sorrel	حمصيص	Oxalidaceae	أقصلبيات	4	2	Digestive system/ skin	2	50.0	0.22	11.1
109.	*Varthemia iphionoides* Boiss & Blanche	Common Varthemia	كتيلة/ صفيرة	Compositae(Asteraceae)	المركبة	4	2	Wieght loss/Digestive system	2	50.0	0.22	11.1
110.	*Lepidium sativum* L.	Cress	رشاد	Cruciferae (Brassicaceae)	الصليبية	4	1	Reproductive system	4	100.0	0.11	11.1
111.	*Spinacia oleraceae* L.	Spinach	سبانخ	Convolvulaceae	العلاقية	4	1	Circulatory system	4	100.0	0.11	11.1
112.	*Opuntia ficus-indica* (L.) Mill.	Prickly- pear	صبر	Cactaceae	الصباريات	3	1	Skin, burns, and hair	3	100.0	0.11	11.1
113.	*Crocus sativus* L.	Saffron	زعفران	Iridaceae	السوسنية	6	3	Circulatory/ nervous/reproductive	2	33.3	0.33	11.1
114.	*Anethum graveolens* L.	Dill	عين جرادة	Umbelliferae (Apiaceae)	الخيمية	3	3	Respiratory /digestive/weight loss	1	33.3	0.33	11.1
115.	*Mellisa officinalis* L.	Lemon Balm	ماليسيا	Labiatae (Lamiaceae)	الشفوية	3	3	Nervous /cancer/tempreture	1	33.3	0.33	11.1
116.	*Daucus carota* L.	Carrot	جزر	Umbelliferae (Apiaceae)	الخيمية	7	2	Cancer/Diabetes	2	28.6	0.22	6.3

NIMU: No. of informants who mentioned the plant for any medicinal use, NA: No. of ailments treated by species, NIPU: No. of informants who reported the plant for the primary use

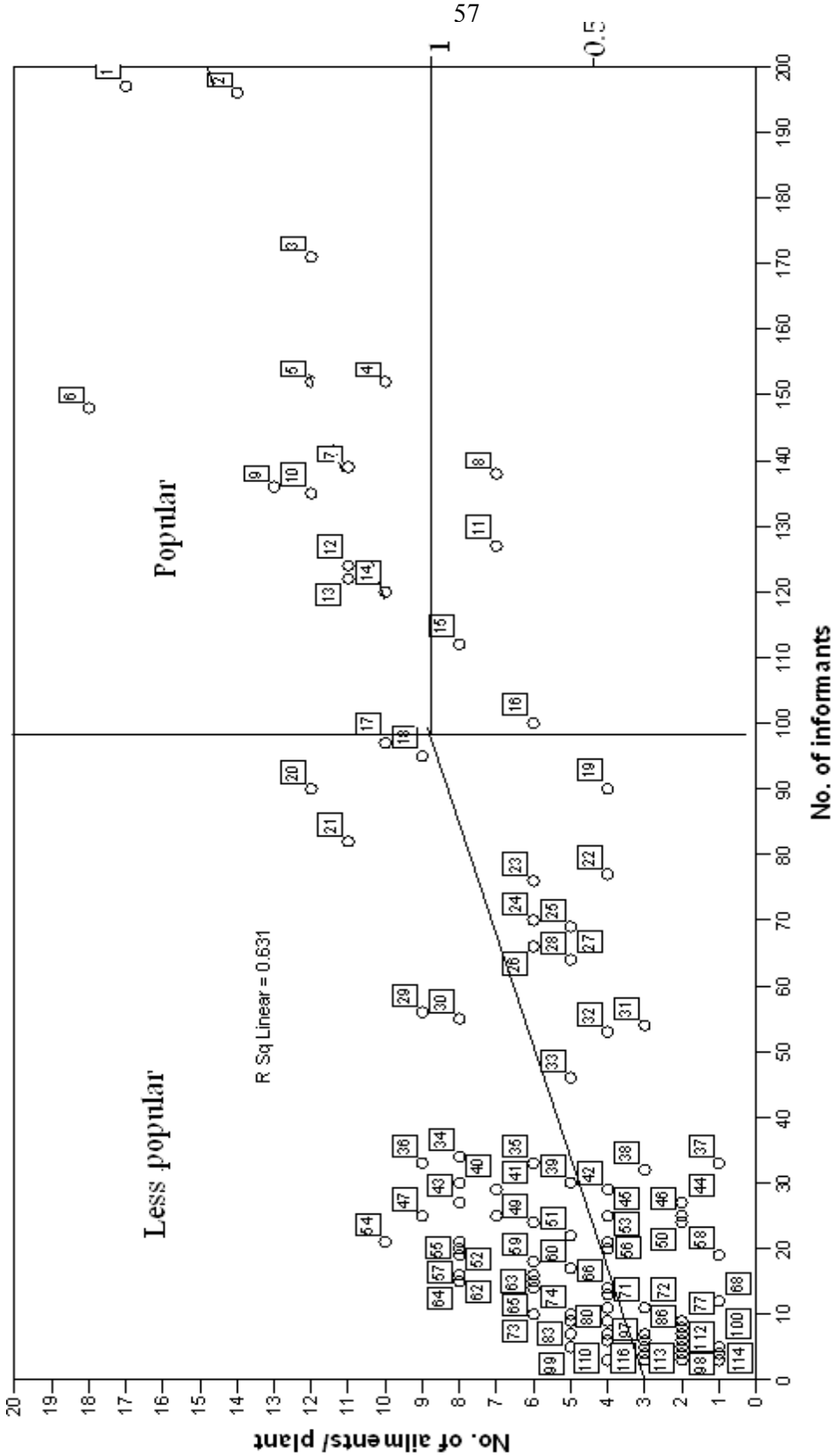
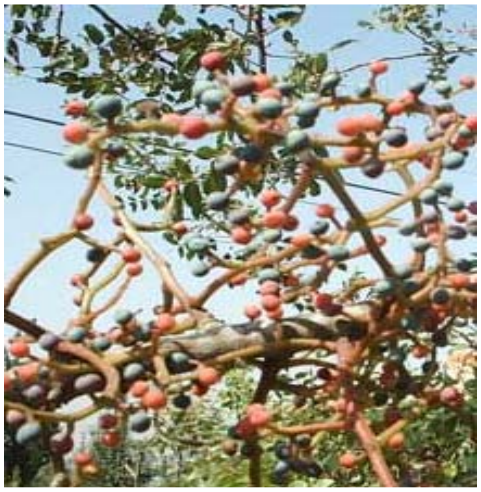


Figure 3.6 Relationship between number of informants who cited a particular plant and the number of its uses. Numbers represent the species as they appear in Table 3.6

Table 3.7 Healing effectiveness of study plants based on primary use and ROP values

Diseases	**Most effective plants**
Digestive System	*Ceratonia siliqua* L.
	Sesamum indicum L.
Skin related problems (burns, hair, etc...)	*Allium cepa* L.
	Lawsonia inermis L.
Reproductive system	*Trigonella foenum- graecum* L.
	Petroselinum sativum Hoffm.
Nervous system	*Coffea arabica* L.
	Phoenix dactylifera L.
Respiratory system	*Majorana syriaca* (L.) Rafin.
	Citrus limon (L.) Burm. Fil
Cancer	*Arum dioscorides* Sibth & Sm
	Daucus carota L.
Diabetes	*Lupinus albus* L.
	Sarcopoterium spinosum (L.) Sp.
Headache and temperature	*Eucalyptus camaldulensis* Dehn.
	Mellisa officinalis L.
Circulatory system	*Crataegus aronia* (L.) Bosc. ex DC.
	Capsicum annuum L.
Bites, and Stings	*Allium sativum* L.
	Lycopersicon esculentum Mill.



1

2

3

4

5

6

Figure 3.7 Plant figures: 1: *Pistacia paleastina* , *2: Ceratonia siliqua*, *3: Teucrium polium*, *4: Juglans regia*, *5: Portulaca oleracea*, *6: Cucurbita maxima*, *7: Nigella ciliaris*, *8: Sesamum indicum*, *9: Punica granatum*, *10: Psidium guajava*, *11: Petroselinum sativum*, *12: Opuntia ficus-indica*

Figure 3.7 Continued

7

8

9

10

11

12

Chapter Four

Discussion

Medicinal plants are known for decades as essential resources to human health and wellbeing. The traditional cultural use of plant prescriptions and their protective and therapeutic importance is most likely related to low cost, easy access, limited side effects and the folk relationship with it. Due to the limited number of studies in Palestine (Ali-Shtayeh & Jamous, 2006) in this field and to the fact that published data does not reflect the actual status of the traditional use of these plants (Said & Azaizeh, 2002), the current study aimed at: evaluating the traditional use of medicinal plants in Qalqilia District, a semi-coastal area, as a part of a series of ethno-botanic studies for the evaluation of the status of traditional herbal medicine in the Palestinian Communities (Ali-Shtayeh & Jamous, 2006; 2008).

4.1 Study population

The current study shows that women are more involved than men with respect to family healthcare.

Only three professional practitioners of traditional medicine were encountered in the study area. This number is considerably less than that previously reported in similar surveys (Yaniv *et al.,* 1987; Ali-Shtayeh *et al.*, 2000; Dafni *et al.,* 1984; Azaizeh *et al*., 2002). Each healer has his own methods of preparation, following his parents or teacher's tradition. A limited exchange of information between the practitioners in the same area was observed as each healer like to keep his knowledge as his own secret of success; and afraied of others (Azaizeh *et al*., 2002). Furthermore, we found no indication for systematic transmission of instruction from one generation of healers to another with a notable decline in number of interested children of the healers who seem to be interested to follow this

carrier. This might eventually lead to loss of heritable knowledge (Azaizeh, *et al*., 2002).

4.2 Primary use

In this study 45 plans species out of a total of 116 were reported in a similar survey conducted in the West Bank area of Palestine by Ali-Shtayeh (Ali-Shtayeh *et al.,* 2000). Out of these 45, twenty plants were selected and compared for their primary use with those reported by Ali-Shtayeh (Ali-Shtayeh *et al*., 2000). Ten plant species were found to have the same primary use; however, the rest seems to show differences in their primary use (Table 4.1). discrepancy in reported primary use is most likely to be due to the fact that people in different areas have inherited different knowledge and belives, and plant availability in different area.

Interestingly, *Citrullus colocynthis*, reported in our survey for the treatment of digestive system, however, it was reported to be used for treatment of rheumatism and arthritis in the West Bank area. On the other hand, *Urtica pilulifera*, in our survey was found to be used for treatment of skin related diseases, while it was reported for treatment of rheumatism and arthritis in the West Bank area (Table 4.1). Data presented in Table 4.1 also include primary use for some selected common plants, for comparison, with that reported in Israel (Palevitch *et al*., 1986) and the West Bank (Ali-Shtayeh *et al*., 2000). When compared with the study of Palevitch, our findings showed similarities in primary use in nine plant species.

Table 4.1 comparison between 20 plants cited in the present survey with those cited in West Bank and Israel survey

Plant	Primary use in present survey	Primary use in West Bank survey*	Primary use in Israel survey**
Alhagi maurorum	Urinary system	Urinary system and stone	Urinary system and stone
Allium sativum	Digestive system	Skin and respiratory system	-----
Citrullus colocynthis	Digestive system	Rheumatism and arthritis	Rheumatism and arthritis, diabetes
Crataegus aronia	Circulatory system	Rheumatism, diabetes, digestive system, urinary system and stones	----
Ecballium elaterium	Digestive system	Hepatitis (Digestive system)	Hepatitis (Digestive system)
Eruca sativa	Reproductive system	Skin disease	----
Foeniculum vulgare	Digestive system	Digestive system	Digestive system
Inula viscosa	Teeth inflammation	Skin disease	Infertility and rheumatic pains
Laurus nobilis	Reproductive system	Rheumatism and arthritis, urinary system and skin diseases	Rheumatism and arthritis, skin diseases
Majorana syriaca	Respiratory system	Respiratory system	Tooth and gum aches
Micromeria fruticosa	Respiratory system	Respiratory system	Respiratory system and digestive system
Paronychia argentea	Reproductive and urinary	Urinary system and stones	Urinary system and stones
Ruta chalepensis	Digestive system	Rheumatism and arthritis	Rheumatism and arthritis
Salvia fruticosa	Digestive system	Digestive system	Digestive system
Sarcopoterium spinosum	Diabetes	Digestive system	Digestive system
Teucrium polium	Digestive system	Digestive system	Digestive system (stomach aches)
Trigonella foenum-graecum	Reproductive system	Urinary system and stone	Diabetes and digestive system
Urginea maritima	Skin disease	Skin disease	Skin disease
Urtica pilulifera	Skin disease	Rheumatism and arthritis	Wound healing and inflammation
Varthemia iphionoides	Weight loss and digestive system	Digestive system	Headaches, digestive system

***** Ali-Shtayeh *et al*., 2000
****** Palevitch *et al*., 1986

4.3 Taxonomic diversity of plants

Despite the small area of Qalqilia District, a small semi-coastal area; the present study recorded (116 plants) that are still in use in Traditional Arabic Palestinian Medicine (Table 3.2). Such high number of plant species reflects high plant diversity in a small area. Such high diversity is well known in the Mediterranean climate which is characterized by high humidity levels, moderate temperature, rain, and wind (Ali-Shtayeh &

Hammad, 1995). With respect to diversity, the findings of this study are consistent with these reported by Ali-Shtayeh (Ali-Shtayeh & Jamous, 2006).

4.4 Commonly used plants and remedies

The most frequently utilized plants for treatment in Qalqilia district are shown in Table 3.2. The table shows the presence of 116 different plant species indicating high availability of these plants in the region that are used for therapeutic purposes. When compared with the findings of Ali-Shtayeh and Jamous, (2006), which compared commonly used medicinal plants in the Northern West Bank and Gaza strip, with our results; 112 plant species were reported in NWB and 90 reported in Gaza area.

Based on number of informants, the top 10 plant species (Table 4.2) were selected for comparison between the present study and that of Ali-Shtayeh and Jamous, (2006). Similarities were found in several plants species in three areas, despite differences in ranking status. Seven plant species were among the top 10 species in the three areas. Eight were common in both the NWB and Qalqilia district in the current study; and seven were common in Qalqilia and Gaza. Differences with respect to used plants in different geographic regions is most likely to be due to; plant availability and access (eg. *Ceratonia siliqua* L.), traditional knowlge and social (eg. *Salvia fruticosa* Mill., and *Micromeria fruticosa* L.), and religious reasons (eg. *Olea europaea* L., and *Nigella ciliaris* DC.).

The findings of the current study clearly show that many plant species are still in use for treating various human diseases of different human systems in the Qalqilia distrect. Among these plants 97 species (83.6 %)

are used for treating gastrointestinal disorders; 77 (66.4%) used for treating skin related problems; 68 (58.6%) for treating reproductive system, and 66 (56.9%) for treating circulatory system (Table 3.3). Such findings indicate that gastrointestinal disorders are the most prevalent health problems followed by skin, reproductive and circulatory system, respectively. Our findings are consistent with that reported by Ali-Shtayeh (2006) with respect to plant species used for treatment of gastrointestinal (163 plant species NWB, 70 Gaza) species and skin related problems (139 plant species NWB, 45 Gaza). As a small geographical area with small size population, gastrointestinal disorders seem to be a major health proplem in the area with the traditional belife that herbal medicine is effective in treatment of most associated disease symptoms. Prevalence of gastrointestinal problem in the Qalqilia district might also reflect poor sanitary and hygienic conditions in this area. However, our results indicate differences related to prevalence of reproductive and circulatory systems problems which ranked third and forth position in our study compared to respiratory and urinary system in the study of Ali-Shtayeh and Jamous (2006). This might again show that availability, and traditional knowledge might be behind such observed differeance in the various regions. Appendix F shows in more detail of some of the commonly used plants reported in the current study.

Table 4.2 The top ten utilized plants based on the number of informants who mentioned the plant for any use, in Qalqilia, Northern West Bank, and Gaza Strip

Qalqilia District	Northern West Bank*	Gaza Strip*
Olea europaea L.	*Salvia fruticosa* Mill.	*Matricaria aurea* (L.) Sch. Bip.
Salvia fruticosa Mill.	*Matricaria aurea* (L.) Sch. Bip.	*Allium sativum* L.
Citrus limon (L.) Burm. Fil	*Anisum vulgare* L.	*Petroselinum sativum* Hoffm.
Anisum vulgare L.	*Allium sativum* L.	*Anisum vulgare* L.
Camellia thea Link.	*Mentha spicata* L.	*Salvia fruticosa* Mill.
Allium sativum L.	*Trigonella foenum- graecum* L.	*Allium cepa* L.
Mentha spicata L.	*Majorana syriaca* (L.) Rafin.	*Trigonella foenum- graecum* L.
Coffea arabica L.	*Olea europaea* L.	*Olea europaea* L.
Matricaria aurea (L.) Sch. Bip.	*Citrus limon* (L.) Burm. Fil	*Citrus limon* (L.) Burm. Fil
Majorana syriaca (L.) Rafin.	*Allium cepa* L.	*Dianthus strictus* Banks & Sol.

* Ali-Shtayeh & Jamous, (2006).

4.5 Socio-economic significance and sources of ethnobotanic knowledge

The most popular plants reported in this study included cultivated plants and represented by 50% of used plants. These included: *Allium cepa* L., *Allium sativum* L., *Anisum vulgare* L., *Ceratonia siliqua* L., *Citrus limon* (L.) Burm. Fil, *Mentha spicata* L. and *Petroselinum sativum* Hoffm. Purchased plant species constituted 16.4% of used plants and such low percentage was consistent with the study of Lev (2006). Wild plants were represented by 29.3% and included *Salvia fruticosa* Mill. and *Majorana syriaca* (L.) Rafin. The majority of wild medicinal plants were among less

popular plants in the region such as *Teucrium polium* L. and *Urtica pilulifera* L.

These findings clearly show that herbal medication still holds an important status in folkloric medicine and primary health care in Qalqilia District. Folkloric medicine in the area seems to partially substitute modern medicine and reduce medical care costs. This is clear from the finding that a regular family saves a monthly average of 9 visits to physicians through relying on plant treatments. A lower number of such visits (2-6/ month) was reported for NWB and Gaza (Ali-Shtayeh & Jamous, 2006).

It is worth mentioning that all participated families reported the use of medicinal plants in family primary health care. Such finding reflects the extent of connection of Palestinians to traditional medicine and the knowledge related to use of these plants. Most of the previous studies in the field focused on healers and attareen knowledge and practices ignoring the role of household medicine (Said *et al*., 2002). Household traditional knowledge has shown to be a good source of information in TAPHM. This is clear from the finding that 88.5% of the participants reported to gain traditional knowledge from parents and grandfathers, while only 5% reported that they gain their knowledge from healers.

4.6 Plant parts and forms used

In the current study leaves were reported to be the most commonly used plant parts for treatment. This might indicates that leaves are the major site of active ingredients (Figure 3.4). Remedies were administered either orally or externally. In TAPHM alcohol is generally not used as

extraction solvent for religious reasons. According to the current survey, only in some extraordinary cases wine or alcohol was used. In cases where used plant materials contained toxic ingredients (eg. *Lupinus albus* L., *Ricinus communis* L.), vinegar or oil are used for detoxification purposes; that agree with results of Said *et al*., study (2002). Prescriptions may include one or more plant and any given plant may be used to treat several diseases and that's why it is difficult to assign certain plants to specific diseases (Ali-Shtayeh *et al*., 2000; Friedman *et al*., 1986). It is also well known that infusions or fresh parts are the best forms for treatment as heat or other chemical extraction procedures may denature active ingredients.

4.7 Non-botanical medical materials

The current study indicates that most of the used remedies rely on plants in TAPHM in the study region as plants constituted 88.5% of the used remedies. However, non-botanical materials were also used either alone or mixed with plant materials. Non-botanical materials constituted 11.5% (15 different materials). These included: 6 animal materials (4.5%), one chemical (0.8%), 5 minerals (3.8%), one fungus (0.8%), one organic (0.8%), and one (0.8%) of mixed origin (Table 3.5). In his study on medicinal plants, Lev (2002) identified 286 used materials. These included: 234 plant species (81.8%); 27 animal species (9.5%); 15 minerals (5.2%) and 10 substances (3.5%) of mixed origin.

4.8 Healing potential of medicinal plants based on calculated indices

4.8.1 Relative popularity level values (RPL)

Plants were classified in two group based on their RPL values: 'popular' (RPL =1) or 'less popular' (RPL <1). The results showed that the

number of popular plants (16 plants, 13.8 %) is considerably smaller than that of the less popular (100, 86.2 %); despite the fact that these plants are more abundant and with more frequent use. Popular plants are also believed to be more effective and used for the treatment of several diseases associated with various systems.

4.8.2 Rank-order priority (ROP) values

Ceratonia siliqua L. was found to be the most commonly used medicinal plants in Qalqilia area. This may be mainly attributed to its abundance in this semi-coastal area of the Mediterranean region. The plant taste is another factor that might contribute to its ranking priority as it is commonly used as a soft drink. The plant is believed to treat gastrointestinal related problems.

When the present results on medicinal plants were compared with these of Ali-Shtayeh *et al*., (2000), the top 10 plants in both studies, based on the ROP value in the Qalqilia distrect and NWB and Gaza, only 2 plants were among the top ten species in these areas shared (Table 4.3).

Table 4.3 The top ten utilized plants based on ROP, in Qalqilia and West Bank

Qalqilia distrect	West Bank*
Ceratonia siliqua L.	*Teucrium polium* L.
Sesamum indicum L.	*Paronychia argentea* Lam.
Cucumis sativus L.	*Salvia fruticosa* Mill.
Salvia fruticosa Mill.	*Majorana syriaca* (L.) Rafin.
Camellia thea Link.	*Ecballium elaterium* L.
Anisum vulgare L.	*Artemisia inculata*
Crataegus aronia L.	*Plumbago europea*
Lycopersicon esculentum Mill.	*Matricaria aurea* (L.) Sch. Bip.
Allium cepa L.	*Ammi visnaga* (L.) Lam.
Majorana syriaca (L.) Rafin.	*Urginea maritima* (L.) Baker

* Ali-Shtayeh *et al*. (2000)

CONCLUSIONS AND RECOMMENDATIONS

A large number of medicinal plants (116) are still in use in the Qalqilia district, a small semi-coastal Mediterranean area. Only a small percentage (13.8%) of the total number of medicinal plants used in TAPHM in Qalqilia is considered popular. Popular plants are these which are more abundant and accessible and culturally rooted in the area. Medicinal traditional knowledge (TK) is still transferred from grandfathers and parents to younger generation but seems to be aging. Medicine of household as apposed to medicine of the healers has proven to be an important source of TK associated with the use of medicinal plants in TAPHM and should be therefore, taken into consideration in ethnobotanic studies of medicinal plants.

Recommendation

1. The need for identification of possible side effects in order to limit complications that might occure due to miss use of such plants.
2. The need to establish conserved areas in the region aiming at protecting endangered species and this can done through the establishment of societies that encourage plant protection and mainatanance of medicinal plants.
3. The need for preserving knowledge through documentation and encouragement of people working in the field (healers).
4. The need for specially desighed educational programs that deals with the safe use of herbal medicine and this can be done through the Ministry of Education or any othr concerned governmental bodies.

References

- Abu-Chaar, C. I., & Ades, J. (1961). **Medicinal plants of Lebanon**. *Pakistan Journal of Science Industrial Research*, **4**, 153-157.

- Abu-Irmaileh, B. E., & Afifi, F. U. (2000). **Treatment with medicinal plants in Jordan**. *Dirasat*, **27**, 53-74 (in Arabic with English Abstract).

- Abu-Irmaileh, B. E., & Afifi, F. U. (2003). **Herbal medicine in Jordan with special emphasis on commonly used herbs**. *Journal of Ethnopharmacology,* **89**, 193-197.

- Abu-Rabia A. (1999). ***Bedouin's Traditional Medicine*** *[in Hebrew]***.** Tel-Aviv: Mod Publishing.

- Abu-Rabia, A. (2005). **Palestinian plant medicines for treating renal disorder. An inventory and brief history**. *Alternative and Complementary Therapies – December* 2005, 295-300.

- Ali-Shtayeh, M. S., & Jamous, R. M. (2008). **Traditional Arabic Palestinian Herbal Medicine, TAPHM**. *BERC, Palestine, Nablus, Til*.

- Ali-Shtayeh, M. S., & Jamous, R. M. (2002). **"Red List of Threatened Plants" of the West Bank and Gaza Strip and the Role of Botanic Gardens in their Conservation.** *BERC, Palestine: Nablus, Til, **2**.*

- Ali-Shtayeh, M. S., & Jamous, R. M. (2006). **Ethnobotany of Palestinian herbal medicine in the Northern West Bank and Gaza Strip: Review and a comprehensive field study.** *BERC, Palestine, Nablus, Til, **4**.*

- Ali-Shtayeh, M. S., Yaniv, Z., & Mahajna, J. (2000). **Ethnobotanical survey in the Palestinian area: A classification of the healing potential of medicinal plants.** *Journal of Ethnopharmacology*, **73**, 221-232.

- Alrawi, A., & Chaakravarty, H. L. (1964). ***Medicinal plants of Iraq***. Baghdad: Ministry of Agriculture and Technology. Bulletin No. **146**.

- Al-Said, M. S. (1997). **Medicine in Islam**. In H. Selin (Ed.), *Encyclopedia of the history of the science, technology, and medicine in non-Western cultures* (pp. 695-698). Dordrect/ Boston/ London: Klewer Academic Publishers.

- Azaizeh, H., Fuder, S., Khalil, K., & Said, O. (2002). **Ethnobotanical survey of local practitioners of the Middle Eastern region: the status of traditional Arabic medicine**. *Fitoterapia*, **74**, 98-108.

- Bailey, C., & Danin A. (1981). **Bedouin plant utilization in Sinai and the Negev.** *Economic Botany*, **35**, 145-162.

- Challier, B., Perarnau, J.M., Viel, J.F. (1998). **Garlic, onion and cereal fibers as protective factors for breast cancer: a French case-control study**. *European Journal of Epidemiology,* **14**, 737-747.

- Crowfoot, G., and Baldensperger, L. (1932). ***From cedar to hyssob: A study in the folklore of plants in Palestine*.** London: Sheldon Press.

- Dafni, A., Yaniv, Z., & Palevitch, D. (1984). **Ethnopharmacological survey of medicinal plants in northern Israel**. *Journal of Ethnopharmacology*, **10**, 295-310.

- Eddouks, M., Maghrani, M., Lemhadri, A., Ouahidi, M. L., & Jouad, H. (2002). **Ethnopharmacological survey of medicinal plants used for the treatment of diabetes mellitus, hypertention and cardiac diseases in the south-east region of Morocco (Tafilalet).** *Journal of Ethnopharmacology*, **82**, 97-103.

- Fahmy, I. R. (1963). **Drug plants of Egypt**. *Planta Medica*, **11**, 2002-224.

- Fkyushima, S., Takada, N., Hori, T., Wanibuchi, H. (1997). **Cancer prevention by organosulfer compounds from garlic and onion**. *Journal of Cellular Biochemistry,* **27** (suppl.), 100-105.

- Friedman, J., Yaniv, Z., Dafni, A., & Palevitch, D. (1986). **A preliminary classification of healing potential of medicinal plants, based on a rational analysis of an ethnopharmacological field survey among Bedouins in the Negev desert, Israel.** *Journal of Ethnopharmacology*, **16**, 275-287.

- Granqvist, H. (1947). ***Child problems among the Arabs***. Helsinki & Copenhagen: Helsingfors, Soderstorm.

* Hamarneh, S. (1991). **Ibn al- Quff's contributions to Arab-Islamic medical sciences.** *Hamdard***, 34**, 27-36.

- Heneidy, SZ., and Bidak, LM. (2004). **Potential uses of plant species of the coastal Mediterranean region, Egypt**. *Pakistan Journal of Biological Sciences*, **7**, 1010-23.

- Hitti, P. (1952). **History of the Arabs, from the earliest times to the present.** London: Macmillan & Co.

- Hoper, D. (1937). **Useful plants and drugs of Iran and Iraq**. *Botanical Series Publication 387*. Chicago: Field Museum of Natural History.

- Hunke, S. (1981). **Shams Al Arab Tastaa Ala AlGharb (The Arab Sun is Shining on the West)** (F. Baidoon, & K. Dosoqi, Trans.). Casablanca (Morocco): Dar Alafak AlJadedah. (Original work published 1962).

- Johnstone, P. (1998). Prophet Medicine. In P. Johnstone (Ed.), *Ibn Qayyim al-Jawziyya Medicine of the Prophet*. Cambridge: The Islamic Texts Society.

- Kotb, F. (1985). **Medicinal plants in Libya**. Tripoli: Arab Encyclopedia House.

- Lev, E., & Amar, Z. (2000). **Ethnopharmacological survey of traditional drugs sold in Israel at the end of the 20th century**. *Journal of Ethnopharmacology*, **72**, 191-205.

- Lev, E., & Amar, Z. (2002). **Ethnopharmacological survey of traditional drugs sold in the Kingdom of Jordan**. *Journal of Ethnopharmacology***, 82**, 131-145.

- Mendelsohn, H., & Yom-Tov, Y. (1999). **Fauna Palaestina: Mammalia of Israel.** Jerusalem: The Israel Academy of Sciences and Humanities.

- Milner, J.A. (1996). **Garlic: its anticarcinogenic and antitumorigenic properties**. *Nutrition Reviews* **54**, S82-S86.

- Munday, R., Munday, C.M. (1999). **Low doses of diallyl disulfide, a compound derived from garlic, incease tissue activities of quinone reductase and glutathione transferase in the gastrointestinal tract of the rat**. *Nutrition and Cancer* **34**, 42-48.

- Mursi, A. (1966). **Studies on Arab Medical Affairs. (Dirasat fi'l-Shi'un al-tibbiyah al-arabiyah, in Arabic)**. *Alexandria: Dar al-Ma'arif,: 7-12*.

- Palevitch, D., & Yaniv, Z. (1991). **Medicinal plants of the Holy Land.** Tel-Aviv: Modan Publishing House. I: 24-29 (Hebrew).

- Palevitch, D., Yaniv, Z., & Dafni, A. (1986). **Medicinal plants of Israel: an ethnobotanical survey.** In L. A. Craker, J. E. Simon (Eds.), *Herbs, spices, and medicinal plants* (pp. 281-345). Phoenix, AZ: Oryx Press.

- Plitmann, U., Heyn, C., Danin, A. and Shmida, A. (1983). **Pictorial Flora of Israel** (in Hebrew). *Israel, Massada, 344 p*.

- Said, O., Khalil, K., Fulder, S., & Azaizeh, H. (2002). **Ethnopharmacological survey of medicinal herbs in Israel, the Golan Heights and the West Bank region**. *Journal of Ethnopharmacology*, **83**, 251-265.

- Sanagustin, F. (1983). **Contribution a l'etude de la matiere medicale traditionnelle chez les herboristes d'Alep**. *Bulletin d'Etudes Orientales*, **31**, 65-112.

- Savage-Smith, E. (1996). **Medicine of the prophet**. In R. Rashid, & R. Morelon (Eds.), *Encyclopedia of the history of Arab Science* (pp. 907-908). Vol. 3. London and New York: Routledge.

- Shtayeh, M., S., Hamad, A. Kh. (1995). **Protection of the Palestinian Environment.** Nablus: Alhasoub Alarabi (Arabic).

- Shulz, V., Hansel, R., & Tyler, V., E. (1998). **Rational phytotherapy. A physician's guide to herbal medicine**. Berlin: Springer- Verlag.

- Siegers, C.P., Steffen, B., Robke, A., Pentz, R. (1999). **The effects of garlic preparations against human tumor cell proliferation**. *Phytomedicine* **6**, 7-11.

- Tang, Z., Sheng, Z., Liu, S., Jian, X., Sun, K., Yan, M. (1997). **The preventing function of garlic on experimental oral precancer and its**

effect on natural killer cells, T-lymphocytes and interleukin-2. *Hunan I Ko Ta Hsueh Pao* **22**, 346-348.

- Tyler, V. E. (1999). **Herbs of choice. The therapeutic use of phytomedicinals.** New York: Pharmaceutical Products Press.

- Ullmann, M. (1978). **Islamic surveys: Islamic medicine**. Edinburgh: University Press.

- World Health Organisation (WHO), (2002). *The WHO strategy for traditional medicine: Review of the global situation and strategy implementation in the Eastern Mediterranean region health and human security.* WHO, Regional Committee for the Eastern Mediterranean: Gland and Geneva, Switzerland.

- World Health Organisation, International Union of Conservation of Nature, & World Wide Fund. (1993). *Guidelines on the conservation of medicinal plants*. WHO: Gland and Geneva, Switzerland.

- Yaniv, Z., Dafni, A., Friedman, J., Palevitch, D. (1987). **Plants used for the treatment of diabetes in Israel**. *Journal of Ethnopharmacology* **19**, 145-151.

- Zohary, M., Feinbrun-Dothan, N. (1966-1986). **Flora Palaestina (**Volume: 1-4**).** Jerusalem: The Israeli Academy of Sciences and Humanities.

- اشتية, م. س., جاموس, ر. م., وحمد, ع. خ. (2003). **دليل اشجار وشجيرات من فلسطين**. نابلس, تل: مركز ابحاث التنوع الحيوي والبيئة.

- العيسوي, د. م. (1998). **الدليل الحقلي لازهار الاردن البرية والدول المجاورة**. عمان: مطبعة جريدة الرأي.

- النجار, أ. (1994). **في تاريخ الطب في الدولة الاسلامية**. القاهرة: دار المعارف.

Appendicies

Appendix A: Study population

جدول A.1 معلومات شخصية للمشاركين في دراسة النباتات الطبية والمعرفة التراثية المرتبطة بها وباستخداماتها في الطب الشعبي الفلسطيني

الرقم	الاسم	مكان الميلاد	تاريخ الميلاد	الجنس	العنوان مكان السكن	التحصيل العلمي	المهنة
1	استقلال رمضان حوتري	قلقيلية	1953	انثى	النبي الياس	امي	ربة بيت
2	رندة محمد رضوان	نابلس	1970	انثى	النبي الياس	ثانوي	ربة منزل
3	زبيدة اسعد عبد الكريم	عزون	1975	انثى	النبي الياس	اساسي	ربة منزل
4	صباح محمد عودة	كفر ثلث	1962	انثى	النبي الياس	اساسي	ربة منزل
5	عاقلة رشيد خليف	النبي الياس	1970	انثى	النبي الياس	جامعي	موظفة
6	فاطمة عثمان زماري	النبي الياس	1975	انثى	النبي الياس	ثانوي	ربة منزل
7	وصال سعيد خليف	خان يونس	1981	انثى	النبي الياس	جامعي	ربة منزل
8	يسرى عدنان خليف	النبي الياس	1963	انثى	النبي الياس	ثانوي	ربة منزل
9	امينة عبد الكريم بشير	حجا	1956	انثى	جينصافوط	امي	ربة منزل
10	حنان عبد الكريم بشير	نابلس	1976	انثى	جينصافوط	جامعي	بلاعمل
11	حنين عبد الكريم بشير	جينصافوط	1978	انثى	جينصافوط	جامعي	موظف
12	ختام بشير	جينصافوط	1961	انثى	جينصافوط	اساسي	ربة منزل
13	رشا بشير عبد الرحمن	جينصافوط	1980	انثى	جينصافوط	ثانوي	ربة منزل
14	روحي احمد شوبكي	يافا	1945	ذكر	جينصافوط	دبلوم	استاذ متقاعد
15	سمية سليم بشير	جينصافوط	1946	انثى	جينصافوط	امي	ربة منزل
16	عثمان يوسف بشير	جينصافوط	1932	ذكر	جينصافوط	اساسي	تاجر
17	عذبة عبد الرحمن بشير	نابلس	1979	انثى	جينصافوط	اساسي	ربة منزل
18	نجوان عبد اللطيف يوسف بشير	جينصافوط	1963	انثى	جينصافوط	اساسي	ربة منزل
19	اميمة حمد الله شقير	حبلة	1969	انثى	حبلة	اساسي	مزارعة
20	بدرية على عبد الرحيم ابو شقير	حبلة	1953	انثى	حبلة	امي	ربة منزل
21	حسين علي عبد الرحيم ابوشقير	حبلة	1964	ذكر	حبلة	جامعي	موظف
22	رولا نضال الشاعر	قلقيلية	1979	انثى	حبلة	اساسي	ربة منزل
23	زهير علي عبد الرحيم ابوشقير	حبلة	1962	ذكر	حبلة	اساسي	عامل
24	سماح علي محمد صالح	حبلة	1979	انثى	حبلة	جامعي	موظفة
25	شادية عبد الهادي يوسف الجدع	حبلة	1981	انثى	حبلة	جامعي	ربة منزل
26	صفية محمد مسعود مرداوي	حبلة	1928	انثى	حبلة	امي	ربة منزل
27	عائدة على محمد مرداوي	حبلة	1977	انثى	حبلة	جامعي	موظفة
28	مريم عبد الكريم عبدالله مراعبة	راس عطية	1958	انثى	حبلة	امي	ربة منزل
29	منى سليم داود ابوشقير	مسحة	1974	انثى	حبلة	اساسي	ربة منزل
30	نضال محمد يوسف الشاعر	حبلة	1972	ذكر	حبلة	ثانوي	موظف
31	امل صدقي شواهنة	راس عطية	1963	انثى	راس عطية	امي	ربة منزل
32	تغريد صادق احمد الطويل	نابلس	1988	انثى	راس عطية	اساسي	ربة منزل
33	حسنية محمود ظاهر	كفر ثلث	1947	انثى	راس عطية	امي	ربة منزل
34	حمزة وجيه مراعبة	راس عطية	1965	ذكر	راس عطية	ثانوي	عامل
35	ختام عبد الحليم مراعبة	نابلس	1984	انثى	راس عطية	دبلوم	ربة منزل
36	رشيدة ظاهر مراعبة	كفر ثلث	1958	انثى	راس عطية	ثانوي	ربة منزل
37	رمزي وجيه عبد العزيز مراعبة	طولكرم	1976	ذكر	راس عطية	ثانوي	عامل
38	رويدة يوسف محمد مراعبة	قلقيلية	1969	انثى	راس عطية	اساسي	ربة منزل
39	زاهرة عبد الرحمن مراعبة	راس عطية	1985	انثى	راس عطية	ثانوي	بلا عمل
40	سائد حمدان عبد العزيز مراعبة	طولكرم	1975	ذكر	راس عطية	اساسي	عامل
41	سميرة حمدان عبد العزيز مراعبة	طولكرم	1985	انثى	راس عطية	جامعي	بلا عمل
42	سوسن محمد عبد القادر ياسين	راس عطية	1970	انثى	راس عطية	ثانوي	ربة منزل

الرقم	الاسم	مكان الميلاد	تاريخ الميلاد	الجنس	العنوان مكان السكن	التحصيل العلمي	المهنة
43	شادي محمد عبد العزيز مراعبة	طولكرم	1982	ذكر	راس عطية	دبلوم	عامل
44	شادية محمد مراعبة	طولكرم	1987	انثى	راس عطية	جامعي	طالبة
45	شروق عارف مراعبة	طولكرم	1984	انثى	راس عطية	جامعي	طالبة
46	عادل صدقي شواهنة	راس عطية	1964	ذكر	راس عطية	اساسي	عامل
47	عبد العزيز وجية مراعبة	طولكرم	1977	ذكر	راس عطية	جامعي	بلا عمل
48	عبير قاسم مراعبة	قلقيلية	1986	انثى	راس عطية	ثانوي	ربة منزل
49	فادي محمد عبد العزيز مراعبة	طولكرم	1980	ذكر	راس عطية	ثانوي	عامل
50	فتحية حافظ غرابة	قلقيلية	1958	انثى	راس عطية	اساسي	ربة منزل
51	فخري عبد العزيز مراعبة	راس عطية	1965	ذكر	راس عطية	اساسي	عامل
52	ليلى عبد الحليم مراعبة	قلقيلية	1978	انثى	راس عطية	اساسي	ربة منزل
53	ليلى وجية مراعبة	طولكرم	1980	انثى	راس عطية	ثانوي	ربة منزل
54	مريم عبد الكريم مراعبة	راس عطية	1987	انثى	راس عطية	ثانوي	طالبة
55	مريم عبدالرحمن محمود	قلقيلية	1989	انثى	راس عطية	ثانوي	بلاعمل
56	نعمة عبد العزيز مراعبة	راس عطية	1948	انثى	راس عطية	امي	ربة منزل
57	نعيمة عبد العزيز مراعبة	كفر ثلث	1954	انثى	راس عطية	امي	ربة منزل
58	نوال احمد عبد الله	راس طيرة	1964	انثى	راس عطية	اساسي	ربة منزل
59	حنان صلاح الدين رضوان	طولكرم	1983	انثى	عزون	ثانوي	ربة منزل
60	الهام خيري عامر رابي	عزون	1969	انثى	عزون	جامعي	موظف
61	الهام فتحي سويدان	عزون	1971	انثى	عزون	اساسي	ربة منزل
62	الهام محسن زماري	عزون	1976	انثى	عزون	جامعي	موظف
63	الهام محمد عبد الله مصلح	الكويت	1976	انثى	عزون	دبلوم	موظف
64	اياد وصفي حسين	عزون	1972	ذكر	عزون	جامعي	موظف
65	ايمان صلاح الدين رضوان	عزون	1981	انثى	عزون	ثانوي	ربة منزل
66	بثينة صالح يوسف	النبي الياس	1972	انثى	عزون	اساسي	ربة منزل
67	بديع عبد الله زماري	عزون	1942	انثى	عزون	اساسي	تاجر
68	تحفة عبد اللطيف شواهنة	كفر ثلث	1962	انثى	عزون	اساسي	ربة منزل
69	تغريد محمود محمد دهشان	الاردن	1971	انثى	عزون	ثانوي	ربة منزل
70	تيجان احمد رشيد مصلح	عزون	1969	انثى	عزون	دبلوم	موظف
71	جليلة عبد الكريم يوسف رضوان	نابلس	1970	انثى	عزون	اساسي	ربة منزل
72	حسن راسم شبيطه	عزون	1962	ذكر	عزون	جامعي	موظف
73	حسن سلامة عبد الله سليم	عزون	1960	ذكر	عزون	اساسي	عامل
74	حنان محمد حسين	عزون	1970	انثى	عزون	جامعي	موظف
75	خاتمة حامد سليمان	عزون	1941	انثى	عزون	اساسي	ربة منزل
76	خديجة محمود عبد الغافر	عزون	1942	انثى	عزون	امي	ربة منزل
77	خلدون احمد رشيد مصلح	عزون	1972	ذكر	عزون	جامعي	موظف
78	خيرية حامد محمود شبيطة	عزون	1937	انثى	عزون	امي	ربة منزل
79	دينا عبد الفتاح سليمان	عمان	1955	انثى	عزون	ثانوي	ربة منزل
80	رائد نواف رضوان	عزون	1967	ذكر	عزون	جامعي	موظف
81	رامية عبد الرحمن محمد	جينصافوط	1980	انثى	عزون	ثانوي	ربة منزل
82	رسمية يوسف عدوان	عزون	1960	انثى	عزون	اساسي	عامل
83	رقية سعيد عابد	عزون	1958	انثى	عزون	ثانوي	ربة منزل
84	زهوة عبد الله عساف	زيتا جماعين	1968	انثى	عزون	اساسي	موظف
85	زينة محمد رضوان	نابلس	1986	انثى	عزون	اساسي	ربة منزل
86	سامية طه سليم	نابلس	1982	انثى	عزون	ثانوي	ربة منزل
87	سهى كامل سويدان	الاردن	1979	انثى	عزون	ثانوي	ربة منزل
88	سوسن ابراهيم عدوان	نابلس	1981	انثى	عزون	دبلوم	ربة منزل
89	شوكية اسعد عبد الكريم	عزون	1965	انثى	عزون	اساسي	ربة منزل
90	صلاح عطا الله عدوان	عزون	1952	ذكر	عزون	اساسي	موظف

الرقم	الاسم	مكان الميلاد	تاريخ الميلاد	الجنس	العنوان مكان السكن	التحصيل العلمي	المهنة
91	عائشة فوزي رضوان	قلقيلية	1966	انثى	عزون	اساسي	ربة منزل
92	علاء عبد الفتاح احمد عدوان	عزون	1960	ذكر	عزون	جامعي	موظف
93	عماد احمد شواهنة	عزون	1974	ذكر	عزون	ثانوي	تاجر
94	فاطمة عبد الحميد عابد	نابلس	1964	انثى	عزون	دبلوم	ربة منزل
95	فلسطين وديع يوسف	سرطة	1984	انثى	عزون	جامعي	ربة منزل
96	كفاح راسم سويدان	عزون	1970	انثى	عزون	ثانوي	ربة منزل
97	محمد احمد رشيد	عزون	1976	ذكر	عزون	جامعي	موظف
98	مريم رفيق شواهنة	كفر ثلث	1982	انثى	عزون	ثانوي	ربة منزل
99	منال بديع زماري	عزون	1981	انثى	عزون	جامعي	بلا عمل
100	مها عماد عدوان	عزون	1970	انثى	عزون	ثانوي	ربة منزل
101	نسيبة محمد سليم رضوان	عزون	1949	انثى	عزون	امي	ربة منزل
102	نهى صالح حمدان	جيوس	1973	انثى	عزون	اساسي	ربة منزل
103	نوال سعيد ابو هنية	النبي الياس	1964	انثى	عزون	جامعي	موظف
104	هدى صالح جهاض	عزون	1959	انثى	عزون	اساسي	ربة منزل
105	هدى فلاح صالح شبيطة	طولكرم	1961	انثى	عزون	اساسي	ربة منزل
106	هيام حسن محسن حواري	عزون	1970	انثى	عزون	اساسي	ربة منزل
107	وجيهه يوسف عدوان	عزون	1955	انثى	عزون	اساسي	ربة منزل
108	اسلام محمد الطويل	الاردن	1989	انثى	فرعطة	اساسي	ربة منزل
109	بدرية عبد اللطيف محمد الطويل	جيوس	1952	انثى	فرعطة	اساسي	ربة منزل
110	حنان شفيق شناعة	فرعطة	1948	انثى	فرعطة	اساسي	ربة منزل
111	رانيا عماد الطويل	نابلس	1983	انثى	فرعطة	ثانوي	ربة منزل
112	رجاء ابراهيم الطويل	فرعطة	1973	انثى	فرعطة	اساسي	ربة منزل
113	رنا وجيه عرمان	نابلس	1980	انثى	فرعطة	جامعي	ربة منزل
114	ريما ظاهر شتيوي	كفر ثلث	1973	انثى	فرعطة	دبلوم	ربة منزل
115	سحر مثقال طه	فرعطة	1973	انثى	فرعطة	ثانوي	موظفة
116	سونيا عز الدين مسعود	نابلس	1983	انثى	فرعطة	ثانوي	ربة منزل
117	شفاء ابراهيم شناعة	نابلس	1971	انثى	فرعطة	اساسي	ربة منزل
118	فايقة محمد صالح	بيتا	1968	انثى	فرعطة	اساسي	ربة منزل
119	معزوزة شفيق شناعة	نابلس	1968	انثى	فرعطة	دبلوم	ربة منزل
120	هدى شفيق سليم شناعة	فرعطة	1963	انثى	فرعطة	اساسي	ربة منزل
121	وداد يوسف طويل	فرعطة	1961	انثى	فرعطة	اساسي	ربة منزل
122	وصال جواد مسعود	طولكرم	1975	انثى	فرعطة	اساسي	ربة منزل
123	يسرى تيسير الطويل	نابلس	1986	انثى	فرعطة	ثانوي	ربة منزل
124	اعتدال احمد ابو صلاح	قلقيلية	1960	انثى	قلقيلية	اساسي	ربة منزل
125	اماني شاكر جعيدي	قلقيلية	1984	انثى	قلقيلية	ثانوي	ربة منزل
126	امل صلاح صبري	قلقيلية	1945	انثى	قلقيلية	اساسي	موظفة
127	امنة احمد محمد بحري	قلقيلية	1964	انثى	قلقيلية	ثانوي	ربة منزل
128	امنة درويش الشنطي	قلقيلية	1965	انثى	قلقيلية	اساسي	ربة منزل
129	امنة محمود دويرة	قلقيلية	1967	انثى	قلقيلية	ثانوي	ربة منزل
130	انتصار محمد الداعور	قلقيلية	1949	انثى	قلقيلية	جامعي	ربة منزل
131	انصاف مصطفى حمدان	قلقيلية	1949	انثى	قلقيلية	دبلوم	موظفة
132	انهار وجية صبري	قلقيلية	1983	انثى	قلقيلية	ثانوي	ربة منزل
133	ايمان سامي صبري	قلقيلية	1960	انثى	قلقيلية	ثانوي	ربة منزل
134	باسمة ابراهيم ياسين	طولكرم	1973	انثى	قلقيلية	ثانوي	ربة منزل
135	باسمة سعيد صبري	قلقيلية	1947	انثى	قلقيلية	دبلوم	استاذ متقاعد
136	بكرية تيسير محمد ياسين	قلقيلية	1975	انثى	قلقيلية	اساسي	ربة منزل
137	تغريد عزمي ناصر جرار	جنين	1979	انثى	قلقيلية	جامعي	موظفة
138	تمام جمال احمد ابورياش	سيناء	1962	انثى	قلقيلية	اساسي	عاملة

الرقم	الاسم	مكان الميلاد	تاريخ الميلاد	الجنس	العنوان مكان السكن	التحصيل العلمي	المهنة
139	تيجان فيصل شكري داود	قلقيلية	1979	انثى	قلقيلية	جامعي	ربة منزل
140	جميلة يوسف محمد قاسمية	طولكرم	1951	انثى	قلقيلية	دبلوم	موظفة
141	حلوه يوسف الشنطي	قلقيلية	1949	انثى	قلقيلية	دبلوم	استاذ متقاعد
142	ختام ابراهيم جاموس	قلقيلية	1945	انثى	قلقيلية	اساسي	ربة منزل
143	خديجة احمد يوسف	قلقيلية	1936	انثى	قلقيلية	اساسي	ربة منزل
144	خولة ابراهيم الشنطي	قلقيلية	1940	انثى	قلقيلية	ثانوي	ربة منزل
145	خولة طلعت جعيدي	قلقيلية	1963	انثى	قلقيلية	اساسي	ربة منزل
146	خيرية محمد الشنطي	قلقيلية	1945	انثى	قلقيلية	دبلوم	استاذ متقاعد
147	رشا محمود مسعود	الكويت	1975	انثى	قلقيلية	جامعي	ربة منزل
148	رنا محمد ابراهيم نوفل	قلقيلية	1979	انثى	قلقيلية	جامعي	ربة منزل
149	رنين زياد زيد	طولكرم	1981	انثى	قلقيلية	ثانوي	ربة منزل
150	روحية مصطفى سمان	قلقيلية	1964	انثى	قلقيلية	دبلوم	موظفة
151	زردة طلعت جعيدي	قلقيلية	1956	انثى	قلقيلية	اساسي	ربة منزل
152	زكية ابراهيم ياسين	قلقيلية	1958	انثى	قلقيلية	اساسي	ربة منزل
153	زهرية ابراهيم ياسين	قلقيلية	1962	انثى	قلقيلية	اساسي	ربة منزل
154	زينة محمد احمد عطاونة	الخليل	1955	انثى	قلقيلية	امي	ربة منزل
155	سجى يوسف العيلة	نابلس	1985	انثى	قلقيلية	اساسي	ربة منزل
156	سلام طلعت داود	قلقيلية	1967	انثى	قلقيلية	ثانوي	ربة منزل
157	سلوى ابراهيم نزال	قلقيلية	1969	انثى	قلقيلية	ثانوي	ربة منزل
158	سميرة يوسف شنطي	قلقيلية	1960	انثى	قلقيلية	ثانوي	ربة منزل
159	سهام عبد الفتاح ابتلي	النبي الياس	1963	انثى	قلقيلية	اساسي	ربة منزل
160	سهام محمد الشنطي	قلقيلية	1935	انثى	قلقيلية	اساسي	ربة منزل
161	صبحية عبد الكريم ياسين	طولكرم	1961	انثى	قلقيلية	اساسي	ربة منزل
162	عدلة عبد العزيز عرباس	قلقيلية	1956	انثى	قلقيلية	اساسسي	ربة منزل
163	عفيفة احمد صبري	قلقيلية	1931	انثى	قلقيلية	امي	ربة منزل
164	علاء ابراهيم حسن مجدلاوي	الاردن	1976	انثى	قلقيلية	اساسي	ربة منزل
165	عماد الدين طالب عكاس	طولكرم	1961	ذكر	قلقيلية	ثانوي	معالج
166	غادة احمد ابراهيم داود	قلقيلية	1967	انثى	قلقيلية	اساسي	ربة منزل
167	غادة عبدالله يوسف درويش	قلقيلية	1969	انثى	قلقيلية	ثانوي	ربة منزل
168	غادة يوسف شاكر جعيدي	السعودية	1973	انثى	قلقيلية	دبلوم	ربة منزل
169	فريال عبد الفتاح صبري	كفر قاسم	1970	انثى	قلقيلية	اساسي	ربة منزل
170	ليلى محمد رشيد ملحم	قلقيلية	1979	انثى	قلقيلية	اساسي	ربة منزل
171	لينا وائل توفيق ياسين	روسيا	1975	انثى	قلقيلية	جامعي	ربة منزل
172	منال خليل صبري	قلقيلية	1966	انثى	قلقيلية	ثانوي	ربة منزل
173	منى عبد الرحمن مصلح نزال	قلقيلية	1959	انثى	قلقيلية	دبلوم	موظفة
174	مها عبدالله شاكر جبارة	قلقيلية	1954	انثى	قلقيلية	دبلوم	موظفة
175	ميسر راتب احمد شري	صير	1959	انثى	قلقيلية	امي	ربة منزل
176	نجية محمد مصلح	قلقيلية	1931	انثى	قلقيلية	امي	ربة منزل
177	نهلة محمد داود	قلقيلية	1954	انثى	قلقيلية	دبلوم	تمريض
178	نهيل عبد الكريم حسين عباه	قلقيلية	1967	انثى	قلقيلية	ثانوي	ربة منزل
179	هناء محمد امين جعيدي	قلقيلية	1974	انثى	قلقيلية	جامعي	موظفة
180	وائل توفيق ابراهيم داود	السعودية	1974	ذكر	قلقيلية	جامعي	موظف
181	وجدان محمد الشنطي	قلقيلية	1949	انثى	قلقيلية	جامعي	موظفة
182	وردة ابراهيم ياسين	قلقيلية	1960	انثى	قلقيلية	اساسي	ربة منزل
183	وصفية ابراهيم ياسين	قلقيلية	1944	انثى	قلقيلية	اساسي	ربة منزل
184	امين محمود ظاهر شواهنة	كفر ثلث	1937	ذكر	كفر ثلث	دبلوم	استاذ متقاعد
185	ايمن امين محمود ظاهر	كفر ثلث	1966	ذكر	كفر ثلث	جامعي	موظف
186	باسمة امين محمود ظاهر	كفر ثلث	1968	انثى	كفرثلث	ثانوي	موظفة

الرقم	الاسم	مكان الميلاد	تاريخ الميلاد	الجنس	العنوان مكان السكن	التحصيل العلمي	المهنة
187	باسمة فايق عودة	طولكرم	1977	انثى	كفر ثلث	اساسي	ربة منزل
188	رشدية ظاهرعبد الله	كفر ثلث	1954	انثى	كفرثلث	اساسي	ربة منزل
189	رنا صبري عرار	نابلس	1972	انثى	كفرثلث	ثانوي	جمعية اهلية
190	زوزو عمر عيسى	كفر ثلث	1965	انثى	كفرثلث	ثانوي	موظفة
191	سحر كمال ظاهر	الكويت	1974	انثى	كفرثلث	ثانوي	ربة منزل
192	عائشة حسين عودة	كفل حارس	1962	انثى	كفر ثلث	ثانوي	معالجة
193	كهرمان احمد ظاهر	كفر ثلث	1968	انثى	كفر ثلث	ثانوي	بلا عمل
194	لينا ظاهر عبدالله	كفر ثلث	1966	انثى	كفر ثلث	ثانوي	ربة منزل
195	لينا فارس عودة	طولكرم	1974	انثى	كفرثلث	ثانوي	ربة منزل
196	مريم محمود شواهنة	وادي رشا	1922	انثى	كفر ثلث	امي	معالجة
197	مها فارس مقبل	كفر ثلث	1961	انثى	كفر ثلث	اساسي	ربة منزل
198	ميساء عبد الله سعادة	طولكرم	1978	انثى	كفر ثلث	اساسي	ربة منزل
199	نعمة سعيد شواهنة	كفر ثلث	1973	انثى	كفر ثلث	اساسي	ربة منزل
200	نهى عبد الله محمد ظاهر	كفر ثلث	1966	انثى	كفر ثلث	اساسي	ربة منزل

Appendix B: Questionnaire

بسم الله الرحمن الرحيم

2007 -2006

المواطن / ة الكريم / ة

يقوم مركز أبحاث التنوع الحيوي والبيئة (بيرك) بتنفيذ مشروع رسالة ماجستير يهدف إلى صون النباتات الطبية والمعرفة التراثية المرتبطة بها وباستخداماتها في الطب الشعبي الفلسطيني في محافظة قلقيلية وأهميتها في الرعاية الصحية الأولية، واستقصاء مدى الضغط الذي تتعرض له جراء ذلك وأهمية المعرفة التراثية في المحافظة عليها.

يرجى من المواطن / ة الكريم / ة المساهمة في حفظ تراث بلادنا من مصادر وراثية وطبية، ومن معرفة تراثية مرتبطة بها وحفظها من الضياع عن طريق تقديم المعلومات التي يطلبها الباحثون الميدانيون الذين يعملون في البحث منكم بحسب الاستبانة المرفقة، مع العلم بأن المعلومات التي تقدمونها سوف تستخدم لأغراض علمية فقط.

شكرا لتعاونكم

أ. الاستباتة العامة: معلومات أولية

1. الاسم:
2. مكان و تاريخ الميلاد:
3. الجنس □ ذكر □ أنثى
4. الحالة الاجتماعية:
5. مكان السكن:
6. رقم الهاتف:
7. التحصيل العلمي: □ أمي □ أساسي □ثانوي □ دبلوم □ جامعي (بكالوريوس, ماجستير, دكتوراه)
8. المهنة: □ ربة بيت □ موظف □ عامل □ تاجر □ بلا عمل
9. عدد أفراد الأسرة: □ ذكور □ إناث
10. الفئات العمرية لأفراد الأسرة:□1-6 سنوات □ 6-12 سنة □ 12-18 سنة □18-24 □30-24 □36-30 □ 42-36 □ 42 فأعلى
11. التحصيل العلمي لأفراد الأسرة □ أمي /ة □ ما قبل المدرسة □ أساسي (1-10) □ ثانوي (11-12) □ دبلوم □ جامعي (بكالوريوس, ماجستير أو دكتوراة)
12. هل يعاني أحد أفراد الأسرة من مرض مزمن واحد أو أكثر (ضغط، سكري، أزمة, صدفية, ...) ؟ □ نعم □ لا

إذا كانت إجابتك نعم / أذكر هذه الأمراض:

.....

.....

13. هل تستخدم النباتات الطبية لعلاج هذه الأمراض؟□نعم □ لا

إذا كانت إجابتك نعم / أذكرها:

.....

.....

14. هل هناك أساليب أخرى تستخدمها في علاج الأمراض؟ □ نعم □ لا

إذا كانت إجابتك نعم, فما هي,

اذكرها:.....

15. هل سبق لك أو أحد أفراد الأسرة زيارة أحد الأطباء الشعبيين لعلاج بعض الأمراض؟□نعم □لا

16. إذا كانت إجابتك بنعم، فمن هو؟.....

وما هو المرض الذي راجعته من أجله؟.....

وما النباتات التي وصفها لك:.....

17. هل تخبر طبيبك عن استخدامك للنباتات الطبية لعلاج بعض الأمراض التي تعاني منها أنت أو أحد أفراد أسرتك؟□ نعم □ لا

18. هل تجد صعوبة في الحصول على النباتات الطبية؟ □ نعم □ لا

ب.الاستباتة العامة*: النباتات / المواد الطبية واستخداماتها

19. من أين تحصل على النباتات والمواد الطبية المستخدمة □ شراء من السوق □ جمع من الطبيعة □ تنتجها بنفسك (زراعة) □ غير ذلك

20. كم يبلغ ثمن (تكلفة) النباتات الطبية التي تستخدمها الأسرة في السنة:

□ أقل من 100 □ 100-500 □ 500-1000 □ 1000-1500 □ > 1500

21. من أين تحصل على الوصفات الطبية الخاصة بطريقة التحضير

□ من الآباء والأجداد □ من الأشخاص الأكبر سنا (الجيران) □ من العطارين □ من المعالجين الشعبيين □ من الكتب الطبية القديمة □ من المجلات والوسائل السمعية والمرئية

22. هل تقوم بعمل خلطات أو تركيبات أو تحضيرات خاصة بك؟

.....

.....

23. ما هي النباتات الطبية الرئيسة التي تستخدمها؟

.....

.....

.....

.....

.....

24. هل يوجد هناك بعض النباتات الطبية التي تستخدمها بشكل دائم ؟ □ نعم □ لا

إذا كانت إجابتك نعم / أذكر هذه النباتات:

.....

.....

.....

.....

25. هل يوجد مواد اخرى غير نباتية تستخدمها في العلاج؟ □ نعم □ لا

اذا كانت اجابتك نعم/ اذكرها

.....

.....

.....

ما هي النباتات والمواد التي تستخدمها لعلاج .....؟

تتم الاستعانة بقائمة الأمراض في الملحق المرفق، وتدون المعلومات التفصيلية لكل نبات على "بطاقة النبات" المرفقة.

.....

.....

أي من هذه النباتات يصعب الحصول عليه في الطبيعة في الوقت الحاضر؟

.....

.....

(* يتكرر هذا السؤال حسب قائمة الامراض)

26. هل هناك نباتات كنت تستخدمها في العلاج في السابق قبل نحو 15 عاما وقد اختفت حاليا من الطبيعة تماما؟

.....

.....

27. إذا أبدت إحدى المؤسسات استعدادا لتزويدك بنباتات طبية ذات نوعية جيدة، فهل كنت تشتريها؟ □ نعم □ لا

أيها أكثر أهمية بالنسبة لك؟

.....

.....

28. هل تشعر بأن استخدام النباتات الطبية لعلاج بعض الأمراض يغنيك في بعض الأحيان وأفراد أسرتك عن زيارة الطبيب؟ (تقدير معدل عدد الزيارات في الشهر التي توفرها الأسرة نتيجة استخدام النباتات الطبية): □ نعم □ لا

عدد الزيارات في الشهر التي توفرها الاسره نتيجه استخدام النباتات الطبية:

□ 2-1 □ 4-3 □ 6-5 □ 8-7 □ > من 9 زيارات

29. هل تفضل استخدام النباتات الطبية على العلاجات المصنعة (الأدوية الكيميائية) □ نعم □ لا

إذا كانت الإجابة بنعم، فلماذا؟ □ اقل خطرا □أكثر جدوى □اقل كلفة □غير ذلك

ت. استبانه المعالج الشعبي *

أولا: معلومات أولية:

1- الاسم:

2- العمر:

3- مكان الولادة:

4. مكان الإقامة:

5. رقم الهاتف:

6.المؤهل العلمي: □ أمي □ أساسي □ ثانوي □ دبلوم □ جامعي التخصص:.....

7.هل تعتمد على مهنة المعالجة كمصدر للدخل؟ □ نعم □ لا

8. إذا كانت إجابتك نعم؟ ما نسبة ما تحصل عليه من المعالجة من نسبة الدخل الكلي؟.....

إذا كانت إجابتك لا؟ ما المهنة التي تمارسها بشكل رئيس؟ .....

9. من أين تحصل على المعلومات المتعلقة بالمعالجة؟

□ من الأباء والأجداد □ من العطارين □ من المعالجين الشعبيين □ من الكتب الطبيـــة القديمـــة □ تأهيـــل أكاديمي □ الوسائل السمعية والمرئية

10.ما عدد سنوات ممارستك لمهنة المعالجة؟

11. هل يمارس (مارس) أحد أفراد عائلتك مهنة المعالجة؟

إذا كانت إجابتك نعم، من هو؟ .....

12. هل تقوم بنقل أو تمرير معلوماتك إلى أي شخص؟ □ نعم □ لا

13. هل يتتلمذ على يديك أحد؟ □ نعم □ لا

14. أين تمارس مهنة المعالجة

15. ماذا تعتقد أنه سيحدث لمهنة المعالجة الشعبية؟.....

ثانيا: المرضى الذين يعالجهم المعالج بالأعشاب

16. عدد المرضى الذين تعالجهم: في الأسبوع (المرضى الجدد):

ذكور ( ) :

الأعمـــــار: أ- (- 15) ... ب- (15-30) ...ت- (30-45)..... ث- (45-60) ... ج- (60-) .....

إناث ( ):

الأعمـــــار: أ- (- 15) ... ب- (15-30) ...ت- (30-45)..... ث- (45-60) ... ج- (60-) .....

17. أماكن الإقامة: : أ- قرية مجاورة ..... ب- مدينة ..... ج- من أماكن بعيدة .....

18. هل يزورون أطباء أيضا لنفس المشكلة؟ □ نعم □ لا

19. إذا كان الجواب نعم، فهل يخبرونهم بأنهم يراجعونكم؟ □ نعم □ لا

20. هل لديك علاقة مهنية بأي طبيب؟ هل يرسلون لك أيا من مرضاهم؟ .....

21. ما هي الأمراض الرئيسة التي يراجعونك من أجلها؟ .....

22. ما هي الأمراض الرئيسة التي يشكو منها السكان في منطقتك؟ .....

23. ما هي الأمراض الرئيسة التي تعتقد أنك تستطيع علاجها بنجاح أكثر من غيرها من الأمراض؟.....

ثالثا: الأعشاب أو النباتات او المواد التي يستعملها في العلاج

24. من أين تحصل على النباتات الطبية؟

المصدر	النسبة المئوية من المجموع الكلي
جمع من الطبيعة	
شراء من السوق: من عطارين من مزارعين	
استيراد من الخارج	
زراعتها	

25.إذا كنت تجمع النباتات، فمن أي منطقة؟ .....

26.كيف تخزن هذه النباتات؟ □مجففة ومحفوظة في أوعية محكمة الإغلاق □ الثلاجة في أوعية زجاجية أو بلاستيكية

27.طول فترة التخزين؟ .....

28.هل تقوم بعمل خلطات أو تركيبات أو تحضيرات خاصة بك؟ □ نعم □ لا

29.هل هناك مواد أخرى تستخدمها في العلاج؟□ نعم □ لا

30.إذا كانت إجابتك نعم أذكرها:

من مصدر معدني:.....

من مصدر حيواني:.....

مواد أخرى:.....

31.ما هي النباتات والمواد الأخرى التي تستخدمها لعلاج .....؟

يتم الاستعانة بقائمة الأمراض في الملحق المرفق، وتدون المعلومات التفصيلية لكل نبات على "بطاقة النبات" المرفقة.

.....

..... أي

من هذه النباتات يصعب الحصول عليه في الطبيعة في الوقت الحاضر؟

.....

.....

32.هل هناك نباتات كنت تستخدمها في العلاج في السابق قبل نحو 15 عاما وقد اختفت حاليا من الطبيعة تماما؟

□نعم □ لا

اذا كانت اجابتك نعم, اذكرها:

.....

33.إذا أبدت إحدى المؤسسات استعدادا لتزويدك بنباتات طبية ذات نوعية جيدة، فهل كنت تشتريها؟

□ نعم □ لا

أيها أكثر أهمية بالنسبة لك؟.....

Appendix C: Tables

Table C.1 Distribution of plant by Scientific Name

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
1.	*Abelmoschus esculantus* L.	Okra, Lady's finger	بامية	Malvaceae	الخبازية	3	2	Digestive system	3	100.0	0.22	22.2
2.	*Alhagi maurorum* Medik.	Alhagi Manna	شرش العاقول	Leguminosae (Papilionaceae)	البقولية	6	2	Urinary system	4	66.7	0.22	14.8
3.	*Allium cepa* L.	Onions	بصل	Liliaceae	الزنبقية	122	11	Skin, burns, and hair	90	73.8	1	73.8
4.	*Allium sativum* L.	Garlic	ثوم	Liliaceae	الزنبقية	148	18	Digestive system	80	54.1	1	54.1
5.	*Ammi visnaga* (L.) Lam.	Tooth Pick	الخلة	Umbelliferae (Apiaceae)	الخيمية	25	2	Urinary system	24	96.0	0.22	21.3
6.	*Amygdalus communis* L.	Almond	لوز	Rosaceae	الوردية	64	5	Digestive system	38	59.4	0.56	33.0
7.	*Anacardium occidentale L.*	Cashew	كاشو	Anacardiaceae	بطمية,المانجية	27	2	Reproductive system	25	92.6	0.22	20.6
8.	*Anethum graveolens* L.	Dill	عين جرادة	Umbelliferae (Apiaceae)	الخيمية	3	3	respiratory /digestive/weight loss	1	33.3	0.33	11.1
9.	*Anisum vulgare* L.	Anise	ينسون	Umbelliferae (Apiaceae)	الخيمية	152	12	Digestive system	121	79.6	1	79.6
10.	*Anthemis palestina* Reuter	Daisy	اقحوان	Compositae(Asteraceae)	المركبة	3	4	Skin, burns, and hair	2	66.7	0.44	29.6
11.	*Arachis hypogaea* L.	Groundnut	فستق	Leguminosae (Papilionaceae)	البقولية	5	1	Digestive system	5	100.0	0.11	11.1
12.	*Artemisia herba- alba* Asso	White Wormwood	الشيح	Compositae(Asteraceae)	المركبة	5	3	Digestive system	3	60.0	0.33	20.0
13.	*Arum palaestinun* Sibth & Sm	Spotted arum	اللوف	Araceae	اللوفية	29	4	Cancer	26	89.7	0.44	39.8
14.	*Boswellia carterii* Birdw.	Olibanum, frankincense tree, Incense	بخور, لبان ذكر	Burseraceae	البخوريات	5	3	Urinary system	3	60.0	0.33	20.0
15.	*Brassica oleracea* L.	Wild cabbage	ملفوف	Cruciferae (Brassicaceae)	الصليبية	30	8	Rheumatism	11	36.7	0.89	32.6

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
16.	*Brassica oleracea* var. botrytis L.	Cauliflower	قرنبيط/زهرة	Cruciferae (Brassicaceae)	الصليبية	20	4	circulatory system	12	60.0	0.44	26.7
17.	*Camellia thea* Link.	Tea	شاي	Theaceae	عائلة الشاي	152	10	Eye diseases	124	81.6	1	81.6
18.	*Capsicum annuum* L.	Sweet Peppers, Chilli	فليفلة	Solanaceae	الباذنجانية	21	4	circulatory system	17	81.0	0.44	36.0
19.	*Carthamus tinctorius* L.	Safflower	عصفر	Compositae(Asteraceae)	المركبة	5	2	circulatory system	3	60.0	0.22	13.3
20.	*Carum carvi* L.	Caraway	كراوية	Umbelliferae (Apiaceae)	الخيمية	14	4	Reproductive system	6	42.9	0.44	19.0
21.	*Cassia senna* L.	Senna	سنمكة	Leguminosae (Papilionaceae)	البقولية	7	2	Digestive system	6	85.7	0.22	19.0
22.	*Ceratonia siliqua* L.	Carob	خروب	Leguminosae (Papilionaceae)	البقولية	127	7	Digestive system	118	92.9	1	92.9
23.	*Cicer arietinum* L.	Chick Pea	حمص	Leguminosae (Papilionaceae)	البقولية	8	2	Digestive system	7	87.5	0.22	19.4
24.	*Cinnamomum zeylanicum* Blume.	Tree Cinnamon	قرفة	Lauraceae	الغارية	76	6	Reproductive system	70	92.1	0.67	61.4
25.	*Citrullus colocynthis* (L.) Schrader	Colocynth	حنظل	Cucurbitaceae	القرعية	9	4	Digestive system	6	66.7	0.44	29.6
26.	*Citrullus lanatus* (Thunb.) Matsun. & Nakai	Watermelon	بطيخ	Cucurbitaceae	القرعية	7	4	Digestive system	3	42.9	0.44	19.0
27.	*Citrus limon* (L.) Burm. Fil	Lime, limon tree	ليمون	Rutaceae	السذابية	171	12	Respiratory system	113	66.1	1	66.1
28.	*Citrus paradisi* Macfad.	Grapefruit	جريبفروت	Rutaceae	السذابية	6	4	Wieght loss	3	50.0	0.44	22.2
29.	*Citrus sinensis* (L.) Osbeck	Orange- tree Sweet	برتقال	Rutaceae	السذابية	18	6	respiratory, scurvy	5	27.8	0.67	18.5
30.	*Coffea arabica* L.	Coffee	قهوة	Rubiaceae	الروبية	138	7	Nervous system	97	70.3	1	70.3
31.	*Corchorus olitorius* L.	Jews Mallow	ملوخية	Tiliaceae	الزيزفونية	7	3	digestive/circulatory	3	42.9	0.33	14.3
32.	*Coriandrum sativum* L.	Coriander	كزبرة	Umbelliferae (Apiaceae)	الخيمية	4	2	circulatory system	3	75.0	0.22	16.7
33.	*Corylus avellana* L.	Hazelnut	بندق	Corylaceae	البندقية	19	1	Reproductive system	19	100.0	0.11	11.1

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
34.	*Crataegus aronia* (L.) Bosc. ex DC.	Spiny Hawthorn	زعرور	Rosaceae	الوردية	55	8	circulatory system	48	87.3	0.89	77.6
35.	*Crocus sativus* L.	Saffron	زعفران	Iridaceae	السوسنية	6	3	circulatory/ nervous/reproductive	2	33.3	0.33	11.1
36.	*Cucumis sativus* L.	Cucumber	خيار	Cucurbitaceae	القرعية	95	9	Digestive system	84	88.4	0.98	86.5
37.	*Cucurbita maxima* L.	Pumpkin	قرع	Cucurbitaceae	القرعية	11	4	Digestive system	8	72.7	0.44	32.3
38.	*Cuminum cyminum* L.	Cumin	كمون	Umbelliferae (Apiaceae)	الخيمية	54	3	Digestive system	49	90.7	0.33	30.2
39.	*Cupressus sempervirens* L.	Cypress	السرو	Cupressaceae	السروية	12	1	Teeth inflammation	12	100.0	0.11	11.1
40.	*Curcuma longa* L.	Turmeric	كركم	Zingiberaceae	الزنجبيلية	3	2	Cancer	2	66.7	0.22	14.8
41.	*Daucus carota* L.	Carrot	جزر	Umbelliferae (Apiaceae)	الخيمية	7	2	Cancer/Diabetes	2	28.6	0.22	6.3
42.	*Dianthus strictus* Banks & Sol.	Wild Pink	القرنفل	Caryophyllaceae	القرنفلية	90	4	Teeth inflammation	90	100.0	0.44	44.4
43.	*Ecballium elaterium* (L.) A. Richard	Squirting cucumber	قثاء الحمار	Cucurbitaceae	القرعية	53	4	Digestive system	46	86.8	0.44	38.6
44.	*Elettaria cardamomum* Maton	Cardamom	هال	Zingiberaceae	الزنجبيلية	5	3	digestive/reproductive	2	40.0	0.33	13.3
45.	*Eruca sativa* Miller	Garden rocket	جرجير	Cruciferae (Brassicaceae)	الصليبية	30	5	Reproductive system	24	80.0	0.56	44.4
46.	*Eucalyptus camaldulensis* Dehn.	Red River Gum	كينا	Myrtaceae	الآسية	16	6	Headache and tempreture	11	68.8	0.67	45.8
47.	*Ficus carica* L.	Fig tree	تين	Moraceae	التوتية	46	5	Skin, burns, and hair	26	56.5	0.56	31.4
48.	*Ficus sycomorus* L.	Sycamore	جميز	Moraceae	التوتية	24	2	Skin, burns, and hair	24	100.0	0.22	22.2
49.	*Foeniculum vulgare* Miller	Fennel	شومر	Umbelliferae (Apiaceae)	الخيمية	20	8	Digestive system	11	55.0	0.89	48.9
50.	*Hibiscus sabdariffa* L.	Roselle	كركدية	Malvaceae	الخبازية	9	2	circulatory system	8	88.9	0.22	19.8
51.	*Hordeum*	Barley	شعير	Gramineae (Poaceae)	النجيلية	69	5	Urinary system	48	69.6	0.56	38.6

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
	vulgare L.											
52.	*Hypericum languinosum* Lam.	Downy St. John's- Wort	عشبة الجرح	Hypericaceae	الهايبركية	6	2	skin, burns, and hair/reproductive	3	50.0	0.22	11.1
53.	*Inula viscosa* (L.) Ait.	Inula	الطيون	Compositae(Asteraceae)	المركبة	11	4	Teeth inflammation	8	72.7	0.44	32.3
54.	*Juglans regia* L.	Wallnut	الجوز البلدي	Juglandaceae	الجوزيات	24	6	Reproductive system	12	50.0	0.67	33.3
55.	*Lactuca sativa* L.	Lettuce	خس	Compositae(Asteraceae)	المركبة	14	6	Digestive system	6	42.9	0.67	28.6
56.	*Lactuca scariola* L. (*L. serriola* L.)	Prickly lettuce, compass plan	خس الحمار	Compositae(Asteraceae)	المركبة	6	2	Skin, burns, and hair	4	66.7	0.22	14.8
57.	*Laurus nobilis* L.	Laurel, Sweet bay	غار	Lauraceae	الغارية	7	4	Reproductive system	3	42.9	0.44	19.0
58.	*Lawsonia inermis* L.	Henna	حناء	Lythraceae	الحنائيات	70	6	Skin, burns, and hair	66	94.3	0.67	62.9
59.	*Lens culinaris* Medikus	Lentils	عدس	Leguminosae (Papilionaceae)	البقولية	64	5	Digestive system	59	92.2	0.56	51.2
60.	*Lepidium sativum* L.	Cress	رشاد	Cruciferae (Brassicaceae)	الصليبية	4	1	Reproductive system	4	100.0	0.11	11.1
61.	*Lupinus albus* L.	White Lupines	ترمس مر	Leguminosae (Papilionaceae)	البقولية	27	8	Diabetes	11	40.7	0.89	36.2
62.	*Lycopersicon esculentum* Mill.	Tomato	بندورة	Solanaceae	الباذنجانية	97	10	Bites, Stings	75	77.3	0.99	76.5
63.	*Majorana syriaca* (L.) Rafin.	Wild thyme, mother of thyme	زعتر	Labiatae	الشفوية	135	12	Respiratory system	99	73.3	1	73.3
64.	*Malva neglecta* Wall.	Common mallow	خبيزة	Malvaceae	الخبازية	16	8	Reproductive system	8	50.0	0.89	44.4
65.	*Matricaria aurea* (L.) Sch. Bip.	Golden cotula	بابونج	Compositae(Asteraceae)	المركبة	136	13	Respiratory system	85	62.5	1	62.5
66.	*Mellisa officinalis* L.	Lemon Balm	ماليسيا	Labiatae (Lamiaceae)	الشفوية	3	3	nervous /cancer/tempreture	1	33.3	0.33	11.1
67.	*Mentha spicata* L.	Peppermint	نعنع	Labiatae	الشفوية	139	11	Digestive system	77	55.4	1	55.4
68.	*Micromeria fruticosa* (L.) Druce	Thyme	زعتر بلاط	Labiatae (Lamiaceae)	الشفوية	33	9	Respiratory system	14	42.4	0.56	23.6
69.	*Micromeria*	Thyme	زعتر ناعم	Labiatae (Lamiaceae)	الشفوية	9	5	Respiratory system	5	55.6	0.56	30.9

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
	nervosa (Desf.)											
70.	*Morus alba* L.	Mulberry	توت	Moraceae	التوتية	5	5	Skin, burns, and hair	1	20.0	0.56	11.1
71.	*Musa sapientum* L.	Banana	موز	Musaceae	الموزية	10	5	Digestive system	4	40.0	0.56	22.2
72.	*Myrtus communis* L.	Common Myrtle	ريحان	Myrtaceae	الآسية	7	5	urinary/teeth	2	28.6	0.56	15.9
73.	*Nigella ciliaris* DC.	Nigella, black cumin	حبة البركة	Ranunculaceae	الشقيقية	90	12	Reproductive system	38	42.2	0.94	39.9
74.	*Olea europaea* L.	Olives	زيتون	Oleaceae	الزيتونية	197	17	Ear diseases	112	56.9	1	56.9
75.	*Opuntia ficus-indica* (L.) Mill.	Prickly- pear	الصبر	Cactaceae	الصباريات	3	1	Skin, burns, and hair	3	100.0	0.11	11.1
76.	*Oryza sativa* L.	Rice	ارز	Gramineae (Poaceae)	النجيلية	33	1	Digestive system	33	100.0	0.11	11.1
77.	*Oxalis pes-caprae*	Wood Sorrel	حمصيص	Oxalidaceae	أقصلييات	4	2	digestive system/ skin	2	50.0	0.22	11.1
78.	*Paronychia argentea* Lam.	Silvery Whitlow- Wart	رجل الحمام	Caryophyllaceae	القرنفلية	13	4	Urinary system	10	76.9	0.44	34.2
79.	*Petroselinum sativum* Hoffm.	Parsley	البقدونس	Umbelliferae (Apiaceae)	الخيمية	124	11	reproductive/urinary	75	60.5	1	60.5
80.	*Phagnalon rupestre* (L.) DC.	African Fleabane, Rock Phagnalon	قديح	Compositae (Asteraceae)	المركبة	4	3	Skin, burns, and hair	2	50.0	0.33	16.7
81.	*Phoenix dactylifera* L.	Date palm	نخيل، تمر	Palmae (Arecaceae)	النخيلية	25	7	digestive/nervous/ reproductive	6	24.0	0.78	18.7
82.	*Pinus halepensis* Mill.	Aleppo Pine	صنوبر	Pinaceae	الصنوبرية	3	2	Reproductive system	2	66.7	0.22	14.8
83.	*Piper nigrum* L.	Pepper Black	فلفل	Piperaceae	الفلفليات	11	3	Reproductive system	5	45.5	0.33	15.2
84.	*Pistacia lentiscus* L.	Lentisk, Mastic tree	السريس	Anacardiaceae	البطمية,المانجية	15	8	Reproductive system	4	26.7	0.89	23.7
85.	*Pistacia paleastina* Boiss.	Palestinian pistachio, Terebinth	بطم	Anacardiaceae	البطمية,المانجية	10	6	Urinary system	6	60.0	0.67	40.0
86.	*Portulaca oleracea* L.	Purslane	رجلة	Portulacaceae	الرجلية	17	5	Skin, burns, and hair	12	70.6	0.56	39.2
87.	*Prunus mahaleb* L. *(Cerasus mahaleb)*	Mahaleb Cherry	محلب	Rosaceae	الوردية	7	3	digestive/ nervous	3	42.9	0.33	14.3
88.	*Psidium guajava* L.	Guava	جوافة	Myrtaceae	الآسية	66	6	Respiratory system	61	92.4	0.67	61.6

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
89.	*Punica granatum* L.	Pomegranate	الرمان	Punicaceae	الرمانية	34	8	Digestive system	16	47.1	0.89	41.8
90.	*Pyrus communis* L.	Pear	اجاص	Rosaceae	الوردية	4	2	Digestive system	4	100.0	0.22	22.2
91.	*Pyrus malus* L.	Apple	تفاح	Rosaceae	الوردية	82	11	Digestive system	32	39.0	0.89	34.7
92.	*Quercus calliprinos* Oecne	Kermes oak	البلوط/ سنديان	Fagaceae	البلوطية	19	8	Digestive system	13	68.4	0.89	60.8
93.	*Raphanus sativus* L.	Radish	فجل	Cruciferae (Brassicaceae)	الصليبية	21	8	Ear diseases	9	42.9	0.89	38.1
94.	*Rhus tripartita* (Ucria)	Syrian sumach	الغيلان	Anacardiaceae	البطمية,المانجية	5	3	Digestive system	3	60.0	0.33	20.0
95.	*Ricinus communis* L.	Castor beans	خروع	Euphorbiaceae	السوسبية	100	6	Digestive system	60	60.0	1	60.0
96.	*Rosa centifolia L*	Provence Rose	ورد جوري	Rosaceae	الوردية	7	2	Digestive system	6	85.7	0.22	19.0
97.	*Rosmarinus officinalis* L.	Rosemary	اكليل الجبل	Labiatae (Lamiaceae)	الشفوية	4	3	Reproductive system	2	50.0	0.33	16.7
98.	*Ruta chalepensis* L.	Rue	السذاب/فيجن	Rutaceae	السذابية	15	6	Digestive system	11	73.3	0.67	48.9
99.	*Salvadora persica* L.	Persian salvadora, Toothbrush tree	سواك	Salvadoraceae	الأراكية	12	1	Teeth inflammation	12	100.0	0.11	11.1
100.	*Salvia fruticosa* Mill.	White sage, Common sage, garden sage	مريمية	Labiatae	الشفوية	196	14	Digestive system	169	86.2	1	86.2
101.	*Sarcopoterium spinosum* (L.) Sp.	Shruppy barnet	ننش	Rosaceae	الوردية	6	2	Diabetes	5	83.3	0.22	18.5
102.	*Sesamum indicum* L.	Sesame	سمسم	Pedaliaceae	السمسمية	112	8	Digestive system	103	92.0	1	92.0
103.	*Solanum melongena* L.	Egg- plant	باذنجان	Solanaceae	الباذنجانية	4	2	Digestive system	3	75.0	0.22	16.7
104.	*Solanum nigrum* L.	Black nightshade	السموه	Solanaceae	الباذنجانية	25	4	Skin, burns, and hair	24	96.0	0.44	42.7
105.	*Solanum*	Potato	بطاطا	Solanaceae	الباذنجانية	77	4	Digestive system	57	74.0	0.44	32.9

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
	tuberosum L.											
106.	*Spinacia oleraceae* L.	Spinach	سبانخ	Convolvulaceae	العلاقية	4	1	circulatory system	4	100.0	0.11	11.1
107.	*Teucrium polium* L.	Cat thyme	الجعدة	Labiatae	الشفوية	56	9	Digestive system	44	78.6	0.71	55.9
108.	*Trigonella foenum-graecum* L.	Fenugreek seed	حلبة	Leguminosae (Papilionaceae)	البقولية	120	10	Reproductive system	74	61.7	1	61.7
109.	*Triticum aestivum* L.	Wheat	قمح/نخالة	Gramineae (Poaceae)	النجيلية	29	7	Skeletal and muscular system	16	55.2	0.78	42.9
110.	*Urginea maritima* (L.) Baker	Squill	بوصلان	Liliaceae	الزنبقية	32	3	Skin, burns, and hair	29	90.6	0.33	30.2
111.	*Urtica pilulifera* L.	Roman Nettle	قريص	Urticaceae	القريصية	25	9	Skin, burns, and hair	10	40.0	0.50	20.0
112.	*Varthemia iphionoides* Boiss & Blanche	Common Varthemia	كتيلة/ صفيرة	Compositae(Asteraceae)	المركبة	4	2	Wieght loss/Digestive system	2	50.0	0.22	11.1
113.	*Vicia faba* L.	Broad bean	فول	Leguminosae (Fabaceae)	البقولية	6	2	Digestive system	4	66.7	0.22	14.8
114.	*Vitis vinifera* L.	Grape	عنب	Vitaceae	الكرمية	22	5	Skin, burns, and hair	12	54.5	0.56	30.3
115.	*Zea mays* L.	Zea, corn	ذرة	Gramineae (Poaceae)	النجيلية	33	6	Digestive system	21	63.6	0.67	42.4
116.	*Zingiber officinale* Roscoe	Ginger	زنجبيل	Zingiberaceae	الزنجبيلية	21	10	respiratory/circulatory/reproductive	7	33.3	0.48	15.9

NIMU: No. of informants who mentioned the plant for any medicinal use, NA: No. of ailments treated by species, NIPU: No. of informants who reported the plant for the primary use

Table C.2 Distribution of medicinal Plants by family name

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
1.	*Pistacia lentiscus* L.	Lentisk, Mastic tree	السريس	Anacardiaceae	البطمية,المانجية	15	8	Reproductive system	4	26.7	0.89	23.7
2.	*Rhus tripartita* (Ucria)	Syrian sumach	الغيلان	Anacardiaceae	البطمية,المانجية	5	3	Digestive system	3	60.0	0.33	20.0
3.	*Pistacia paleastina* Boiss.	Palestinian pistachio, Terebinth	بطم	Anacardiaceae	البطمية,المانجية	10	6	Urinary system	6	60.0	0.67	40.0
4.	*Anacardium occidentale L.*	Cashew	كاشو	Anacardiaceae	بطمية,المانجية	27	2	Reproductive system	25	92.6	0.22	20.6
5.	*Arum palaestinun* Sibth & Sm	Spotted arum	اللوف	Araceae	اللوفية	29	4	Cancer	26	89.7	0.44	39.8
6.	*Boswellia carterii* Birdw.	Olibanum, frankincense tree, Incense	بخور, لبان ذكر	Burseraceae	البخوريات	5	3	Urinary system	3	60.0	0.33	20.0
7.	*Opuntia ficus-indica* (L.) Mill.	Prickly- pear	الصبر	Cactaceae	الصباريات	3	1	Skin, burns, and hair	3	100.0	0.11	11.1
8.	*Dianthus strictus* Banks & Sol.	Wild Pink	القرنفل	Caryophyllaceae	القرنفلية	90	4	Teeth inflammation	90	100.0	0.44	44.4
9.	*Paronychia argentea* Lam.	Silvery Whitlow- Wart	رجل الحمام	Caryophyllaceae	القرنفلية	13	4	Urinary system	10	76.9	0.44	34.2
10.	*Phagnalon rupestre* (L.) DC.	African Fleabane, Rock Phagnalon	قديح	Compositae (Asteraceae)	المركبة	4	3	Skin, burns, and hair	2	50.0	0.33	16.7
11.	*Anthemis palestina* Reuter	Daisy	اقحوان	Compositae (Asteraceae)	المركبة	3	4	Skin, burns, and hair	2	66.7	0.44	29.6
12.	*Artemisia herba- alba* Asso	White Wormwood	الشيح	Compositae (Asteraceae)	المركبة	5	3	Digestive system	3	60.0	0.33	20.0
13.	*Inula viscosa* (L.) Ait.	Inula	الطيون	Compositae (Asteraceae)	المركبة	11	4	Teeth inflammation	8	72.7	0.44	32.3

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
14.	*Matricaria aurea* (L.) Sch. Bip.	Golden cotula	بابونج	Compositae (Asteraceae)	المركبة	136	13	Respiratory system	85	62.5	1	62.5
15.	*Lactuca sativa* L.	Lettuce	خس	Compositae (Asteraceae)	المركبة	14	6	Digestive system	6	42.9	0.67	28.6
16.	*Lactuca scariola* L. (*L. serriola* L.)	Prickly lettuce, compass plan	خس الحمار	Compositae (Asteraceae)	المركبة	6	2	Skin, burns, and hair	4	66.7	0.22	14.8
17.	*Carthamus tinctorius* L.	Safflower	عصفر	Compositae (Asteraceae)	المركبة	5	2	Circulatory system	3	60.0	0.22	13.3
18.	*Varthemia iphionoides* Boiss & Blanche	Common Varthemia	كتيلة/ صفيرة	Compositae(Asteraceae)	المركبة	4	2	Wieght loss/Digestive system	2	50.0	0.22	11.1
19.	*Spinacia oleraceae* L.	Spinach	سبانخ	Convolvulaceae	العلاقية	4	1	Circulatory system	4	100.0	0.11	11.1
20.	*Corylus avellana* L.	Hazelnut	بندق	Corylaceae	البندقية	19	1	Reproductive system	19	100.0	0.11	11.1
21.	*Eruca sativa* Miller	Garden rocket	جرجير	Cruciferae (Brassicaceae)	الصليبية	30	5	Reproductive system	24	80.0	0.56	44.4
22.	*Lepidium sativum* L.	Cress	رشاد	Cruciferae (Brassicaceae)	الصليبية	4	1	Reproductive system	4	100.0	0.11	11.1
23.	*Raphanus sativus* L.	Radish	فجل	Cruciferae (Brassicaceae)	الصليبية	21	8	Ear diseases	9	42.9	0.89	38.1
24.	*Brassica oleracea* var. botrytis L.	Cauliflower	قرنبيط/زهرة	Cruciferae (Brassicaceae)	الصليبية	20	4	Circulatory system	12	60.0	0.44	26.7
25.	*Brassica oleracea* L.	Wild cabbage	ملفوف	Cruciferae (Brassicaceae)	الصليبية	30	8	Rheumatism	11	36.7	0.89	32.6
26.	*Citrullus lanatus* (Thunb.) Matsun. & Nakai	Watermelon	بطيخ	Cucurbitaceae	القرعية	7	4	Digestive system	3	42.9	0.44	19.0
27.	*Citrullus colocynthis* (L.) Schrader	Colocynth	حنظل	Cucurbitaceae	القرعية	9	4	Digestive system	6	66.7	0.44	29.6
28.	*Cucumis sativus* L.	Cucumber	خيار	Cucurbitaceae	القرعية	95	9	Digestive system	84	88.4	0.98	86.5

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
29.	*Ecballium elaterium* (L.) A. Richard	Squirting cucumber	قثاء الحمار	Cucurbitaceae	القرعية	53	4	Digestive system	46	86.8	0.44	38.6
30.	*Cucurbita maxima* L.	Pumpkin	قرع	Cucurbitaceae	القرعية	11	4	Digestive system	8	72.7	0.44	32.3
31.	*Cupressus sempervirens* L.	Cypress	السرو	Cupressaceae	السروية	12	1	Teeth inflammation	12	100.0	0.11	11.1
32.	*Ricinus communis* L.	Castor beans	خروع	Euphorbiaceae	السوسبية	100	6	Digestive system	60	60.0	1	60.0
33.	*Quercus calliprinos* Oecne	Kermes oak	البلوط/ سنديان	Fagaceae	البلوطية	19	8	Digestive system	13	68.4	0.89	60.8
34.	*Oryza sativa* L.	Rice	ارز	Gramineae (Poaceae)	النجيلية	33	1	Digestive system	33	100.0	0.11	11.1
35.	*Zea mays* L.	Zea, corn	ذرة	Gramineae (Poaceae)	النجيلية	33	6	Digestive system	21	63.6	0.67	42.4
36.	*Hordeum vulgare* L.	Barley	شعير	Gramineae (Poaceae)	النجيلية	69	5	Urinary system	48	69.6	0.56	38.6
37.	*Triticum aestivum* L.	Wheat	قمح/نخالة	Gramineae (Poaceae)	النجيلية	29	7	Skeletal and muscular system	16	55.2	0.78	42.9
38.	*Hypericum languinosum* Lam.	Downy St. John's- Wort	عشبة الجرح	Hypericaceae	الهايبركية	6	2	Skin, burns, and hair/reproductive	3	50.0	0.22	11.1
39.	*Crocus sativus* L.	Saffron	زعفران	Iridaceae	السوسنية	6	3	Circulatory/ nervous/reproductive	2	33.3	0.33	11.1
40.	*Juglans regia* L.	Wallnut	الجوز البلدي	Juglandaceae	الجوزيات	24	6	Reproductive system	12	50.0	0.67	33.3
41.	*Teucrium polium* L.	Cat thyme	الجعدة	Labiatae	الشفوية	56	9	Digestive system	44	78.6	0.71	55.9
42.	*Majorana syriaca* (L.) Rafin.	Wild thyme, mother of thyme	زعتر	Labiatae	الشفوية	135	12	Respiratory system	99	73.3	1	73.3
43.	*Salvia fruticosa* Mill.	White sage, Common sage, garden sage	مريمية	Labiatae	الشفوية	196	14	Digestive system	169	86.2	1	86.2
44.	*Mentha spicata* L.	Peppermint	نعنع	Labiatae	الشفوية	139	11	Digestive system	77	55.4	1	55.4
45.	*Rosmarinus officinalis* L.	Rosemary	اكليل الجبل	Labiatae (Lamiaceae)	الشفوية	4	3	Reproductive system	2	50.0	0.33	16.7
46.	*Micromeria fruticosa* (L.) Druce	Thyme	زعتر بلاط	Labiatae (Lamiaceae)	الشفوية	33	9	Respiratory system	14	42.4	0.56	23.6

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
47.	*Micromeria nervosa (Desf.)*	Thyme	زعتر ناعم	Labiatae (Lamiaceae)	الشفوية	9	5	Respiratory system	5	55.6	0.56	30.9
48.	*Mellisa officinalis* L.	Lemon Balm	ماليسيا	Labiatae (Lamiaceae)	الشفوية	3	3	Nervous /cancer/tempreture	1	33.3	0.33	11.1
49.	*Laurus nobilis* L.	Laurel, Sweet bay	غار	Lauraceae	الغارية	7	4	Reproductive system	3	42.9	0.44	19.0
50.	*Cinnamomum zeylanicum* Blume.	Tree Cinnamon	قرفة	Lauraceae	الغارية	76	6	Reproductive system	70	92.1	0.67	61.4
51.	*Vicia faba* L.	Broad bean	فول	Leguminosae (Fabaceae)	البقولية	6	2	Digestive system	4	66.7	0.22	14.8
52.	*Lupinus albus* L.	White Lupines	ترمس مر	Leguminosae (Papilionaceae)	البقولية	27	8	Diabetes	11	40.7	0.89	36.2
53.	*Trigonella foenum-graecum* L.	Fenugreek seed	حلبة	Leguminosae (Papilionaceae)	البقولية	120	10	Reproductive system	74	61.7	1	61.7
54.	*Cicer arietinum* L.	Chick Pea	حمص	Leguminosae (Papilionaceae)	البقولية	8	2	Digestive system	7	87.5	0.22	19.4
55.	*Ceratonia siliqua* L.	Carob	خروب	Leguminosae (Papilionaceae)	البقولية	127	7	Digestive system	118	92.9	1	92.9
56.	*Cassia senna* L.	Senna	سنمكة	Leguminosae (Papilionaceae)	البقولية	7	2	Digestive system	6	85.7	0.22	19.0
57.	*Alhagi maurorum* Medik.	Alhagi Manna	شرش العاقول	Leguminosae (Papilionaceae)	البقولية	6	2	Urinary system	4	66.7	0.22	14.8
58.	*Lens culinaris* Medikus	Lentils	عدس	Leguminosae (Papilionaceae)	البقولية	64	5	Digestive system	59	92.2	0.56	51.2
59.	*Arachis hypogaea* L.	Groundnut	فستق	Leguminosae (Papilionaceae)	البقولية	5	1	Digestive system	5	100.0	0.11	11.1
60.	*Allium cepa* L.	Onions	بصل	Liliaceae	الزنبقية	122	11	Skin, burns, and hair	90	73.8	1	73.8
61.	*Urginea maritima* (L.) Baker	Squill	بوصلان	Liliaceae	الزنبقية	32	3	Skin, burns, and hair	29	90.6	0.33	30.2
62.	*Allium sativum* L.	Garlic	ثوم	Liliaceae	الزنبقية	148	18	Digestive system	80	54.1	1	54.1
63.	*Lawsonia inermis* L.	Henna	حناء	Lythraceae	الحنائيات	70	6	Skin, burns, and hair	66	94.3	0.67	62.9
64.	*Abelmoschus esculantus* L.	Okra, Lady's finger	بامية	Malvaceae	الخبازية	3	2	Digestive system	3	100.0	0.22	22.2

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
65.	*Malva neglecta* Wall.	Common mallow	خبيزة	Malvaceae	الخبازية	16	8	Reproductive system	8	50.0	0.89	44.4
66.	*Hibiscus sabdariffa* L.	Roselle	كركدية	Malvaceae	الخبازية	9	2	Circulatory system	8	88.9	0.22	19.8
67.	*Morus alba* L.	Mulberry	توت	Moraceae	التوتية	5	5	Skin, burns, and hair	1	20.0	0.56	11.1
68.	*Ficus carica* L.	Fig tree	تين	Moraceae	التوتية	46	5	Skin, burns, and hair	26	56.5	0.56	31.4
69.	*Ficus sycomorus* L.	Sycamore	جميز	Moraceae	التوتية	24	2	Skin, burns, and hair	24	100.0	0.22	22.2
70.	*Musa sapientum* L.	Banana	موز	Musaceae	الموزية	10	5	Digestive system	4	40.0	0.56	22.2
71.	*Psidium guajava* L.	Guava	جوافة	Myrtaceae	الآسية	66	6	Respiratory system	61	92.4	0.67	61.6
72.	*Myrtus communis* L.	Common Myrtle	ريحان	Myrtaceae	الآسية	7	5	Urinary/teeth	2	28.6	0.56	15.9
73.	*Eucalyptus camaldulensis* Dehn.	Red River Gum	كينا	Myrtaceae	الآسية	16	6	Headache and tempreture	11	68.8	0.67	45.8
74.	*Olea europaea* L.	Olives	زيتون	Oleaceae	الزيتونية	197	17	Ear diseases	112	56.9	1	56.9
75.	*Oxalis pes-caprae*	Wood Sorrel	حمصيص	Oxalidaceae	أقصلبيات	4	2	Digestive system/ skin	2	50.0	0.22	11.1
76.	*Phoenix dactylifera* L.	Date palm	نخيل، تمر	Palmae (Arecaceae)	النخيلية	25	7	Digestive/nervous/ reproductive	6	24.0	0.78	18.7
77.	*Sesamum indicum* L.	Sesame	سمسم	Pedaliaceae	السمسمية	112	8	Digestive system	103	92.0	1	92.0
78.	*Pinus halepensis* Mill.	Aleppo Pine	صنوبر	Pinaceae	الصنوبرية	3	2	Reproductive system	2	66.7	0.22	14.8
79.	*Piper nigrum* L.	Pepper Black	فلفل	Piperaceae	الفلفليات	11	3	Reproductive system	5	45.5	0.33	15.2
80.	*Portulaca oleracea* L.	Purslane	رجلة	Portulacaceae	الرجلية	17	5	Skin, burns, and hair	12	70.6	0.56	39.2
81.	*Punica granatum* L.	Pomegranate	الرمان	Punicaceae	الرمانية	34	8	Digestive system	16	47.1	0.89	41.8
82.	*Nigella ciliaris* DC.	Nigella, black cumin	حبة البركة	Ranunculaceae	الشقيقية	90	12	Reproductive system	38	42.2	0.94	39.9
83.	*Pyrus communis* L.	Pear	اجاص	Rosaceae	الوردية	4	2	Digestive system	4	100.0	0.22	22.2
84.	*Pyrus malus* L.	Apple	تفاح	Rosaceae	الوردية	82	11	Digestive system	32	39.0	0.89	34.7

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
85.	*Crataegus aronia* (L.) Bosc. ex DC.	Spiny Hawthorn	زعرور	Rosaceae	الوردية	55	8	circulatory system	48	87.3	0.89	77.6
86.	*Amygdalus communis* L.	Almond	لوز	Rosaceae	الوردية	64	5	Digestive system	38	59.4	0.56	33.0
87.	*Prunus mahaleb* L. *(Cerasus mahaleb)*	Mahaleb Cherry	محلب	Rosaceae	الوردية	7	3	Digestive/ nervous	3	42.9	0.33	14.3
88.	*Sarcopoterium spinosum* (L.) Sp.	Shruppy barnet	ننش	Rosaceae	الوردية	6	2	Diabetes	5	83.3	0.22	18.5
89.	*Rosa centifolia L*	Provence Rose	ورد جوري	Rosaceae	الوردية	7	2	Digestive system	6	85.7	0.22	19.0
90.	*Coffea arabica* L.	Coffee	قهوة	Rubiaceae	الروبية	138	7	Nervous system	97	70.3	1	70.3
91.	*Ruta chalepensis* L.	Rue	السذاب/فيجن	Rutaceae	السذابية	15	6	Digestive system	11	73.3	0.67	48.9
92.	*Citrus sinensis* (L.) Osbeck	Orange- tree Sweet	برتقال	Rutaceae	السذابية	18	6	Respiratory, scurvy	5	27.8	0.67	18.5
93.	*Citrus paradisi* Macfad.	Grapefruit	جريبفروت	Rutaceae	السذابية	6	4	Wieght loss	3	50.0	0.44	22.2
94.	*Citrus limon* (L.) Burm. Fil	Lime, limon tree	ليمون	Rutaceae	السذابية	171	12	Respiratory system	113	66.1	1	66.1
95.	*Salvadora persica* L.	Persian salvadora, Toothbrush tree	سواك	Salvadoraceae	الأراكية	12	1	Teeth inflammation	12	100.0	0.11	11.1
96.	*Solanum nigrum* L.	Black nightshade	السموه	Solanaceae	الباذنجانية	25	4	Skin, burns, and hair	24	96.0	0.44	42.7
97.	*Solanum melongena* L.	Egg- plant	باذنجان	Solanaceae	الباذنجانية	4	2	Digestive system	3	75.0	0.22	16.7
98.	*Solanum tuberosum* L.	Potato	بطاطا	Solanaceae	الباذنجانية	77	4	Digestive system	57	74.0	0.44	32.9
99.	*Lycopersicon esculentum* Mill.	Tomato	بندورة	Solanaceae	الباذنجانية	97	10	Bites, Stings	75	77.3	0.99	76.5

No.	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	NIMU*	NA*	primary use	NIPU*	FL	RPL	ROP
100.	*Capsicum annuum* L.	Sweet Peppers, Chilli	فليفلة	Solanaceae	الباذنجانية	21	4	Circulatory system	17	81.0	0.44	36.0
101.	*Camellia thea* Link.	Tea	شاي	Theaceae	عائلة الشاي	152	10	Eye diseases	124	81.6	1	81.6
102.	*Corchorus olitorius* L.	Jews Mallow	ملوخية	Tiliaceae	الزيزفونية	7	3	Digestive/circulatory	3	42.9	0.33	14.3
103.	*Petroselinum sativum* Hoffm.	Parsley	البقدونس	Umbelliferae (Apiaceae)	الخيمية	124	11	Reproductive/urinary	75	60.5	1	60.5
104.	*Ammi visnaga* (L.) Lam.	Tooth Pick	الخلة	Umbelliferae (Apiaceae)	الخيمية	25	2	Urinary system	24	96.0	0.22	21.3
105.	*Daucus carota* L.	Carrot	جزر	Umbelliferae (Apiaceae)	الخيمية	7	2	Cancer/Diabetes	2	28.6	0.22	6.3
106.	*Foeniculum vulgare* Miller	Fennel	شومر	Umbelliferae (Apiaceae)	الخيمية	20	8	Digestive system	11	55.0	0.89	48.9
107.	*Anethum graveolens* L.	Dill	عين جرادة	Umbelliferae (Apiaceae)	الخيمية	3	3	Respiratory /digestive/weight loss	1	33.3	0.33	11.1
108.	*Carum carvi* L.	Caraway	كراوية	Umbelliferae (Apiaceae)	الخيمية	14	4	Reproductive system	6	42.9	0.44	19.0
109.	*Coriandrum sativum* L.	Coriander	كزبرة	Umbelliferae (Apiaceae)	الخيمية	4	2	Circulatory system	3	75.0	0.22	16.7
110.	*Cuminum cyminum* L.	Cumin	كمون	Umbelliferae (Apiaceae)	الخيمية	54	3	Digestive system	49	90.7	0.33	30.2
111.	*Anisum vulgare* L.	Anise	ينسون	Umbelliferae (Apiaceae)	الخيمية	152	12	Digestive system	121	79.6	1	79.6
112.	*Urtica pilulifera* L.	Roman Nettle	قريص	Urticaceae	القريصية	25	9	Skin, burns, and hair	10	40.0	0.50	20.0
113.	*Vitis vinifera* L.	Grape	عنب	Vitaceae	الكرمية	22	5	Skin, burns, and hair	12	54.5	0.56	30.3
114.	*Zingiber officinale* Roscoe	Ginger	زنجبيل	Zingiberaceae	الزنجبيلية	21	10	Respiratory/circulatory/reproductive	7	33.3	0.48	15.9
115.	*Curcuma longa* L.	Turmeric	كركم	Zingiberaceae	الزنجبيلية	3	2	Cancer	2	66.7	0.22	14.8
116.	*Elettaria cardamomum* Maton	Cardamom	هال	Zingiberaceae	الزنجبيلية	5	3	Digestive/reproductive	2	40.0	0.33	13.3

NIMU: No. of informants who mentioned the plant for any medicinal use, NA: No. of ailments treated by species, NIPU: No. of informants who reported the plant for the primary use

Table C.3 The 27 plants which reported by less than 3 informants

.No	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	*NIMU	*NA	Primary use	*NIPU
1	*Eriobotria japonica* L.	Medlar tree	اسكدنيا	Rosaceae	الوردية	2	3	Skin, burns, and hair	1
2	*Sedum microcarpum* (Sm.) Schnol.	Sedum	حي علم	Crassulaceae	المخلدات	2	1	Skin, burns, and hair	2
3	*Plumbago europea L.*	Khamsheh	خامشة	Plumbaginaceae	الرصاصية	2	1	Skin, burns, and hair	2
4	*Anemone coronaria* L.	Common Anemone	شقائق النعمان	Ranunculaceae	الشقيقية	2	1	Respiratory system	2
5	*Juniperus oxycedrus* L.	Juniper Prickly	عرعر	Cupressaceae	السروية	2	1	Rheumatism	2
6	*Pelargonium odoratissimum* (L.) L'He'r	Geranium	عطرية	Geraniaceae	العطرية	2	1	Headache and tempreture	2
7	*Clematis cirrhosa* L.	Evergreen virgin's- power	غاشية	Ranunculaceae	الشقيقية	2	2	Rheumatism	2
8	*Eucalyptus bicolor* (A.) Cunn.	Eucalyptus	كافور	Myrtaceae	الآسية	2	1	Rheumatism	2
9	*Capparis spinosa* L.	Caper bush, Egyptian caper	كبار	Capparodaceae	الكبارية	2	1	Digestive system	2
10	*Mangifera indica* L.	Mango tree	مانجا	Anacardiaceae	البطمية,المانجية	2	1	circulatory system	2
11	*Cynara scolymus* L.	Artichoke	خرشوف	Compositae(Asteraceae)	المركبة	1	1	Diabetes	1
12	*Salix acmophylla* Boiss.	Willow	الصفصاف	Salicaceae	الصفصافية	1	1	Rheumatism	1
13	*Anchusa strigosa* Banks& Sol.	Prickly Alkanet	حمحم/ لسان الثور	Boraginaceae	الكحلية, البوراجية, لسان الثور	1	1	Rheumatism	1
14	*Coridothymus capitatus* (L.) Reichb.	Capitate Thyme	زعتر فارسي	Labiatae	الشفوية	1	1	Respiratory system	1
15	*Cydonia vulgaris* Pers.	Quince- tree	سفرجل	Rosaceae	الوردية	1	1	Reproductive system	1
16	*Avena sativa* L.	Oats	شوفان	Gramineae (Poaceae)	النجيلية	1	1	Nervous system	1
17	*Glycyrrhiza glabra* L.	Liquorice	عرق السوس	Leguminosae (Fabaceae)	البقولية	1	1	Digestive system	1
18	*Cichorium pumilum* Jacq.	Dwarf chicory	علك/هندباء	Compositae(Asteraceae)	المركبة	1	1	Digestive system	1
19	*Ziziphus sativa* Gaetn.	Jujube	عناب	Rhamnaceae	النبقية, العنابية	1	1	Respiratory system	1
20	*Verbascum galilaeum* BOISS	Mullein	عورور,عمية	Scrophulariaceae	الفم سمكية	1	2	Digestive system	1
21	*Eryngium creticum* Lam.	Snake root	قرصعنة	Umbelliferae (Apiaceae)	الخيمية	1	1	Bites, Stings	1

.No	Scientific Name	English Name	Arabic Name	FAMILY Name	العائلة النباتية	*NIMU	*NA	Primary use	*NIPU
22	*Achillea fragrantissima* Forssk. Sch. Bip.	Lavender cotton	قيسوم	Asteraceae	المركبة	1	1	Reproductive system	1
23	*Linum maritimum* Banks & Sol.	Flax	كتان	Linaceae	الكتانية	1	1	Heart disease	1
24	*Cucurbita pepo* L.	Marrow	كوسا	Cucurbitaceae	القرعية	1	1	Digestive system	1
25	*Lavandula angustifolia* Mill.	Lavender	خزامي	Lamiaceae		1	1	Skin, burns, and hair	1
26	*Vicia ervilia* L.	Lentil Vetch	كرسنة	Papilionaceae (Leguminosae)	الفراشية	0	0	keep evil away	0
27	*Cucurbita pepo* L. *var. melpepo*	Pumpkin, Vegetable Marrow	يقطين	Cucurbitaceae	القرعية	0	0	for insects	0

NIMU: No. of informants who mentioned the plant for any medicinal use, NA: No. of ailments treated by species, NIPU: No. of informants who reported the plant for the primary use

Appendix D: Photograph of some plants, traditional tools, and some interviews

Figure D.1 *Salvia fruticosa* Mill.

Figure D.2 *Olea europaea* L.

Figure D.3 *Salvadora persica* L.

Figure D.4 *Ficus carica* L.

Figure D.5 *Matricaria aurea* L.

Figure D.6 *Allium cepa* L.

Figure D.7 *Paronychia argentea*

Figure D.8 *Solanum nigrum*

Figure D.9 Some traditional tools used for preparation of medicinal plants therapies

Figure D. 10 Author collecting information about medicinal plants

Appendix F: Description of some common plants

F.1 *Ceratonia siliqua* L., Figure 3.7 (1)

Latin Name (Family Name): *Ceratonia siliqua* L. (Leguminoseae)

English Name: Carob.

Arabic Name: خروب

Carob plant is green trees, ten meter high, have a dark brown fruit pods which is usually used in treatment. It is usually eaten and used as a part of stock feed in the region. About 70% of its contents are sugar, lipids, proteins, vitamins, and starch; and the rest 30% xylem tissue.

Parts used: fruits

Fruits are usually crushed, soaking in warm water for at least 8 hrs. After that extracts filtered and boiled for approximately 4 hrs. Filtrate then stored it in closed bottles at room temperature till use.

Medicinal use: Mouth and gum inflammation, Jaundice, iron deficiency anemia, cough, digestive system problems, and diarrhea. The ROP value was 92.9.

Forms of use (in home): Filtrate mixed with milk and nuts and the preparation is known for the locals as (Mahalabeya). The filtrate can also be used to prepare syrup by adding small amounts of water depending on taste.

Mode of preparation: -Smear the mouth and gum with fruits syrup three times/ day as needed.

- One cup of fruits syrup is taken orally, 2-3 times/ day as needed.

F.2 *Allium cepa* L**.,** Figure D.6

Latin Name (Family Name): *Allium cepa* L**.** (Liliaceae)

English Name: Onion.

Arabic Name: بصل

Allium cepa is known only in cultivation, but related wild species occur in Central Asia. Onions are available in fresh, frozen, canned, pickled, and dehydrated forms. Onions can be used, usually chopped or sliced, in almost every type of food, including cooked foods and fresh salads, and as a spicy garnish; they are rarely eaten on their own but usually act as accompaniment to the main course. Depending on the variety, an onion can be sharp, spicy, tangy and pungent or mild and sweet.

Parts used: Bulb

Medicinal use: ROP value was 73.8, used to treat skin related problems such as burns and hair, sexual weakness, hypnotic, Furuncles. Onion reported to have anticarcinogenic and antitumorigenic properties (Milner, 1996; Fkyushima *et al*., 1997; Challier *et al*., 1998; Munday and Munday, 1999; Siegers *et al*., 1999). Their anti-proliferative effect was attributed to several factors including induction of tissue activities of phase II enzymes (quinone reductase and glutathione transferase; Munday and Munday, 1999) and improvement of the activation of natural killer cells, the function of T-lymphocytes, and the level of interleukin-2 (Tang *et al*., 1997).

Mode of preparation: Eat uncooked bulb with meals. Bulb can also grilled and placed on the furuncle for 4 hrs. repeat until improvement occurs.

F.3 *Sesamum indicum* **L.,** Figure 3.7 (8).

Latin Name (Family Name): *Sesamum indicum* L. (Pedaliaceae)

English Name: Sesame.

Arabic Name: سمسم

Parts use: Seeds (oil)

Medicinal used: - Respiratory system, burns.

- Digestive system

Mode of preparation: Smear the oil on back and chest, and eat small spoon of oil, and poultice on burned area. Smear the mouth with Tahini for gum inflammation

F.4 *Solanum nigrum* L. , Figure D.8

Latin Name (Family Name): *Solanum nigrum* L.(Solanaceae)

English Name: Black nightshade.

Arabic Name: سموة

Parts use: Foliage

Medicinal used: Skin diseases, furuncle, bees and scorpion sting.

Mode of preparation: Grind fresh leaves and place on infected area.

F.5 *Teucrium polium* L., Figure 3.7 (3).

Latin Name (Family Name): *Teucrium polium L* (Labiatae)

English Name: Cat thyme

Arabic Name: جعدة

Parts use: Foliage

Medicinal used: Stomach ache, colic, Diabetes, weight loss.

Mode of preparation: - A decoction of 50g plants material in 1 L of water is prepared and taken orally, once daily.

F.6 *Salvia fruticosa* Mill., Figure D.1

Latin Name (Family Name): *Salvia fruticosa Mill*. (Labiatae*)*

English Name: Sage.

Arabic Name: مريمية

Parts use: Leaves

Medicinal used: - stomachache, intestinal gas, and period pain.

- Toothache, - wound bleeding, - Diabetes.

Mode of preparation: - An infusion is prepared from 50 g in 1 L water and taken orally, 1-2 times/ day.

- make a decoction of leaves and some salt, rinse the mouth or chew the green leaves.

- grind leaves and place on the wounds to stop bleeding.

- A decoction of 100g plants material in 1 L water is prepared and taken orally, once daily.

F.7 *Paronychia argentea* Lam., Figure D.7

Latin Name (Family Name): *Paronychia argentea* Lam.
(Caryophyllaceae)

English Name: Silvery Whitlow- Wart.

Arabic Name: رجل الحمام

Parts use: Leaf and flower

Medicinal used: Stones in kidney, urinary system, sexual weakness.

Mode of preparation: A decoction is prepared and taken internally, three times/ day.

F.8 *Olea europaea* L., Figure D.2

Latin Name (Family Name): *Olea europaea* L. (Oleaceae)

English Name: Olives.

Arabic Name: زيتون

Parts use: Fruits and leaves

Medicinal used: - Coughing.

- Diabetes, high blood pressure.

- Stones in kidney.

Mode of preparation: - Oil is rubbed on the chest to relief coughing.

- Leaf decoction are taken orally

- Drink cup of oil in the morning until improvements are seen for stones.

F.9 *Nigella ciliaris* DC., Figure 3.7 (7).

Latin Name (Family Name): *Nigella ciliaris* DC. (Ranunculaceae)

English Name: Nigella

Arabic Name: الحبة السوداء (قزحة)

Parts use: Seeds

Medicinal used: Heart diseases, blood pressure, and sexual weakness.

- Muscle contraction, bone pain.

Mode of preparation: - Grinding the seeds and mix with honey and eat twice daily.

- To smear of oil on effected area.

F.10 *Matricaria aurea* (L.) Sch. Bip. , Figure D.5

Latin Name (Family Name): *Matricaria aurea* (L.) Sch. Bip. (Compositae)

English Name: Golden cotula**.**

Arabic Name: بابونج

Parts use: Leaves, flowers

Medicinal used: - respiratory diseases, intestinal pain, toothache, nerve system, urinary system

`- Eye inflammation and eczema

Mode of preparation: - a decoction of plants material is prepared and taken orally twice daily. Decoction is then used as steam bath.

- making poultice from boiled plant material.

جامعة النجاح الوطنية
كلية الدراسات العليا

دراسات في النباتات المستخدمة في الطب الشعبي الفلسطيني في محافظة قلقيلية

إعداد
رائدة توفيق إبراهيم داود

إشراف
أ. د. محمد سليم اشتية

قدمت هذه الأطروحة استكمالا لمتطلبات درجة الماجستير في العلوم البيئية بكلية الدراسات العليا في جامعة النجاح الوطنية في نابلس، فلسطين.

2008

دراسات في النباتات المستخدمة في الطب الشعبي الفلسطيني في محافظة قلقيلية

إعداد
رائدة توفيق إبراهيم داود

اشراف
أ. د. محمد سليم أشتية

الملخص

هدفت الدراسة الحالية لمسح النباتات الطبية في محافظة قلقيلية في شمال فلسطين . أجريت الدراسة ما بين كانون الثاني للعام 2006 وحتى شهر ابريل من العام 2007. وهدفت الدراسة تقييم الوضع الحالي للطب العربي الفلسطيني التقليدي في هذه المنطقة وبالتحديد دراسة النباتات المستخدمة حاليا واستخداماتها الطبية ومدى فعاليتها العلاجية. استخدم استبيانات أعدت خصيصا لهذا الغرض وكان عدد المشاركين 200 شخص (174 أنثى, 26 ذكر), وكان من بين المشاركين ثلاثة من المعالجين في حين كان الآخرون هم من العامة. بلغ عدد النباتات المستخدمة في المنطقة 116 نبتة مختلفة استخدمت لعلاج 62 حالة مرضية مختلفة. ووزعت النباتات على 46 عائلة نباتية, و 103 أنواع. تم تحديد مدى شعبية هذه النباتات وأولوياتها, وبناءا على مستوى الثقة (Fidelity level) كانت النباتات التالية هي من أكثر النباتات استخداما:

Dianthus strictus Banks & Sol., *Ficus sycomorus* L., *Pyrus communis* L., *Abelmoschus esculantus* L., *Oryza sativa* L., *Corylus avellana* L., *Cupressus sempervirens* L., *Salvadora persica* L., *Arachis hypogea* L., *Lepidium sativum* L., *Spinacia oleraceae* L., and *Opuntia ficus- indica* (L.)

وبناءا على درجات ترتيبها حسب الاولويات (RPL) اعتبرت النباتات التالية على انها الاكثر شيوعا.

Allium cepa L., *Allium sativum* L., *Anisum vulgare* L., *Camellia thea* Link., *Ceratonia siliqua* L., *Citrus limon* (L.) Burm. Fil, *Coffea arabica* L., *Majorana syriaca* (L.) Rafin., *Matricaria aurea* (L.) Sch. Bip., *Mentha spicata* L., *Olea europaea* L., *Petroselinum sativum* Hoffm., *Ricinus communis* L., *Salvia fruticosa* Mill., *Sesamum indicum* L., and *Trigonella foenum- graecum* L.

في حين اعتبرت النباتات التالية وبناءا على قيم (ROP) وكذلك اولويات استخدامها على انها الاكثر استخداما وكفاءة.

Ceratonia siliqua L. (ROP= 92.9), *Sesamum indicum* L. (92), *Cucumis sativus* L. (85.6), *Salvia fruticosa* Mill. (86.2), *Camellia thea* Link.(81.6), *Anisum vulgare* L. (79.6), *Lycopersicon esculentum* Mill. (75.7), *Teucrium polium* L. (75.2), *Crataegus aronia* (L.) Bosc. ex DC. (74.3), *Allium cepa* L. (73.8), *Majorana syriaca* (L.) Rafin. (73.3), and *Coffea arabica* L. (70.3).

وبينت الدراسة أن الأوراق النباتية هي أكثر الأجزاء استخداما وشكلت ما نسبته 38.8%, تلي ذلك استخدام الثمار وشكلت 25%, في حين كانت البذور في المرتبة الثالثة وشكلت 24.1%.

وكانت غالبية الوصفات موجهة لعلاج المشكلات الصحية المتعلقة بالجهاز الهضمي (97 نبتة, 83.6%), تليها مشكلات متعلقة بالجلد ومشاكله الصحية (77 نبتة, 66.4%), يلي ذلك وصفات لمعالجة الجهاز التناسلي (86 نبتة, 58.6%). بالاعتماد على عدد الوصفات والنباتات المستخدمة يمكن تحديد المشاكل الصحية والتي يعاني منها سكان المنطقة والتي ذكرت سابقا حسب أولويات حدوثها. بينت الدراسة كذلك استخدام 15 مادة علاجية أخرى اشتقت من أصول

حيوانية ومعدنية, وعضوية, وفطرية مختلفة استخدمت بشكل مستقل او ممزوجة بمستحضرات نباتية.

نعتقد ان المنطقة غنية بالنباتات الطبية وتحتاج الى دراسات مستقبلية أخرى يمكن لها ان تساعد في الحفاظ على هذه الثروة النباتية والمعرفية المتعلقة بهذه النباتات.