Comparative ethnobotanical study in the North-East region of Morocco (Al Hoceima, Nador, and Jerada). Local ethnobotanical knowledge of Amazigh and Arabized provinces

Halima Smaili, Fatima-Zahra Mir and Abderrahmane Merzouki

Correspondence

Halima Smaili[1*], Fatima-Zahra Mir[1] and Abderrahmane Merzouki[1,2]

[1]Laboratory of Applied Botany, Department of Biology, Faculty of Sciences, University Abdelmalek Essaâdi,Mhanneh II Tetouan, 93000 Morocco
[2]Cann-Med & Badiya Crops Consulting Sarl, Tangier, 90030 Morocco

*Corresponding Author: halima34ecologie@outlook.fr

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Research

Abstract

Background: This study aims to compare the information recorded in the three provinces of Jerada, Nador, and Al Hoceima in the Northeastern part of Morocco, in order to evaluate variability of medicinal plant knowledge in these provinces.

Methods: All the data were gathered through conducting open-ended semi-structured interviews with randomly selected individuals between 2017 and 2019. The study targeted people belonging to a specific ethnic category: The Berber tribes Aït Waryaghel in the province of Al Hoceima, the tribes Guelaya in the province of Nador, and the Arabs in the province of Jerada.

Results: Information on 241 taxa were collected through ethnobotanical surveys conducted with a total of 1,177 persons across the three targeted provinces. In Jerada, 200 taxa were documented based on responses from 380 participants, of which 52% were women. In Al Hoceima, 179 taxa were identified through interactions with 410 persons, with 68% being men, while in Nador 131 taxa were recorded from interviews with 387 interviewees, with 53% being women. The analysis of the results revealed a total of 790 medicinal uses recorded across the provinces: 232 in the province of Al Hoceima, 172 in the province of Nador, and 386 therapeutic uses in the province of Jerada. Additionally, 474 other uses were recorded, with 166 in the province of Al Hoceima, 120 in the province of Nador, and 188 in the province of Jerada.

Conclusions: Ethnicity indeed has an important role in the common knowledge of the population; it is even one of the imposing factors that forge it, making the comparison between different regions necessary in order to promote an adequate strategy to preserve biodiversity in a given region.

Keywords: Ethnobotanical knowledge, Ethnicity, Medicinal plants, North-East Morocco.

Background

Humans have been utilizing wild plants for basic necessities since ancient times (Cragg & Newman 2005, Hill 1952, Prance & Nesbitt 2004), to fulfill their various needs such as food, medicine, fuel and others (Harlan 1975, Heywood 1999). Indeed, plants are an integral part of human societies and are often used to promote well-being (Xiong *et al*. 2020), although, the use of these plants varies according to community beliefs and customs (Kathambi *et al*. 2020) and the way wild plants are used may also differ from region to region.

The use of plants for culinary and medicinal purposes has been an integral part of Mediterranean folk traditions (Hadjichambis *et al*. 2008). Morocco, located in the Mediterranean region, is known for its diverse and rich vegetation, comprising over 500 species of natural aromatic and medicinal plants; about 12% of the country's total flora (Fennane & Rejdali 2016). Ethnobotany, the study of human-plant relationships in all its complexity (Heinrich 2014), which groups the sum of knowledge required for human survival (Bennett 2005, Smith 1995) and the discovery of new medicines (Atanasov *et al*. 2021, Leonti *et al*. 2015, Nguanchoo *et al.* 2023, Tu 2011), is a key approach to understanding traditional knowledge in the region. This approach explores the relationship between plant diversity and cultural diversity, as well as the ways in which different cultures perceive, use and manage plants (Albuquerque & Hanazaki 2009). Despite the advancements in modern medicine, the use of plants is still prevalent today (Alqethami *et al*. 2017) in Morocco and other Mediterranean countries. It is an integral part of life in many indigenous communities (Bussmann *et al*. 2006).

In addition, traditional medicine in Morocco is influenced by the diverse cultural groups present in the country, such as the Amazigh, Arabs, and sub-Saharan African (El-Ghazouani *et al*. 2021) as well as religious influences as Islam and Judaism (El-Hilaly *et al*. 2003). These cultural and religious influences shape the traditional medicinal practices and the use of plants in the country, making the ethnobotanical knowledge unique. This knowledge is defined as the set of practices, traditions, beliefs, and knowledge developed and maintained by the local population towards their physical environment (Berkes *et al*. 2000, Gómez-Baggethun *et al*. 2010, Reyes-García *et al*. 2013), is passed down from generation to generation (Abouri *et al*. 2012, Beltrán-Rodríguez *et al*. 2014, Berkes 1999, Eoin 2016, Hassanein 1999, Ugulu *et al*. 2009), and is usually acquired through an empirical process (Nuraeni *et al*. 2022). Despite the fact that it is not always preserved (Addo-Fordjour *et al*. 2008, 2012), the local traditional pharmacopeia continues to play a significant role as a source of remedies for primary healthcare in the country (Merzouki *et al*. 2000). This is in line with the estimation of the World Health Organization (WHO) that 80% of the world's population relies on traditional medicine for their primary health care needs (Andrade-Cetto 2009, Mbuni *et al*. 2020, Mesfin *et al*. 2013, Muthu *et al.* 2006, WHO 2002, 2015, 2018). The use of Traditional Medicine is widespread and is becoming increasingly economically significant (Bussmann & Paniagua-Zambrana, 2022).

This paper specifically focuses on realizing a comparative study of the results gathered during an ethnobotanical survey (vernacular names, traditional uses, methods of preparation and administration, as well as plant parts used, based on local knowledge) in the three provinces of Jerada, Nador, and Al Hoceima, which are known for their abundant vegetation and cultural heritage, particularly the Amazigh (Berber) culture. Jerada is an Arabized province, known for its coal mines, while Nador and Al Hoceima are known for their coastal location and fishing industry. By comparing the data collected from these provinces, our aim is to determine which province possesses greater ethnobotanical knowledge, hypothesizing that the diversity of ethnic and economic backgrounds influences this knowledge. This study tries to answer the research question: How does ethnobotanical knowledge differ among the three provinces, considering their unique characteristics? This will enable us to gain a comprehensive understanding of the traditional use of plants and identify any existing trends or disparities.

Materials and Methods

Study area

During the years 2017 to 2019, we conducted our ethnobotanical surveys in three provinces in the Northeast of Morocco: Al Hoceima, Nador, and Jerada. Al Hoceima is part of the Tangier-Tetouan-Al Hoceima region, while Nador and Jerada a part of the Oriental region, representing 2 out of 12 regions of Morocco according to the territorial division of 2015 (HCP 2016). The strategic location of the Rif between the Atlantic Ocean and the Mediterranean Sea gives it a climatic originality; add to that the regional topography and geological diversity, which favor an immense ecological wealth (Benabid 1983).

According to the Köppen-Geiger classification (Hadria *et al*. 2019, Kottek *et al*. 2006, Rubel & Kottek 2010), the climate in the provinces of Al Hoceima and Nador is classified as temperate hot-summer dry-summer-hot (code Csa). Al Hoceima has a temperate Mediterranean climate with wet winters and dry summers (HCP 2017a), while Nador with low rainfall and

temperature fluctuations (HCP 2017b). Province of Jerada's climate is arid-steppe-cold arid (code Bsk), with irregular annual precipitation and minimum temperature (Barkaoui et al. 2016).

The province of Al Hoceima is located in the central part of the Rif chain (Mchiouer *et al*. 2022) and covers 29% of the natural forests in the Tanger-Tetoun-Al Hoceima region (HCP 2020). It is divided into two main geographic entities: the mountainous region and the Mediterranean coastline, which are known for their numerous small islands and rocky islets, as well as their magnificent Mediterranean beaches offering a remarkable range of habitats and ecosystems (Chaachouay *et al.* 2020), is characterized mostly by a slope ranging from 10% to 40% and 12,000 ha of plains (HCP 2017a).

Fieldwork stations (Geolocation) in Al Hoceima province with Berber tribes of Aït Waryaghel (Figure 1):

- Al Hoceima city (35°14'42.41"N 3°55'48.668"W)
- Ajdir (35°12'13.752"N 3°54'47.617"W)
- Boukidane (35°10'26.036"N 3°50'31.52"W)
- Imzouren (35°8'36.2"N 3°50'52.072"W)
- Tamassint (35°4'10.79"N 3°57'3.614"W)
- Souani (35°11'56.9"N 3°52'2.654"W).

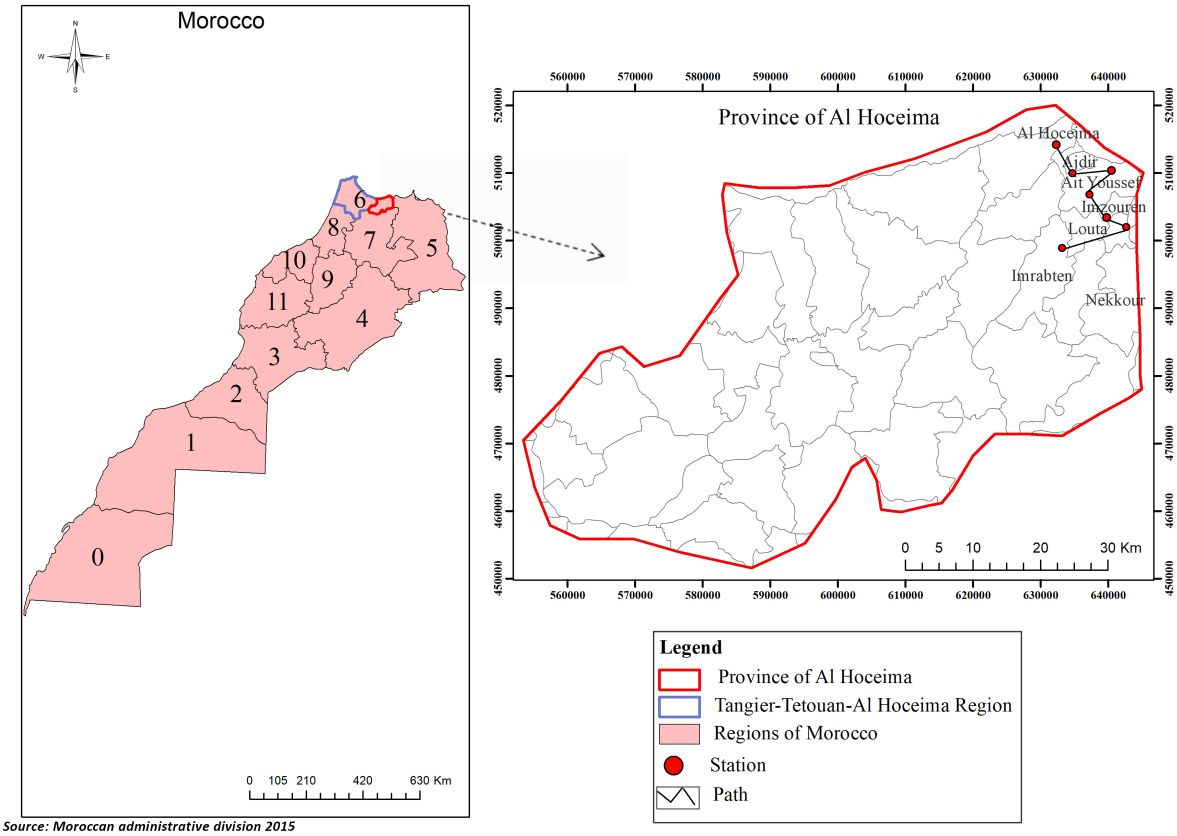

Figure 1. Location map of Al Hoceima Province.

The province of Nador is renowned for its rich biodiversity and varied landscapes that encompass coastal beaches (HCP 2015) and it's dominated by the mountain, followed by the plain, and finally, the plateau (HCP 2017b). It has a coastline of 153 km and covers an area of 3,221 km^2, or 3.6% of the total area of the Oriental region (90,130 km^2). Nador has a remarkable floral richness concentrated mainly in the two areas of the lagoon and Mount Gourougou, offering diverse vegetation.

Fieldwork stations (Geolocation) in Nador province with Berber tribes of Guelaya (Figure 2):

- Nador city (35°10'2.082"N 2°56'1.456"W)
- Bourag (35°6'33.095"N 2°52'33.98"W)
- Segangan (35°9'30.157"N 2°59'58.621"W)
- Beni Ensar (35°15'55.951"N 2°56'3.353"W).

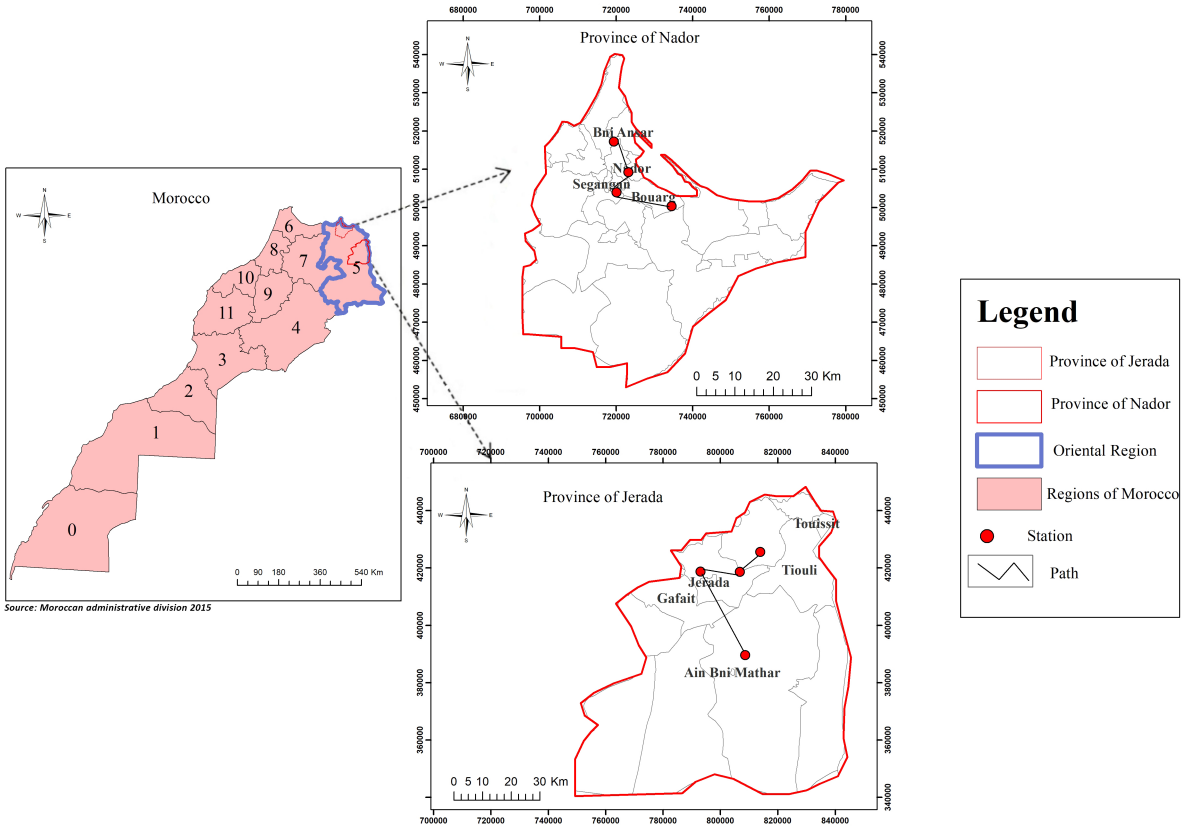

Figure 2. Location map of Nador & Jerada Provinces.

Jerada is a province known for its coal mines, which have been the main source of income for the local population, including its Arabized population. The province's diverse landscape includes mountains, oases, high plateaus, and natural forests (HCP 2021). The vegetation zone is adapted to the arid Mediterranean climate, and it's known to concentrate 13% of the rosemary resources in the Oriental region. (HCP 2021).

Fieldwork stations (Geolocation) in Jerada province (Figure 2):

- Jerada (34°18'34.643"N 2°10'50.901"W)
- Aïn Beni Mathar (34°0'54.05"N 2°1'47.225"W)
- Chekhar (34°20'27.175"N 2°4'29.622"W)
- With the inhabitants living in the vicinity of Jerada "The Road to Jerada" (34°19'56.489"N 2°5'45.999"W).

Informant characteristics

To obtain meaningful results, the sample size must first be calculated using the following formula (Del Águila & González-Ramírez, 2014), suitable for infinite populations since the sample size does not change significantly for populations larger than 20.000, resulting in a sample size of 384:

$$Sample\ size = \frac{z^2 \times p(1-p)}{e^2}$$

The "e" is the margin of error (we chose 5%); z is Z-score (1,96 for a 95% confidence level); p is the proportion (if it's not known we take 0,5). The criteria for informant validity were based on ethnicity, so any foreigners in the area were excluded. The combination of local interviewees and a large number of surveyed people is an excellent strategy for recording the maximum amount of information (Paniagua-Zambrana *et al*. 2018).

Ethnobotanical approach and surveys

The approach used in this ethnobotanical study was based on the work of our research group (El-Gharbaoui *et al*. 2017, Merzouki *et al*. 1997, 2000, Redouan *et al*. 2020, Yebouk *et al*. 2020), which took into consideration the recommended

standards for ethnopharmacological field studies (Weckerle *et al*. 2018). The first step was selecting taxa that exist in Morocco and mentioned in Ibn Al Baytar's book "Al Jam' li-Mufradat al-Adwiya wa'l-Aghdiya (The Book of Simple Drugs). Field data collection targeted specific tribes: Aït Waryaghel in the province of Al Hoceima, Guelaya in the province of Nador, and the Arabs in the province of Jerada, utilizing a stratified sampling technique (Daget & Godron 1982, Etikan & Bala 2017).

When gathering information, discussion began by asking about person's tribal origins. If eligible, face-to-face interviews were conducted following an open and semi-structured interviews that included questions about the surveyed people (age, gender, education), local names of the plants, traditional uses of the plants, the parts of the plant used, and mode of administration and preparation. Additionally, two closed-ended questions were asked to assess the informant's knowledge and whether this knowledge was used by them, as well as a question about their preference for traditional or modern medicine.

Vernacular names in each province were recorded in the Amazigh language and transcribed using Tifinaghe-IRCAM (Ameur *et al*. 2004) for Amazigh names and Arabic letters for Arabic names. Simplified transcription was used to facilitate understanding and readability, especially for readers unfamiliar with Arabic or Amazigh languages.

The taxonomic identification of the species was carried out in the laboratory of the Faculty of Sciences at Abdelmalek Essaadi University of Tetouan based on the recent local botanical checklist (Fennane & Rejdali 2016). Scientific names were updated to the currently accepted names using catalogue of life (https://www.catalogueoflife.org/) and plants of the world online (https://powo.science.kew.org/). Plant species were classified into their respective families using the APG IV (The Angiosperm Phylogeny Group 2016) and PPG I (Pteridophyte Phylogeny Group 2016).

Data analysis

The collected data was compiled using Microsoft Excel and the reported diseases were classified according to the World Health Organization's International Classification of Primary Care (ICPC-2) (as suggested by Staub *et al*. 2015).

Socio-demographic analysis

In order to assess the impact of socio-demographic variables (age, gender, and education) on the use and knowledge of medicinal plants, participants in each province answered three questions:

1) Do you have any knowledge of medicinal plants? (Yes/No) – Referred to as "Plant knowledge"
2) Do you use medicinal plants? (Yes/No) – Referred to as "Plant use"
3) Would you prefer to use traditional or modern medicine in case of illness? (Traditional/Modern) – Referred to as "Medicine choice"

To examine the potential links between participants' responses and their province of residence, a chi-square test was conducted with a significance level of $p < 0.05$ using IBM SPSS Statistics 20 software. Furthermore, a separate Principal Component Analysis (PCA) was performed in RStudio for each province to assess the influence of sociodemographic variables (such as gender, age, and education) on the respondents' answers to these three questions.

The Kaiser-Meyer-Olkin (KMO) index, was calculated to assess the suitability of data for PCA, a higher value closer to 1 indicates greater suitability. Bartlett's test was used to evaluate if the relationships among our variables were meaningful and not just random, a highly significant result ($p<0.001$) support the choice of using PCA. IBM SPSS Statistics 20 software was used to calculate the KMO index and perform a Bartlett's test.

Jaccard similarity index (JI)

The Jaccard index, a commonly used measure in ethnobotanical research (El-Gharbaoui *et al*. 2017, González-Tejero *et al.* 2008), was utilized to determine the level of similarity in the citation of taxa by population across the three provinces.

$$JI = \left(\frac{C}{A + B - C}\right) \times 100$$

A represent the number of species recorded in province A
B represent the number of species recorded in province B
C represent the number common to province A and province B

Use categories analysis

The medicinal uses reported were statistically analyzed by Welsh's ANOVA test and the non-medicinal uses by a Kruskal-Wallis test, to assess the differences in the reported uses of taxa between the three provinces using IBM SPSS Statistics 20 software. The differences were considered significant for a p-value less than 0.05.

The importance of these tests is in their ability to objectively identify the variations in taxa uses among the three provinces. Differences observed are considered as not random but significant when p-value is less than 0.05, allowing for a better understanding of the unique ethnobotanical knowledge of each province.

Results and Discussion

Socio-demographic analysis

The study surveyed a total of 1177 individuals across the province of Al Hoceima, Nador, and Jerada. In Al Hoceima the majority of respondents were men (68%), possibly because women in this province were more hesitant to share information. However, through recommendations from male respondents, we were able to interview a number of women who were willing to share their knowledge. While in Nador and Jerada, the distribution of genders was relatively equal, with women making up 53% and 52% of respondents respectively. The age group of 35-50 years was the most represented in Al Hoceima (44,63%) and Nador (46,51%), while in Jerada the largest proportion was the 15-30 years age group (39,4%). This dominance of young people in Jerada could be due to the province's shepherd population, where young people often assist their families, leading to greater interaction with nature. Additionally, the enthusiasm of Jerada's youth to engage in our survey which may have also contributed to a higher participation rate within this age group. The rate of illiteracy among respondents in the three provinces was 35% in Al Hoceima, 29% in Nador, and 34% in Jerada, which was lower than the rate of literacy (65% in Al Hoceima, 71% in Nador and 66% in Jerada) (Table 1).

A significant portion of interviewees were willing to share information about the plants, with 70% of respondents in the province of Al Hoceima, 56,5% in Nador, and 77,1% in Jerada providing information. However, there were also individuals who were reluctant to share or did not have knowledge about the plants. Some of these individuals directed us to others whom they believed could assist us, such as older individuals or housewives.

Table 1. Sociodemographic results of the 3 provinces (Al Hoceima, Nador, Jerada).

	Al Hoceima	**Nador**	**Jerada**
Total	410	387	380
Women	32% (130)	53% (204)	52% (199)
Men	68% (280)	47% (183)	48% (181)
Educated	65% (266)	71% (275)	66% (250)
Not educated	35% (144)	29% (112)	34% (130)
Age range			
15-30 Years old	30,98% (127)	24,81% (96)	39,4% (150)
35-50 Years old	44,63% (183)	46,51% (180)	30,5% (116)
55-70 Years old	21,95% (90)	25,06% (97)	28,4% (108)
>70 Years old	2,44% (10)	3,62% (14)	1,5% (6)
Plant knowledge	70% (287)	56,5% (219)	77,1% (293)
No knowledge of plants	30% (123)	43,4% (168)	22,8% (87)
Use of medicinal plants	56,3% (231)	37,2% (144)	65,2% (248)
Non-use of medicinal plants	43,6% (179)	62,7% (243)	34,7% (132)
Traditional medicine	35,8% (147)	27,1% (105)	36,5% (139)
Modern medicine	64,1% (263)	72,8% (282)	63,4% (241)
Number of taxa cited	179	131	200

The perception of the population towards medicinal plants

A chi-square test was conducted to examine the potential associations between the three questions posed and the province of residence of the participants. The findings revealed that:

- The relationship between plant knowledge and the province of residence of the respondents was significant ($\chi2 = 38.309$, $df = 2$, $p < 0.05$), indicating a significant association between plant knowledge and the province of residence of the respondents.
- The relationship between plant use and the province of residence was significant ($\chi2 = 63.504$, $df = 2$, $p < 0.05$), suggesting that the use of plants may vary according to the province of residence of the respondents.

- The relationship between the choice of type of medicine and the province of residence was significant ($\chi 2 = 9.681$, df = 2, p = 0.008). These results indicate a significant association between the choice of type of medicine and the province of residence of the respondents.

Comparison among provinces: Plant knowledge

In Al Hoceima province, the calculation of the KMO index yielded a value of 0.536, and the Bartlett's test that was highly significant: Khi-2 = 110.065; $p < 0.001$. This confirms the suitability of data for Principal Components Analysis (PCA). PCA revealed that PC1 and PC2, accounted for 66% of the total variance (Figure 3A): PC1 explained 38% of the total variance, while PC2 explained 28%. The variables “plant knowledge”, “education”, and “age group” being the most significant factors for the first component (PC1; see Figure 3A), while the second component (PC2) was influenced by “gender” (see Figure 3A).

In Nador province, the KMO index yielded a value of 0.486, confirming the suitability of data for Principal Components Analysis (PCA), as did the highly significant Bartlett's test: Chi-square = 144.212; $p < 0.001$. The first dimension (PC1, 40%) and second dimension (PC2, 27%) of the PCA represent 67% of the total variance (Figure 3B). The variables “education”, and “age group” has an influence on PC1, while PC2 is influenced by the variables “plant knowledge”, and “gender”.

In Jerada province, the suitability of data for Principal Components Analysis (PCA) was confirmed through the Kaiser-Meyer-Olkin (KMO) index (0.556) and the highly significant Bartlett's test (Chi-square = 21.746; p = 0.001). PCA revealed that PC1 (32%) and PC2 (25%) represent 57% of the total variance (Figure 3C). PC1 was influenced by the variables “gender”, “education”, and “plant knowledge”, while, PC2 was influenced by “age group”.

The analysis of these results demonstrates that gender, age group, and education influence plant knowledge responses differently across the three provinces:

Gender appears to have a significant influence in two provinces. In Al Hoceima, men showed a higher tendency to respond affirmatively compared to women. However, it is important to acknowledge that the limited participation of women in the study in province of Al Hoceima due to mistrust of strangers, may have influenced these results. In Nador women had the tendency to respond “yes” more than men, which corresponds to the findings of previous studies done in Morocco (Abouri *et al*. 2012, Eddouks *et al*. 2002, 2017, Saadi *et al*. 2013, Tahraoui *et al*. 2007, Teixidor-Toneu *et al*. 2016). While, in Jerada, province gender doesn’t have a clear influence on the informant’s response suggesting that both women and men have a similar level of plant knowledge.

In Al Hoceima and Nador provinces, age group has an influence on participants’ answer. Indeed, older age tended to have greater knowledge of plants. In Jerada province, age group does not have a clear influence on the informant’s response.

Education seemed to have an influence on respondents’ answer in Al Hoceima province, with a tendency to have greater knowledge of plants among those with higher education levels. Whereas education doesn’t have an influence on the response of surveyed people in the provinces of Nador and jerada.

Comparison among provinces: Plant use

In Al Hoceima province, the suitability of data for Principal Components Analysis (PCA) was confirmed through the Kaiser-Meyer-Olkin (KMO) index (0.590) and the highly significant Bartlett's test (Chi-square = 134.568; $p < 0.001$). The first and second dimensions of the PCA represent 67% of the total variance (Figure 4A). The variables “plant use”, “education”, and “age group” were the most significant factors for the first component (PC1), while the second component (PC2) was influenced by “gender”.

In Nador province, the KMO index (0.5) and the Bartlett's test that was highly significant (Khi-2 = 125.659; $p < 0.001$) confirm the suitability of data for Principal Components Analysis (PCA). The first and second dimensions (PC1 and PC2) account for 65% of the total variance (Figure 4B). The first component (PC1) is influenced by the variables “education”, and “age group”, while the second component (PC2) is influenced by the variables “plant use”, and “gender”.

In Jerada province, although Bartlett's test yielded a low level of significance (Chi-square = 6,432; p = 0.377), the Kaiser-Meyer-Olkin (KMO) index (0.496) confirmed the suitability of data for Principal Components Analysis (PCA). PC1 and PC2 represent 53% of the total variance (Figure 4C). The variables “gender”, and “education” influence the first component (PC1), while, the second component (PC2) is influenced by the variables “plant use”, and “age group”.

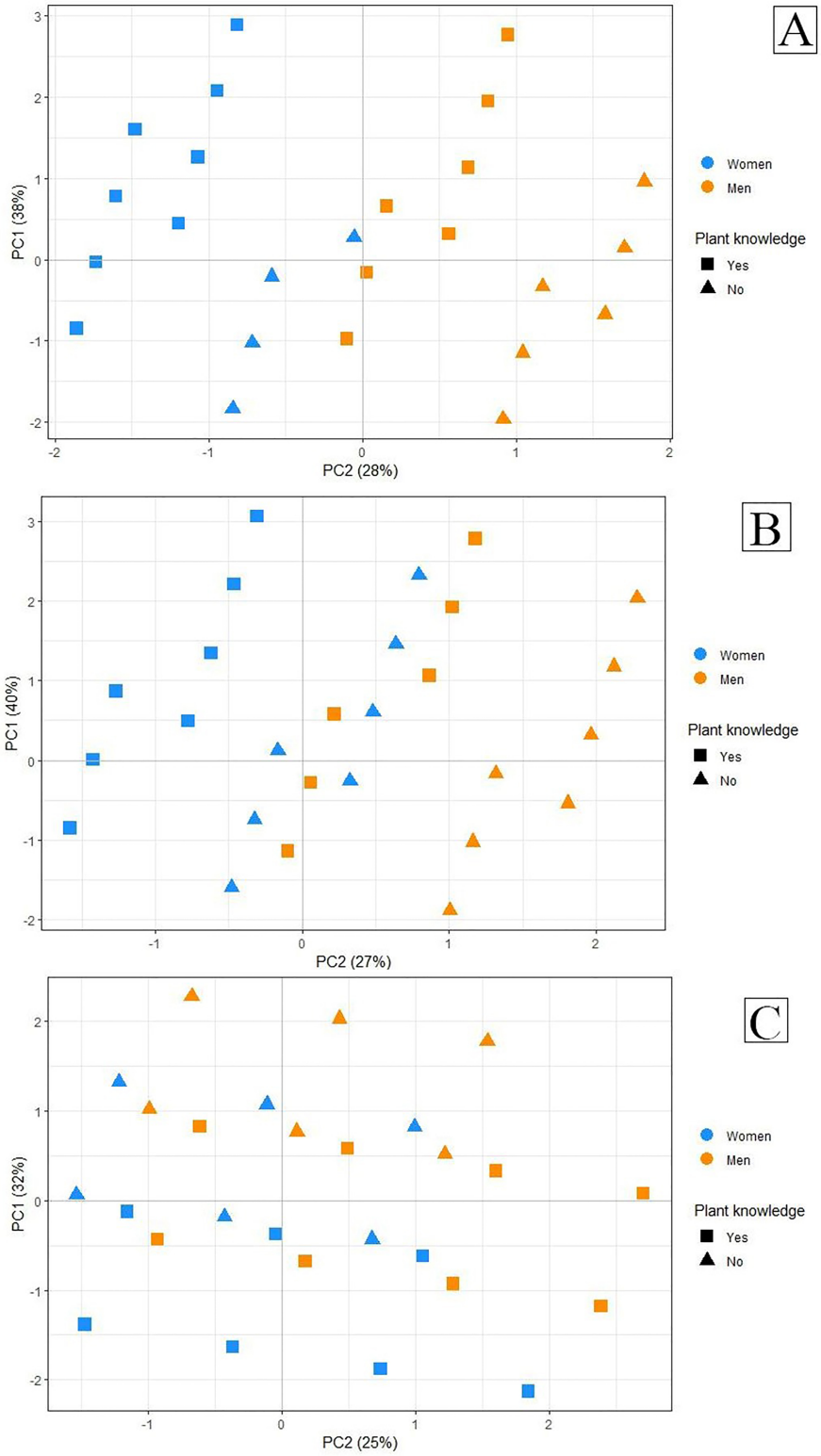

Figure 3. Principal components analysis (PCA) revealing the impact of socio-demographic factors (gender, age, education) on Plant knowledge among the population of Al Hoceima (A), Nador (B), and Jerada (C) provinces.

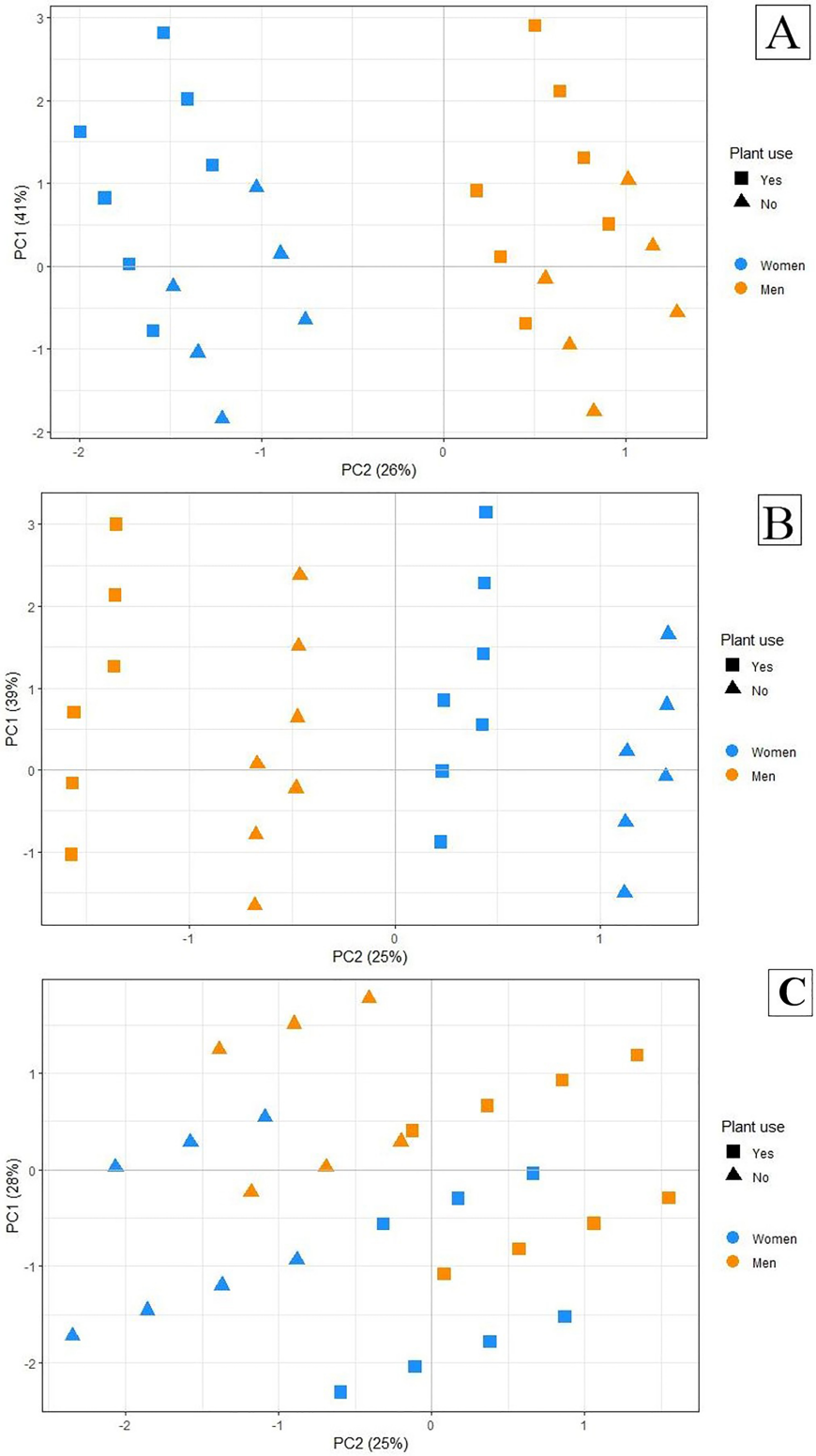

Figure 4. Principal components analysis (PCA) revealing the impact of socio-demographic factors (gender, age, education) on Plant use among the population of Al Hoceima (A), Nador (B), and Jerada (C) provinces.

These results show that gender, age group, and education influence the responses of surveyed people about plant use differently across the three provinces:

Gender influences the answers in Al Hoceima and Nador. However, it is important to note that the limited participation of women in the province of Al Hoceima may have influenced the results, as men are positively correlated while women are

not. In Nador province, women were more likely to answer “Yes” than men. In Jerada province gender does not appear to have a clear influence on this choice.

Regarding age group, it exerts an influence in two provinces. Aged surveyed people tended to respond positively in the province of Al Hoceima, while older surveyed people tended to choose “No” in Jerada province. In Nador province, age doesn’t have a significant influence on the responses of the surveyed people.

Participants’ education level influenced the answers in the three provinces. In Al Hoceima and Nador provinces, educated surveyed people tended to respond negatively, while in Jerada province, educated surveyed people are more likely to answer “Yes”.

Comparison among provinces: Medicine choice

In Al Hoceima province, the KMO index (0.612) confirmed the suitability of data for Principal Components Analysis (PCA), as did the highly significant Bartlett's test (Chi-square = 136.687; $p < 0.001$). The first and second dimensions of the PCA represent 68% of the total variance (Figure 5A). The variable “medicine choice” was negatively correlated with PC1, while the variables “education” and “age group” strongly correlated with PC1. In addition, PC2 was influenced by “gender”.

In Nador province, the suitability of data for Principal Components Analysis (PCA) was confirmed through the Kaiser-Meyer-Olkin (KMO) index (0.510) and the highly significant Bartlett's test (Chi-square = 116.210; $p < 0.001$). PC1 and PC2 represent 63% of the total variance (Figure 5B).

In Jerada province, although Bartlett's test yielded a low level of significance (Chi-square = 5,187; $p = 0.52$), the Kaiser-Meyer-Olkin (KMO) index (0.503) confirmed the suitability of data for Principal Components Analysis (PCA). PC1 and PC2 represent 53% of the total variance (Figure 5C). PC1 is influenced by the variables “gender”, and “education”, while PC2 is influenced by the variables “medicine choice”, and “age group”.

Gender exerts an influence in three provinces. In Nador, women tended to choose modern medicine. In Al Hoceima and Jerada, men are more likely to choose modern medicine than women.

Age group of surveyed people influenced the answers in the three provinces. In Al Hoceima, aged participants had the tendency to choose traditional medicine. In Nador, older respondents tended to choose modern medicine. In Jerada, younger surveyed people tended to choose modern medicine.

Regarding education, it exerts an influence in two provinces. In Al Hoceima and Nador, the analysis revealed that educated respondents had the tendency to choose modern over traditional. In Jerada education was found to have no significant influence on the responses of the surveyed people.

In summary, the analysis reveals the influence of sociodemographic factors (gender, age group, and education) on plant knowledge, plant use, and medicine choice across the three provinces. It is also worth noting that women’s knowledge of plants is primarily acquired through observation, transmission of knowledge from mother to daughter (Abouri *et al*. 2012, Amrati *et al*. 2021) and oral or written communication, or it can be also developed through social networking and mass media (Mohamed *et al*. 2022). Furthermore, women are often the caretakers of their families and are more likely to search for information from other women with more experience.

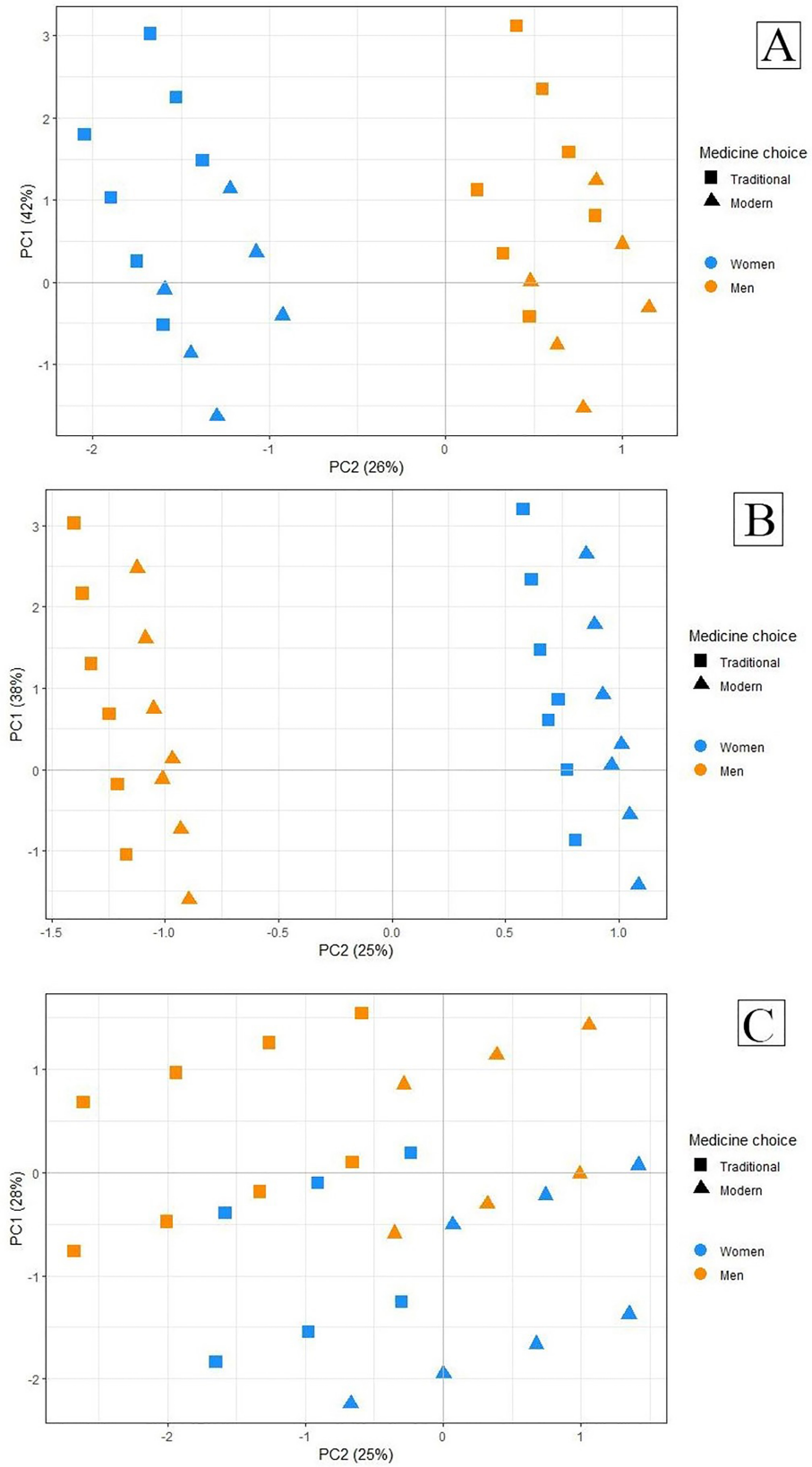

Figure 5. Principal components analysis (PCA) revealing the impact of socio-demographic factors (gender, age, education) on Medicine choice among the population of Al Hoceima (A), Nador (B), and Jerada (C) provinces.

Ethnobotanical analysis of medicinal plants

A total of 241 taxa belonging to 66 families were recorded across the three provinces, with some being cited without any therapeutic use. The population mentions these taxa only for their vernacular name or because it is a plant used in daily life for non-medicinal purposes, which attests to their cultural significance beyond their medicinal potential.

Among the 241 taxa, 57,68% are spontaneous and deeply rooted in the country's natural ecosystem, 31,54% are cultivated, indicating the influence of agriculture on the availability of certain medicinal plants, and 9,54% are introduced taxa, reflecting cultural and commercial exchanges that have occurred over time.

Differences in the richness of plant knowledge are evident in the number of taxa mentioned in each province. In Al Hoceima, 179 taxa were recorded belonging to 58 families (Annex A), including 71 cited without medicinal uses. In Nador, 131 taxa were recorded belonging to 50 families (Annex B), with 35 cited without medicinal uses. And in Jerada, 200 taxa were recorded belonging to 58 families (Annex C), this province stands out as the one where the population mentioned the largest number of species, with 35 cited without medicinal uses.

The analysis of the number of taxa cited provides an overview of the ethnobotanical richness of Northeastern Morocco, lays the foundation for a deeper exploration of traditional practices, and suggests that the province of Jerada possesses a strong base of ethnobotanical knowledge, given the high number of species mentioned by its population.

Vernacular names

Significant changes such as rapid urbanization, the Arabization in the educational system, and the expansion of free education have had a profound impact on the Berber-speaking population (Ennaji 1997). The vernacular names of plants in Morocco are the result of an intra and intercultural mixing between Berber-speaking and Arabic-speaking tribes (Najem *et al.* 2020).

Table 2 includes the 36 taxa that had similar vernacular names (34 cited only in Darija and 2 in Amazigh language) across the three provinces, which account for approximately 15% of the total recorded taxa (241). Taxa exhibiting vernacular names that share similarities but also province-specific vernacular names have been omitted from the table. As shown in Figure 6 and Table 2, only 32 taxa have the same vernacular name between Al Hoceima and Nador. This demonstrates the variation of the Amazigh language between the two different tribes, the tribe of Aït Waryaghel of the Rif Berber in Al Hoceima and that of Guelaya of the Eastern Rif in Nador, which highlights the importance of continuing to record this ethnic knowledge to ensure it is not lost. Studies estimate that there are 20 million Amazigh speakers between Morocco and Algeria (El Aissati 2001). However, there has been a decline in the number of Amazigh speakers in Morocco, from 50% (Boukouss 1995) to 28% according to the government's demo-linguistic data from 2004 (Outahajala *et al.* 2010). Additionally, there were 34 vernacular names that were similar between Jerada and Al Hoceima, and 33 between Nador and Jerada.

Table 2: Similar vernacular names reported.

Family	**Scientific Name (Voucher number)**	**Al Hoceima**	**Nador**	**Jerada**
AMARANTHACEAE Jussieu	*Dysphania ambrosioides* (L.) Mosyakin & Clemants (MP-Amara-004 JH)	L-Mkhinza,المخينزة	-	L-Mkhinza,المخينزة
APIACEAE Lindley	*Ammoides pusilla* (Brot.) (MP-Api-004 JHN)	Nunkha, نونخا	Nunkha, نونخا	Nunkha, نونخا
APIACEAE Lindley	*Anethum graveolens* L. (MP-Api-005 JHN)	Kerwiyâ 'amya, كروية عمية	Kerwiyâ 'amya, كروية عمية	Kerwiyâ 'amya, كروية عمية
APIACEAE Lindley	*Apium graveolens L.* (MP-Api-006 JHN)	āl-krāfs, الكرافس	āl-krāfs, الكرافس	āl-krāfs, الكرافس
APIACEAE Lindley	*Carum carvi* L. (MP-Api-008 JHN)	Karwiyâ, كروية	Karwiyâ, كروية	Karwiyâ, كروية
APIACEAE Lindley	*Cuminum cyminum* L. (MP-Api-011 JHN)	Kemmûn, الكمون	Kemmûn, الكمون	Kemmûn, الكمون
APIACEAE Lindley	*Petroselinum crispum* (Mill.) (MP-Api-018 JHN)	Ma'dnous, المعدنوس	Ma'dnous, المعدنوس	Ma'dnous, المعدنوس
APIACEAE Lindley	*Pimpinella anisum L* (MP-Api-020 JHN)	Habbat-Hlaoua, حبة حلاوة	Habbat-Hlaoua, حبة حلاوة	Habbat-Hlaoua, حبة حلاوة

ASTERACEAE Berchtold & J. Presl	*Dittrichia viscosa* (L.) Greuter subsp. *Viscosa* (MP-Ast-012 JHN)	Magraman, مكرمان ⵎⴰⴳⵔⴰⵎⴰⵏ	Magraman, مكرمان ⵎⴰⴳⵔⴰⵎⴰⵏ	Magraman, مكرمان ⵎⴰⴳⵔⴰⵎⴰⵏ
CUCURBITACEAE Jussieu	*Citrullus colocynthis* (L.) Schrader (MP-Cu-001 HN)	L-handhal, الحنظل Ariri, أَرِيرِي ⴰⵔⵉⵔⵉ Hadj, حدج ⵃⴰⴷⵊ	L-handhal, الحنظل Ariri, أَرِيرِي ⴰⵔⵉⵔⵉ Hadj, حدج ⵃⴰⴷⵊ	-
CUCURBITACEAE Jussieu	*Cucumis melo* L. (MP-Cu-003 JHN)	Swihla, سويهلة	Swihla, سويهلة	Swihla, سويهلة
FABACEAE Lindley	*Cicer arietinum* L. (MP-Fab-004 JHN)	L-Hûmoss,الحمص	L-Hûmoss,الحمص	L-Hûmoss,الحمص
FABACEAE Lindley	*Lens culinaris* Medik. (MP-Fab-008 JHN)	‘Des, عدس	‘Des, عدس	‘Des, عدس
FABACEAE Lindley	*Senna alexandrina* Mill. (MP-Fab-014 JHN)	Es-sana, السانا	Es-sana, السانا	Es-sana, السانا
FAGACEAE Dumortier	*Castanea sativa* Mill. (MP-Fag-001 JHN)	L-Quastel, القسطل	L-Quastel, القسطل	L-Quastel, القسطل
LAMIACEAE Martynov	*Mentha spicata* L. *Mentha villosa* Huds. (MP-Lam-006 JHN)	Liqâma d-atay, ليقامة آتاي Ne’na’ l-beldi, النعناع البلدي	Atay, آتاي Ne’na’ l-beldi, النعناع البلدي	Liqâma d-atay, ليقامة آتاي Ne’na’ l-beldi, النعناع البلدي
LAMIACEAE Martynov	*Origanum majorana* L. (MP-Lam-011 JHN)	Merdedouch, مرددوش	Merdedouch, مرددوش	Merdedouch, مرددوش
LAMIACEAE Martynov	*Salvia officinalis L.* (MP-Lam-012 JHN)	Es-Salmiya, السالمية	Es-Salmiya, السالمية	Es-Salmiya, السالمية
LINACEAE Perleb	*Linum usitatissimum* L. (MP-Li-001 JHN)	Zeri’at El-Ketân, زريعة الكتان	Zeri’at El-Ketân, زريعة الكتان	Zeri’at El-Ketân, زريعة الكتان
MYRTACEAE Jussieu	*Eucalyptus globulus* Labill. (MP-Myrt-001 JHN)	Kaliptousse,كاليبوتس	Kaliptosse,كاليبوتس	Kaliptosse,كاليبوتس
NITRARIACEAE Lindley	*Peganum harmala* L. (MP-Ni-001 JHN)	L-Hermel, الحرمل	L-Hermel, الحرمل	L-Hermel, الحرمل
OLEACEAE Hoffmannsegg & Link	*Olea europaea* L. *subsp. europaea var. europaea* (MP-Ol-003 JHN)	Zaytoûne, زيتون	Zaytoûne, زيتون	Zaytoûne, زيتون
PEDALIACEAE R. Brown	*Sesamum indicum* L. *(MP-Pe-001 JHN)*	Zenjlane, زنجلان	Zenjlane, زنجلان	Zenjlane, زنجلان
PLANTAGINACEAE Jussieu	*Plantago major* L. *Plantago coronopus* L. (MP-Pl-003 JHN)	Bard o salam, برد و سلام Zentet l-khrouf, زنطيط الخروف	Bard o salam, برد و سلام Zentet l-khrouf, زنطيط الخروف	Bard o salam, برد و سلام Zentet l-khrouf, زنطيط الخروف
POACEAE Barnhart	*Arundo donax* L. (MP-Poa-003 JH)	l-qsab, القصب	-	l-qsab, القصب
POACEAE Barnhart	*Cenchrus americanus* (L.) Morrone (MP-Poa-005 JHN)	Ilân, إيلان	Ilân, إيلان	Ilân, إيلان
POACEAE Barnhart	*Hordeum vulgare* L. (MP-Poa-008 JHN)	Es-s’îr, الشعير	Es-s’îr, الشعير	Es-s’îr, الشعير
POACEAE Barnhart	*Oryza sativa* L. (MP-Poa-009 JHN)	Al-rôz, الروز	Al-rôz, الروز	Al-rôz, الروز
RANUNCULACEAE Jussieu	*Nigella sativa* L. *Nigella damascena* L. *Nigella arvensis* L. (MP-Ra-003 JHN)	Sanûj, سانوج Habba es-sawda, حبة السوداء	Sanûj, سانوج Habba es-sawda, حبة السوداء	Sanûj, سانوج Habba es-sawda, حبة السوداء
ROSACEAE Jussieu	*Rosa x centifolia* L. *Rosa x damascena* Mill. (MP-Ro-011 JHN)	Werd beldi, الورد البلدي	Werd beldi, الورد البلدي	Werd beldi, الورد البلدي
SALICACEAE Mirbel	*Populus alba* L. *Populus nigra* L. *Populus euphratica* Olivier (MP-Sali-001 JHN)	Sefsaf, صفصاف	Sefsaf, صفصاف	Sefsaf, صفصاف
SALVADORACEAE Lindley	*Salvadora persica* L. (MP-Salv-001 JHN)	Siwak, سواك	Siwak, سواك	Siwak, سواك

SOLANACEAE Jussieu	*Capsicum frutescens* L. (MP-So-001 JHN)	Felfel hârr, فلفل حار	Felfel hârr, فلفل حار	Felfel hârr, فلفل حار
VERBENACEAE Jaume Saint-Hilaire	*Aloysia citrodora* Palau (MP-Ve-001 JHN)	Lwîza, لويزة	Lwîza, لويزة	Lwîza, لويزة
Zingiberaceae Martinov	*Elettaria cardamomum* White & Maton *et Elettaria major* Smith (MP-Zi-002 JN)	-	Qa'qola, قعقلة	Qa'qola, قعقلة
Zingiberaceae Martinov	*Zingiber officinale* Rosc (MP-Zi-003 JHN)	Skenjbīr, سكنجبير	Skenjbīr, سكنجبير	Skenjbīr, سكنجبير

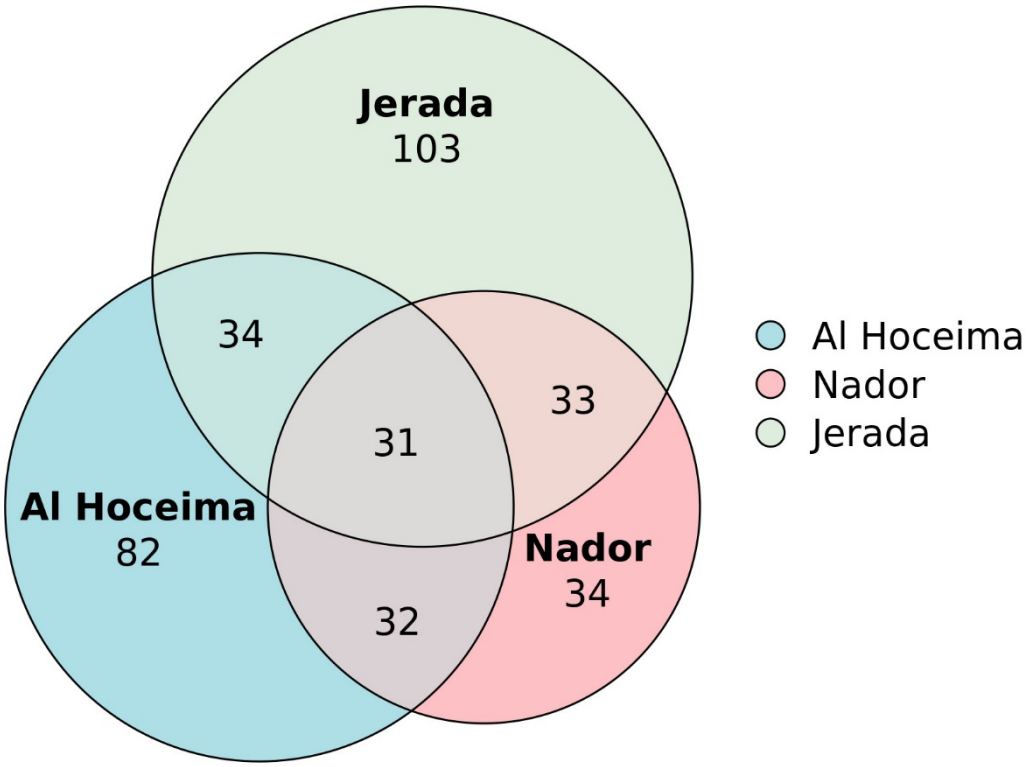

Figure 6. Similarity of vernacular names between taxa in the three provinces.

The coexistence with the Amazigh population has significantly influenced the lexicon and grammar of Moroccan varieties of Arabic over the course of centuries. One major linguistic feature that has emerged through this contact is the loss of vowel length, which distinguishes Moroccan Arabic (Darija) from Classical Arabic (Lahrouchi 2018). Examples in Table 2, such as **lentils** *Lens culinaris* Medik. recorded as (**'des**) in the field and known as (**adas**) in Classical Arabic and **rice** *Oryza sativa* L. recorded as (**al-rôz**) and known in Classical Arabic as (**al-Arôz**), demonstrate this distinction. The existence of only one vernacular name of taxa across the three provinces reported in Amazigh, such as *Dittrichia viscosa* (L.) Greuter, (**magraman, ⵎⴰⵖⵔⴰⵏ**), shows the historical and cultural interconnections between the languages of the region. This linguistic interaction highlights the importance of transcribing the various vernacular names in order to ensure the preservation of the linguistic richness.

The Jaccard Index (JI) was used to determine the degree of similarity between taxa reported across the three provinces. As seen in Table 3, the results indicate that the province Al Hoceima and the province Jerada have a moderate level of similarity with 61,27% of the reported taxa being similar. This suggests that despite significant cultural and environmental differences between these provinces, there are a considerable number of shared taxa, likely due to exchanges between the provinces. Moreover, the province Jerada and the province Nador have a moderate level of similarity, reaching 59,13%. While these provinces share some degree of ethnobotanical knowledge, the variability between them reflects the cultural and environmental nuances of each province. On the other hand, the province Al Hoceima and the province Nador have a high level of similarity, reaching 68,47%. The higher similarity between these two provinces is likely due to their geographical

proximity and similar environmental conditions. These results suggest that there are notable similarities and differences in the reported taxa across the provinces, reinforcing the idea that each province holds a unique set of ethnobotanical knowledge, contributing to the overall diversity of the local knowledge in the region.

Table 3. Similarity of reported species between provinces.

Similarity of reported species between provinces	Indices	Jaccard Index (JI)
Al Hoceima/Nador	A[1]= 179	68,47%
	B[2]= 131	
	C[4]= 126	
Al Hoceima/Jerada	A[1]= 179	61,27%
	B[3]= 200	
	C[4]= 144	
Jerada/Nador	A[3]= 200	59,13%
	B[2]= 131	
	C[4]= 123	

[1]Number of taxa recorded in province of Al Hoceima; [2]Number of taxa recorded in province of Nador; [3] Number of taxa recorded in province of Jerada; [4]Number of taxa similar between two provinces

Use categories of the plants

During this research, 790 medicinal uses were recorded (232 in the province of Al Hoceima, 172 in the province of Nador, and 386 therapeutic uses in the province of Jerada). The digestive group (D) was the most cited category (Figure 7; Table 4) in the three provinces (54 treated diseases in province of Al Hoceima by 44 taxa, 40 treated diseases in province of Nador by 37 taxa, and 101 treated digestive diseases in province of Jerada by 75 taxa), digestive diseases was found the most cited by local in several studies carried in Morocco (Belhaj *et al.* 2020, El Assri *et al.* 2021, El Khomsi *et al.* 2022, El-Ghazouani *et al.* 2021, Idm'hand *et al.* 2020, Jeddi *et al.* 2021, Merzouki *et al.* 2000, Ouhaddou *et al.* 2014). The general and unspecified group (A) is the second most cited category (41 treated diseases in province of Al Hoceima by 34 taxa, 20 treated diseases by 19 taxa in province of Nador, and 55 treated diseases by 48 taxa in province of Jerada), and the third most cited category is the skin group (S) (44 diseases treated by 32 taxa in province of Al Hoceima, 20 diseases treated by 15 taxa in province of Nador, and 46 diseases treated by 35 taxa in province of Jerada).

According to the results of the Welsh's ANOVA test (Table 4), there is a significant difference among the following groups: Digestive (D) (p-value = 0,006), Neurological (N) (p-value = 0,018), Endocrine/Metabolic and Nutritional (T) (p-value = 0,045), whereas no significant difference was found for the other diseases groups (Table 4). The province of Jerada has a higher mean number of reported diseases in all categories, indicating greater knowledge of diseases treated by plants compared to the provinces of Al Hoceima and Nador. However, it is important to note that the standard deviation for each disease category was also higher for Jerada, which may be due the fact that the population there mentioned more taxa than the other two provinces.

Concerning other uses known by the population, 474 were recorded (166 in the province of Al Hoceima, 120 in the province of Nador, and 188 in the province of Jerada) (Table 5); the Kruskal-Wallis test demonstrate that the categories "Agricultural" and "Aromatic present a significant difference between the three provinces (p-value < 0,05), while there is no significant difference for the other uses categories.

The reported result of uses (medicinal and non-medicinal) shows the variety in the traditional knowledge between the three provinces surveyed. The province found to have a higher number of reported taxa and uses was province of Jerada, relative to the provinces of Al Houceima and Nador. This is likely due to the fact that many residents of this province are shepherds and individuals have more contact and familiarity with plants than the other ethnic groups. Nevertheless, each province possesses a unique traditional knowledge and understanding of the plant species within their region. The significant variations among provinces in terms of plant uses attest to the complex interactions between local populations and surrounding flora. This analysis highlights the richness and diversity of ethnobotanical knowledge in Northeastern Morocco.

Table 4. Diseases reported, number of species, mean, standard deviation, and Welsh's ANOVA test for each ICPC-2 group.

International classification of primary care (2nd edition)	Province of Al Hoceima				Province of Nador				Province of Jerada				Welsh's ANOVA test	ddl1	ddl2	Sig.
	Diseases reported	Number of species	Mean	Standard deviation	Diseases reported	Number of species	Mean	Standard deviation	Diseases reported	Number of species	Mean	Standard deviation				
General and Unspecified (A)	41	34	0,23	0,507	20	19	0,15	0,382	55	48	0,28	0,485	3,150	2	331,815	0,44
Blood, Blood forming organs and immune mechanism (B)	3	3	0,02	0,129	5	4	0,04	0,229	13	11	0,07	0,285	2,473	2	278,772	0,086
Digestive (D)	54	44	0,3	0,571	40	37	0,31	0,510	101	75	0,51	0,757	5,267	2	330,035	0,006
Eye (F)	4	4	0,02	0,149	1	1	0,01	0,087	3	3	0,02	0,122	0,634	2	330,675	0,531
Ear (H)	2	2	0,01	0,106	0	0	0	0	3	3	0,02	0,122	-	-	-	-
Cardiovascular (K)	9	8	0,05	0,244	5	5	0,04	0,192	21	19	0,11	0,338	2,696	2	335,344	0,069
Musculoskeletal (L)	7	7	0,04	0,195	8	7	0,06	0,270	14	12	0,07	0,292	0,827	2	301,771	0,438
Neurological (N)	2	2	0,01	0,106	12	9	0,09	0,381	9	8	0,05	0,231	4,076	2	249,649	0,018
Psychological (P)	12	11	0,07	0,273	8	6	0,06	0,298	8	5	0,04	0,281	0,496	2	309,941	0,610
Respiratory (R)	20	20	0,11	0,317	16	11	0,12	0,496	37	34	0,19	0,426	1,861	2	293,721	0,157
Skin (S)	44	32	0,25	0,578	20	15	0,15	0,472	46	35	0,23	0,537	1,471	2	323,238	0,231
Endocrine/Metabolic and Nutritional (T)	14	14	0,08	0,270	13	10	0,1	0,369	35	29	0,18	0,464	3,128	2	301,862	0,045
Urological (U)	11	9	0,06	0,284	6	6	0,05	0,210	21	18	0,11	0,367	1,743	2	336,586	0,177
Pregnancy, childbearing, Family planning (W)	5	5	0,03	0,166	6	5	0,05	0,244	13	10	0,07	0,302	1,175	2	295,717	0,310
Female genital (X)	4	4	0,02	0,149	11	8	0,08	0,352	6	6	0,03	0,171	1,766	2	274,073	0,173
Male genital (Y)	0	0	0	0	1	1	0,01	0,087	1	1	0,01	0,071	-	-	-	-

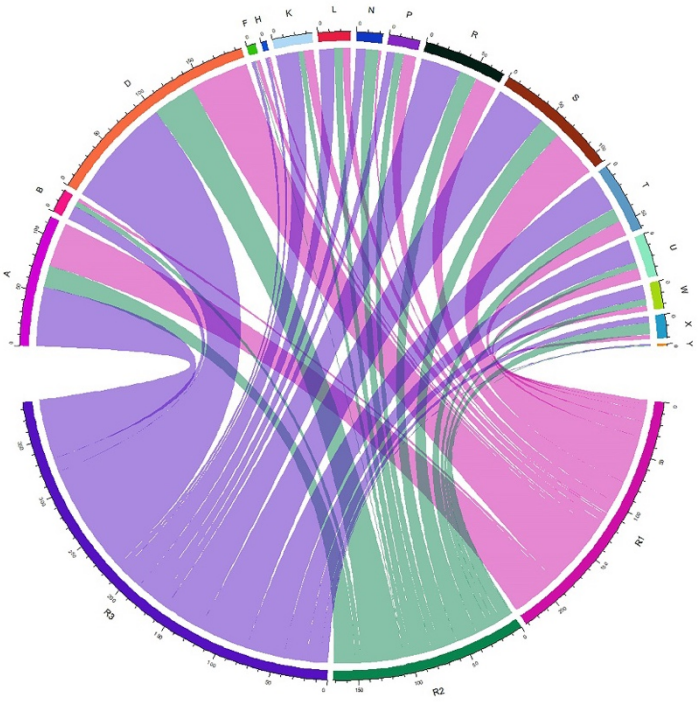

Figure 7. International classification of primary care categories assigned for reported diseases in the three provinces. (With R1: Al Hoceima province, R2: Nador province, R3: Jerada province).

Table 5: Other uses reported in the three provinces, Kruskal-Wallis test.

Other uses	Province of Al Hoceima	Province of Nador	Province of Jerada	Kruskal-Wallis test
Agricultural	3	0	19	$\chi2 = 17,427$, ddl = 2, p = 0
Aromatic	1	0	7	$\chi2 = 9,657$, ddl = 2, p = 0,008
Ceremonial	1	1	1	$\chi2 = 0,096$, ddl = 2, p = 0,953
Cosmetic	16	12	12	$\chi2 = 1,588$, ddl = 2, p = 0,452
Drink	6	9	7	$\chi2 = 2,354$, ddl = 2, p = 0,308
Fragrant	2	1	2	$\chi2 = 0,099$, ddl = 2, p = 0,952
Industrial	8	7	12	$\chi2 = 0,17$, ddl = 2, p = 0,919
Ornamental	1	1	1	$\chi2 = 0,096$, ddl = 2, p = 0,953
Seasoning	1	0	1	$\chi2 = 0,702$, ddl = 2, p = 0,704
Animal's health	3	0	7	$\chi2 = 5,184$, ddl = 2, p = 0,075
Artisanal	1	0	1	$\chi2 = 0,702$, ddl = 2, p = 0,704
Condiment	20	23	20	$\chi2 = 4,786$, ddl = 2, p = 0,091
Detergent	1	0	0	$\chi2 = 3,694$, ddl = 2, p = 0,158
Food	85	63	88	$\chi2 = 0,185$, ddl = 2, p = 0,912
Fuel	0	0	1	$\chi2 = 1,651$, ddl = 2, p = 0,438
Magic and religious beliefs and practice	7	1	5	$\chi2 = 3,007$, ddl = 2, p = 0,222
Repels insect	2	1	0	$\chi2 = 2,095$, ddl = 2, p = 0,351
Tips	8	2	4	$\chi2 = 3,112$, ddl = 2, p = 0,211

Plant parts used, mode of preparation, and mode of administration:

Study results (Figure 8) show that in Jerada province, the most cited plant parts are leaves (56 citations), followed by fruits (40), and seeds (37). This aligns with findings from several other studies conducted in Morocco, where leaves have been identified as the most used part (Aboukhalaf *et al.* 2022, Ajjoun *et al.* 2021, Belhaj *et al.* 2020, Benamar *et al.* 2023, Benyahya

et al. 2023, Bouyahya *et al.* 2017, Eddouks *et al.* 2017, El Assri *et al.* 2021, El Khomsi *et al.* 2022, El Yaagoubi *et al.* 2023, El-Ghazouani *et al.* 2021, Idm'hand *et al.* 2020, Jeddi *et al.* 2021, Alami Merrouni *et al.* 2021, Ouhaddou *et al.* 2014). In contrast, in the province of Al Hoceima and the province of Nador fruits were the most used part (46 citations in Al Hoceima province, 34 in Nador province), followed by leaves (37 citations in province of Al Hoceima, 33 citations in province of Nador), and seeds (25 citations in Al Hoceima province, 24 citations in Nador province).

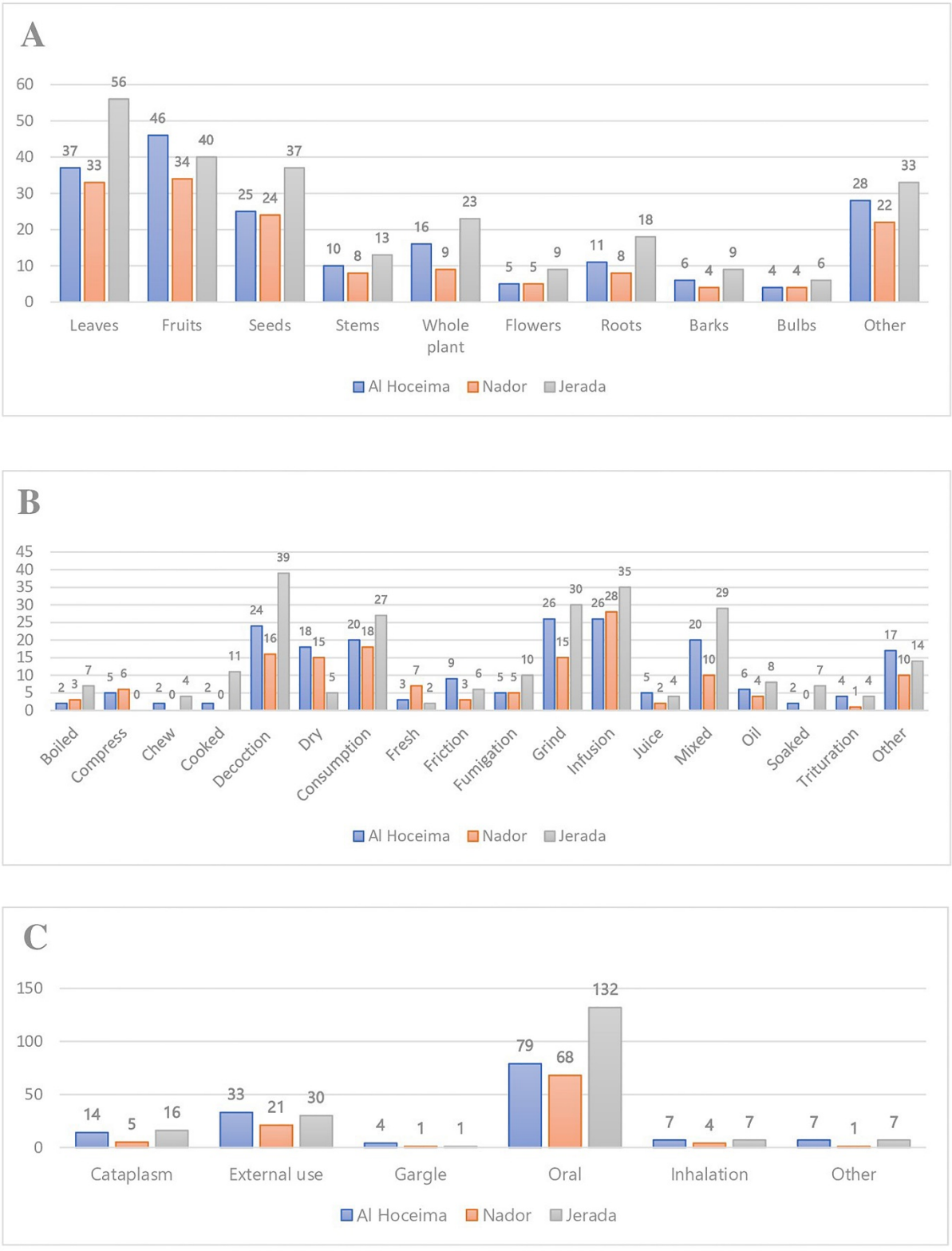

Figure 8. Plant Parts Used (A), Mode of Preparation (B), and Mode of Administration (C) in the three

These parts are the most cited because they are easily identified, collected and also conserved, which makes them well-known. However, it is important to raise awareness about the need for sustainable harvesting practices to ensure the preservation of ecosystem services (Bachar *et al.* 2020). The variation in plant parts preferences highlight the importance of considering provincial distinctions when conducting ethnobotanical research, as it contributes to a more comprehensive understanding of traditional practices, particularly at the scale of ethnic origins in Morocco.

Concerning the mode of preparation (Figure 8), the most cited mode among the three provinces was decoction, consistent with findings from several previous works conducted in Morocco (Aboukhalaf *et al.* 2022, Barkaoui *at al.* 2017, Belhaj *et al.* 2020, Bouyahya *et al.* 2017, El Amri *et al.* 2014, El Assri *et al.* 2021, Idm'hand *et al.* 2020, Alami Merrouni *et al.* 2021, Merzouki *et al.* 2000), followed by infusion and then grind all in Jerada province. In province Al Hoceima, infusion and grind were cited most frequently, followed by decoction and then consumption. In the province of Nador, infusion and grind were also the most cited modes, followed by consumption and then decoction. Other studies in Morocco reported also that infusion is the most popular mode of preparation (Ajjoun *et al.* 2021, Benamar *et al.* 2023, Benyahya *et al.* 2023, El Khomsi *et al.* 2022, El-Ghazouani *et al.* 2021, El Yaagoubi *et al.* 2023, Ouhaddou *et al.* 2014).

The predominance of decoction and infusion in our study and prior studies may be attributed to their simplicity (requiring minimal equipment), they both can allow the extraction of the maximum of active substances (Benaiche *et al.* 2019, Benamar *et al.* 2023) and are an adequate method to disinfect the plant (Lahsissene *et al.* 2010).

Regarding the mode of administration (Figure 8), the oral way is the most cited in the three provinces, coincidentally, other studies in Morocco (Aboukhalaf *et al.* 2022, Ajjoun *et al.* 2021, Barkaoui *et al.* 2017, Belhaj *et al.* 2020, El Assri *et al.* 2021, El Yaagoubi *et al.* 2023, Jeddi *et al.* 2021, Ouhaddou *et al.* 2014) have cited similar results. Followed by external use, then cataplasm, highlighting the confidence of the population in the efficacy of traditional remedies.

Conclusion

In conclusion, this comparative study provides a global view of the ethnobotanical knowledge of the population in provinces Al Hoceima, Nador, and Jerada in the North-east of Morocco. This study shows that even if the majority of surveyed people prefer modern medicine, the population still carried over a significant amount of traditional medicinal knowledge. Among 1177 surveyed people, we have collected information about 241 taxa belonging to 66 families, with the highest number of uses reported in the province Jerada. 232 medicinal uses and 166 non-medicinal uses were reported in the province of Al Hoceima, 172 medicinal uses and 120 non-medicinal uses were reported in the province of Nador, and 386 medicinal uses and 188 non-medicinal uses were reported in the province of Jerada. The extensive knowledge of the local flora could be attributed to the fact that many residents of this province are shepherds.

Our findings indicate that the parts used of the taxa, mode of mode of preparation and administration were quite similar in the three provinces it also records a moderate to high level of similarity of taxa mentioned between the provinces. This study reveals both similarities and distinctions in ethnobotanical knowledge in Northeastern region of Morocco and can serve as a database for future scientific research.

It's also worth noting that this article represents the first part of our research, which focuses on the statistical aspect. We are currently working on a second part that will delve more into specific uses, emphasizing the description of the most particular medicinal and non-medicinal uses cited by the population of Northeastern region of Morocco.

Declarations

List of abbreviations: APG IV: Angiosperm Phylogeny Group, ICPC-2: International Classification of Primary Care, 2nd edition, PPG I: Pteridophyte Phylogeny Group, WHO: World Health Organization.

Consent for publication: Not applicable.

Availability of data and materials: All the data is presented in figures and tables in the manuscript and is available with the corresponding author.

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Authors' contributions:

Halima Smaili: Investigation and data collection, Data analysis and interpretation, writing – Original Draft preparation;

Fatima-Zahra Mir: Investigation and data collection, Data analysis and interpretation;
Abderrahmane Merzouki: Supervisor of the work, Methodology and Validation, Project Administration, Drafting and conception and design of the work, Revising and critically of the content.

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Annex 1. Table of Al Hoceima Province species.

Family	Scientific Name (Voucher number)	Vernacular name	Diseases treated	Part used	Mode of preparation	Mode of administration	Other uses
AMARANTHACEAE Jussieu	*Atriplex halimus* L. (MP-Amara-002 JH)	l-getaf, لجطف Aramas, أرماس ⵄⵔⵎⴰⵙ Driwid, دريويد ⴷⵔⵉⵡⵉⴷ Tsmkht, تسمخت ⵜⵙⵎⴽⵜ					
AMARANTHACEAE Jussieu	*Beta vulgaris* L. (MP-Amara-003 JHN)	Barba, باربا	Anemia (B78)	Roots	Consumption	Oral	Edible Use to make the lips redden
AMARANTHACEAE Jussieu	*Dysphania ambrosioides* (L.) Mosyakin & Clemants (MP-Amara-004 JH)	L-Mkhinza,المخينزة	Fever (A03)	Whole plant	Decoction	Cataplasm Oral	
AMARANTHACEAE Jussieu	*Haloxylon scoparium* Pomel (MP-Amara-005 JH)	Rrmet, الرمت Thassyth, ثاسيت ⵜⴰⵙⵉⵜ		Whole plant			Eaten by livestock
AMARANTHACEAE Jussieu	*Spinacia oleracea* L. (MP-Amara-006 JH)	Sirkane, سيركان ⵙⵉⵔⴽⴰⵏ Es-Selk, السلك		Leaves			Edible
		Imzoua, إمزوا ⵉⵎⵣⵡⴰ					
AMARYLLIDACEAE J. Saint-Hilaire	*Allium ampeloprasum var. porrum* L. (MP-Amary-001 JHN)	Thabsetch, ثابستش ⵜⴰⴱⵙⵜⵛ		Bulbs			Edible
AMARYLLIDACEAE J. Saint-Hilaire	*Allium cepa* L. (MP-Amary-002 JHN)	L-Bessla, البصلة L-Bessla l-Hemrra, البصلة الحمرا Azalim, أزليم ⴰⵣⵍⵉⵎ	Cough (R05) Earache (H01) Fever (A03) Hair loss (S23) Weight loss (T08)	Bulbs Seeds	Juice Soaked Grind	Oral External use Ear drops	Edible
AMARYLLIDACEAE J. Saint-Hilaire	*Allium sativum* L. (MP-Amary-003 JHN)	Et-Thoûm,الثوم Dichat ذيشات ⴷⵉⵛⴰⵜ	Cough (R05) Hair loss (S23) Hemorrhoid (K96) Hypertension (K86) Infectious disease (A78)	Bulbs	Friction Consumption	External use Oral Suppository	Edible
ANACARDIACEAE R. Brown	*Pistacia lentiscus* L. (MP-An-002 JH)	Fadis, فاديس ⴼⴰⴷⵉⵙ	Acne (S96) Stomachache (D01) Wound (S18)	Fruits	Boiled Mixed	Oral Cataplasm	

ANACARDIACEAE R. Brown	*Rhus pentaphylla* Desf. (MP-An-003 H)	Tizga, تزكا ⵜⵣⵣⵅⴰ Azad, أزاد ⴰⵣⴰⴷ Tazadt, تازادت ⵜⴰⵣⴰⴷⵜ	Infertility (W15)	Fruits	Powder mixed with honey	Oral	
APIACEAE Lindley	*Ammi majus* L. (MP-Api-001 H)	Tabchnikt تابشنيقت ⵜⴰⴱⵛⵏⵉⵇⵜ		Stems			Young stems edible
APIACEAE Lindley	*Ammi visnaga* L. (MP-Api-002 JHN)	Tbichnikht تبشنيخت ⵜⴰⴱⵛⵏⵉⵅⵜ	Dental hygiene (D19)	Umbels Fruits	Powder	Gargle	Use as a toothpick
APIACEAE Lindley	*Ammodaucus leucotrichus* Cossone & Durieu (MP-Api-003 JHN)	Kammūn eṣ-ṣōfi الكمون الصوفي	Abdominal pain (D01) Abdominal pain for babies (D01)	Fruits	Decoction Infusion Powder	Oral	Condiment
APIACEAE Lindley	*Ammoides pusilla* (Brot.) (MP-Api-004 JHN)	Nunkha, نونخا		Aerial part of the plant			Aromatic Condiment
APIACEAE Lindley	*Anethum graveolens* L. (MP-Api-005 JHN)	Kerwiyâ ʻamya كروية عمية		Fruits			Condiment
APIACEAE Lindley	*Apium graveolens* L. (MP-Api-006 JHN)	āl-krāfs الكرافس	Coldness (A29)	Leaves Stems	Compress	External use	Edible
APIACEAE Lindley	*Apium nodiflorum* (L.) Lag. (MP-Api-007 JH)	Ziyata, زياتة Ziyateth, زياتث ⵣⵉⵢⴰⵜⵜⵀ		Leaves			Edible
APIACEAE Lindley	*Carum carvi* L. (MP-Api-008 JHN)	Karwiyâ كروية	Abdominal pain (D01) Swollen abdomen (D21)	Fruits	Grind	Oral	Condiment
APIACEAE Lindley	*Coriandrum sativum* L. (MP-Api-010 JHN)	Qosbar قسبر Qezbor قزبر	Menstruation irregular (X07) Stomachache (D01)	Whole plant Seeds	Powder Fresh Dry	Oral	Edible Condiment
APIACEAE Lindley	*Cuminum cyminum* L. (MP-Api-011 JHN)	Kemmûn الكمون	Abdominal pain (D01)	Seeds	Decoction Powder	Oral	Condiment
APIACEAE Lindley	*Daucus carota* L. *var. sativa* L. (MP-Api-012 JHN)	Khizou, خيزو	Visual disturbance (F05) Diarrhea (D11)	Roots	Consumption	Oral	Edible

APIACEAE Lindley	*Eryngium triquetrum* Vahl. *Eryngium tricuspidatum* L. *Eryngium campestre* L. (MP-Api-013 JHN)	Rkhachef رخشف ⵔⵅⴰⵛⴰⵀ					
APIACEAE Lindley	*Ferula communis* L. (MP-Api-014 JHN)	Boubal بوبال Thaggult ثاجولت ⵜⴰⵊⵓⵍⵜ		Inflorescences			Edible
APIACEAE Lindley	*Foeniculum vulgare* Mill. (MP-Api-015 JHN)	El-Besbas البسباس Ar-besbas أربسباس ⴰⵔⴱⵙⴱⴰⵙ	Stomachache (D01) Bowel movements (D18)	Bulbs Roots	Decoction	Oral	Edible
APIACEAE Lindley	*Foeniculum vulgare.* Mill. *Foeniculum vulgare* subsp.*vulgare* Miller (MP-Api-016 JHN)	Ssemâr,سمار En-nafe', النافع	Calm babies and adults (P29) Stomachache (D01) Hormonal disturbance (T99)	Seeds	Infusion	Oral	Condiment
APIACEAE Lindley	*Magydaris panacifolia* (Vahl.) Lange and *Magydaris pastinacea* (Lam.) Paol (MP-Api-017 H)	Fafra, فافرة Fafra dyal 'am, فافرة ديال عام (One year old Fafra after one year, it dies) Fafra dyal 7 snine, فافرة ديال 7 سنين (Seven year old Fafra don't die)		Whole plant	Only plant aged of one year or seven years Exposed in the sun		Stimulates the milk of cows
APIACEAE Lindley	*Petroselinum crispum* (Mill.) (MP-Api-018 JHN)	Ma'dnous, المعدنوس	Kidney lithiasis (U14) Miscarriage (W82)	Leaves Stems	Decoction Fumigation	Oral Inhalation	Edible
APIACEAE Lindley	*Petroselinum crispum* subsp. *Crispum* (MP-Api-019 H)	Imzzi, إمزي ⵣⵎⵣⵣ	Kidney problems (U14)	Leaves Stems	Decoction	Oral	Edible Condiment
APIACEAE Lindley	*Pimpinella anisum* L. (MP-Api-020 JHN)	Habbat-Hlaoua, حبة حلاوة	Calm (P29) Gas (D08) Hormonal disturbance (T99)	Seeds	Infusion	Oral	Condiment
APIACEAE Lindley	*Ridolfia segestum* (L.) Moris (MP-Api-021 H)	Rbissbas ربسباس ⵔⴱⵣⵙⴱⴰⵙ		Stems			Edible

APOCYNACEAE Jussieu	*Nerium oleander* L. (Mp-Apo-001 JHN)	Tariret, تاريريت ⵜⴰⵔⵉⵔⵉⵜ Ariri, أريري ⴰⵔⵉⵔⵉ	Contamination (A29) Worms (for kids) (D96) Strengthens the bone (L29)	Leaves	Fumigation Mixed with barley flour until it become like a drug tablet	Inhalation Oral	Purifies the area Against the evil eye (The plant that grows in a place alone, they bring it and put it on the roof of the house)
ARECACEAE Berchtold & J. Presl	*Arisarum vulgare* O.Targ.Tozz. *Arum italicum* Mill. *Arum maculatum* L. (MP-Are-001 H)	Yerni, يرني ⵢⵔⵏⵉ Bgûgâ, بجوجا ⴱⴳⵓⴳⴰ Qanouch, قانوش ⵇⴰⵏⵓⵛ Zino'chay,زينوعشاي ⵣⵉⵏⵓⵄⵛⴰⵢ	Infectious disease (A78)	Tubers	Mixed with Nigella	Oral	Against magic
ARECACEAE Berchtold & J. Presl	*Phoenix dactylifera* L. (MP-Are-003 JHN)	En-Nekhla, النخلة Thini (les dattes), ثيني ⵜⵉⵏⵉ	Weakness (A04) General health (A29)	Fruits	Consumption	Oral	Edible
ARISTOLOCHIACEAE Jussieu	*Aristolochia longa* L. *Aristolochia baetica* L. (MP-Ari-001 JHN)	Bereztem, برزطم Anaffar, أنفار ⴰⵏⴰⴼⴼⴰⵔ	Scorpion stings (S12)	Roots	Powder	Cataplasm	
ASPARAGACEAE Jussieu	*Asparagus acutifolius* L. *Asparagus albus* L. *Asparagus pastorianus* Webb & Berthel. *Asparagus horridus* L. *Asparagus altissimus* Munby (MP-Aspa-001 JHN)	Sekum, سكوم Aza, أزا ⴰⵣⴰ Azwi, أزوي ⴰⵣⵡⵉ Tazzut, تازوت ⵜⴰⵣⵣⵓⵜ Assnan, أسنان ⴰⵙⵙⵏⴰⵏ Askoûm, أسكوم ⴰⵙⴽⵓⵎ Tasskoûnd, تسكوند ⵜⴰⵙⵙⴽⵓⵏⴷ	Abdominal pain (D01) Acne (S96)	Young plant shoots	Reduced to powder Decoction Soaked in oil	Oral External use	Edible

ASPARAGACEAE Jussieu	*Drimia maritima* (L.) Stearn (MP-Aspa-002 JH)	‘ansal, العنصل Dabcht wechen (Wolf onion), ذابت وشن ⵗⵄⵙⵜ ⵍⵙⵛⵙⵍ L-Bssayel,البصيل Far’ouna, فرعونة Rqanuch, رقنوش ⵕⵇⵏⵓⵛ Azalim n’wuchan, أزليم نوشن ⵄⵣⵍⵉⵎ ⵏⵍⵛⵙⵍ					
ASPHODELACEAE Jussieu	*Asphodelus tenuifolius* Cav. (MP-Asp-001 H)	L-Berwag, لبرواق Chinqussbaghra, شنقسباغرا ⵛⵉⵏⵙⵙⴱⴰⵖⵔⴰ Abrarez, أبراريز ⴰⴱⵔⴰⵔⵉⵣ					
ASTERACEAE Berchtold & J. Presl	*Artemisia arborescens* L. (MP-Ast-003 JHN)	Ashiba, اشيبة ⴰⵛⵉⴱⴰ	Common cold (R29)	Stems Leaves	Infusion	Oral	Drink
ASTERACEAE Berchtold & J. Presl	*Artemisia herba-alba* Asso (MP-Ast-004 JHN)	Es-Shih, الشيح Izri, إزري ⵉⵣⵔⵉ	Abdominal pain (D01) Coldness (A29)	Stems Leaves	Infusion	Oral	Drink
ASTERACEAE Berchtold & J. Presl	*Chamaemelum nobile* (L.) All. (MP-Ast-008 JHN)	Babounej, بابونج Maysaniya, مايسنية Thiwazith ثوازيث ⵅⵉⵍⴰⵔⵉⵅ Bakmlal, بكملال ⴱⴰⴽⵎⵍⴰⵍ Ghedo mlal غيدو ملال ⵖⵓⴰⵙ ⵎⵍⴰ	Gas (D08) Eye pain (F01)	Flowers	Infusion Compress	Oral External use	
ASTERACEAE Berchtold & J. Presl	*Cichorium intybus* L. (MP-Ast-009 JH)	Defaf, دفاف ⴷⵓⵀⴰⵀ		Leaves			Edible with Bakkoula (a Moroccan receipt), named Imzwar ⵉⵎⵔⵍⴰⵔ in Amazigh language
ASTERACEAE Berchtold & J. Presl	*Cynara cardunculus* L. (MP-Ast-010 JHN)	Rekhchof,رخوشف ⵔⴰⵅⵛⵓⵀ		Flower buds			Edible

ASTERACEAE Berchtold & J. Presl	*Cynara scolymus* L. (MP-Ast-011 JHN)	El-Quoq, القوق El-Qorni', القرنيع Thafgha, ثافغة ⵅⴰⵀⵅⴰ	Diarrhea (D11)	Flower buds Roots	Decoction	Oral	Edible production of Rayeb (Soured milk)
ASTERACEAE Berchtold & J. Presl	*Dittrichia viscosa* (L.) Greuter subsp. *viscosa* (MP-Ast-012 JHN)	مكرمان Magraman ⵍⴰⵅⵓⵍⴰ	Coldness (A29) General pain (A29)	Whole plant	Mixed with olive oil	External use	
ASTERACEAE Berchtold & J. Presl	*Glebionis coronaria* (L.) Tzvelev *Glebionis segetum* (L.) Fourr. (MP-Ast-014 JH)	Thigandast, ثيجنداست					
ASTERACEAE Berchtold & J. Presl	*Lactuca sativa* L. (MP-Ast-015 JHN)	L-khass, الخس Tchouga, تشوغا ⵜⵛⵓⵅⴰ		Leaves			Edible
ASTERACEAE Berchtold & J. Presl	*Matricaria chamomilla* L. (MP-Ast-016 JHN)	Mayssania, مايسنية	Gas (D08)	Flowers	Infusion Dry	Oral	
ASTERACEAE Berchtold & J. Presl	*Scolymus hispanicus* L. (MP-Ast-018 H)	Gernina, جرنينة ⵅⵓⵍⵄⵍⴰ Thelfafeth, ثلفافث ⵅⵓⵎⵀⴰⵀⵓⵅ		Young plant shoot			Edible
ASTERACEAE Berchtold & J. Presl	*Silybum marianum* (L.) Gaertn. (MP-Ast-020 JH)	Chouk L-Hmir, شوك الحمير Thafarth N'waghyur, ثافارث نْواغيور ⵅⴰⵀⴰⵓⵅ ⵍ'ⵍⴰⵖⵔⵓⵓ					
ASTERACEAE Berchtold & J. Presl	*Taraxacum obovatum* (Willd.) DC. (MP-Ast-021 H)	Awjdem, أوجدم ⴰⵍⵊⵏⵎ					
BORAGINACEAE Jussieu	*Echium plantagineum* L. *Echium horridum* Batt. (MP-Bo-002 H)	Bohamdone بوحمدون	Bladder complaint (U13)	Whole plant	Decoction	Oral	
BRASSICACEAE Burnett	*Brassica napus* L. *Brassica rapa* L. (MP-Br-001 JHN)	El-Left, اللفت Adjefet, أدجفت ⴰⵏⵊⵎⵀⵜ	Diseases of the respiratory system (R29)	Roots	Syrup	oral	Edible
BRASSICACEAE Burnett	*Brassica oleracea* L. (MP-Br-003 JHN)	Kroumb,كرومب Aqulis, أقوليس ⴰⵇⵓⵎⵙ		Inflorescences			Edible

BRASSICACEAE Burnett	*Eruca vesicaria* (L.) Cav. (MP-Br-004 JH)	Garninoch, جرنينوش ⵅⴰⵔⵏⵉⵛ					
BRASSICACEAE Burnett	*Raphanus sativus* L. (MP-Br-006 JHN)	Lfjel, لفجل Thachlacht, ثاشلاشت ⵅⴰⵛⵎⴰⵛⵜ		Roots			Edible
CACTACEAE Jussieu	*Opuntia ficus-indica f. amyclaea* (Ten.) Schelle *Opuntia ficus-indica* (L.) Mill. (MP-Cac-001 JHN)	Es-Sebar,الصبار Nwar l-Hendiya, نوار الهندية Az-za'boula, الزعبولة Ifoudha, إيفوذا ⵉⴼⵓⴹⴰ Thahandicht, ثاهندشت ⵅⴰⴷⴰⵏⵉⵛⵜ	Diarrhea (D11) Coldness (A29) Hemorrhoid (K96)	Fruits Sap Thorns Flowers	Consumption Friction Dry Grind	Oral External use	Edible Cosmetic Natural hair dye
CARYOPHYLLACEAE Jussieu	*Herniaria hirsuta* L. (MP-Car-003 JH)	Asquan, أَسْقَّانْ ⴰⵙⵇⴰⵏ Herrâss L-hjer, هُرَّاسْ الحْجْر	Kidney problem (U14)	Whole plant	Decoction	Oral	
CARYOPHYLLACEAE Jussieu	*Paronychia arabica* (L.) DC. *Paronychia argentea* Lam. (MP-Car-004 H)	Tahidorit, تهيدوريت ⵜⴰⴷⵉⵔⵉⵜ Atay dial'arab, آتاي العرب Afrir, أفرير ⴰⴼⵔⵉⵔ		Whole plant			Its odor smelled at night Useful for livestock
CISTACEAE Jussieu	*Cistus crispus* L. *Cistus albidus* L. *Cistus monspeliensis* L. (MP-Ci-001 H)	Tasemmakht, تاسماخت ⵜⴰⵙⵎⵎⴰⵅⵜ Affazzaz, أفزاز ⴰⴼⴰⵣⵣⴰⵣ		Seeds	Grind		Was once used as baby powder
CONVOLVULACEAE Jussieu	*Convolvulus arvensis* L. *Convolvulus althaeoides* L. *Convolvulus siculus* L. (MP-Co-001 JH)	Lawaya, اللوايا Dhmanat,ذْمَانَاتْ ⵃⵎⴰⵏⴰⵜ	Wound (S18) Stop the hemorrhage (A10)	Whole plant Limbs	Use as a bandage Friction	External use	Purify drinking water for livestock
CUCURBITACEAE Jussieu	*Citrullus colocynthis* (L.) Schrader (MP-Cu-001 HN)	L-handhal, الحنظل Ariri, أَرِيرِي ⴰⵔⵉⵔⵉ Hadj, حدج ⵀⴰⵊⵊ	Jaundice (D13)	Fruits	Moxibustion	External use	
CUCURBITACEAE Jussieu	*Citrullus lanatus* (Thunb.) Matsum. & Nakai (MP-Cu-002 JHN)	Ed-deli',الدليع Delah, دلاح Taleggust, تالجوست ⵜⴰⵍⵉⵅⵅⵓⵙⵜ	Fever (A03) Diuretic (U08) Kidney problem (U14)	Fruits Pulp Barks	Consumption Decoction	External use Oral	Edible
CUCURBITACEAE Jussieu	*Cucumis melo* L. (MP-Cu-003 JHN)	Swihla, سويهلة	Refreshing (A29)	Fruits	Consumption	Oral	Edible

CUCURBITACEAE Jussieu	*Cucumis sativus* L. *Cucumis melo* L. subsp. *Melo* (MP-Cu-004 JHN)	l-khyar, الخيار (*Cucumis sativus L.)* Bino, بينو ⵖⴻⵉⵣ Fagouss, فقوس (*Cucumis flexuosus L.)* Aghasim, أغسيم ⴰⵖⴰⵙⵉⵎ		Fruits			Edible Cosmetic
CUCURBITACEAE Jussieu	*Cucurbita maxima* Duchesne (MP-Cu-005 JHN)	Ger'a Hamra,جرعة الحمراء Takhsacht Tazwaght, تاخساشت تازواغت ⵜⴰⵅⵙⴰⵛⵜ ⵜⴰⵣⵡⴰⵅⵜ	Constipation (D12)	Fruits	Cooked	Oral	Edible
CUCURBITACEAE Jussieu	*Cucurbita pepo* L. (MP-Cu-006 JHN)	Ger'a,كرعة Takhsacht, تاخساشت ⵜⴰⵅⵙⴰⵛⵜ		Fruits			Edible
CUCURBITACEAE Jussieu	*Ecballium elaterium* (L.) A. Rich. (MP-Cu-007 H)	Függus-l-hmir, فقوس الحمير	Eye pain (F01) Hemorrhoid (K96)	Fruits	Pressed Mixed with olive oil Friction Dry Grind	Eye droops	
CUPRESSACEAE Rich. Ex Bartl.	*Juniperus phoenicea* L. (MP-Cup-002 JHN)	L-'ar'ar, العرعار Amdzi, أمضزي ⴰⵎⴷⵣⵉ	Eczema (S87) Blisters on the feet (S17)	Leaves	Dry Grind Mixed with Hennah	Cataplasm	
CUPRESSACEAE Rich. Ex Bartl.	*Tetraclinis articulata* (Vahl) Mast. (MP-Cup-003 JHN)	L-'ar'ar, العرعار Amdzi, أمضزي ⴰⵎⴷⵣⵉ Amdri,أمضري ⴰⵎⴷⵔⵉ Quochor l-'ar'ar, قشور العرعار	Eczema (S87) Stomachache (D01) Fracture (L76) Inflammation (A29) Wound (S18)	Leaves Barks	Decoction Powder	Oral External use	
CYPERACEAE Jussieu	*Cyperus esculentus* L. (MP-CY-001 JHN)	Tharma, ثارمة ⵜⵄⵎⴰ					
ERICACEAE Jussieu	*Arbutus unedo* L. (MP-Er-001 JH)	Sasnu, ساسنو ⵙⴰⵙⵏⵓ Bû-Khanu, بوخنو ⴱⵓⵅⴰⵏⵓ		Fruits			Edible
ERICACEAE Jussieu	*Calluna vulgaris* (L.) Hull *Erica multiflora* L. *Erica cinerea* L. *Erica scoparia* L. *Erica arborea* L. (MP-Er-002 H)	Boukheddad, بوخداد ⴱⵓⵅⴷⴰⴷ					
EUPHORBIACEAE Jussieu	*Euphorbia helioscopa* L. (MP-Eu-001 H)	Tafura, تافورة ⵜⴰⴼⵓⵔⴰ		Whole plant			Purifies water

EUPHORBIACEAE Jussieu	*Ricinus communis* L. (MP-Eu-005 JHN)	L-Kharoua', الخروع Lassmâkhat, الشجرة لما تهزها ريح (literally a tree not shaken by the wind) ⵍⵍⴰⵙⵎⴰⵅⴰⵜ	General health (A29)	Seeds Leaves	Oil Decoction	External use Oral	Cosmetic
FABACEAE Lindley	*Ceratonia siliqua* L. (MP-Fab-003 JHN)	L-kharoub,الخروب Ikchouan, اكشاون ⵉⴽⵛⵓⴰⵏ Tasrighoua (l'arbre), تَسْرِيغْوَ (الشجرة) ⵜⴰⵙⵔⵉⵖⵓⴰ Iquassoûne (Le fruit), إِيقَاسُّونْ (الثمرة) ⵉⵇⴰⵙⵙⵓⵏ	Abdominal pain (D01)	Fruits	Mixed with honey Grind	Oral	Edible Production of chocolate
FABACEAE Lindley	*Cicer arietinum* L. (MP-Fab-004 JHN)	L-Hûmoss,الحمص		Seeds			Edible Cosmetic (the water of chickpeas used to wash the face)
FABACEAE Lindley	*Lens culinaris* Medik. (MP-Fab-008 JHN)	'Des, عدس	Constipation (D12) Anemia (B78)	Seeds	Consumption Powder	Oral	Edible
FABACEAE Lindley	*Ononis natrix* L. *Ononis tournefortii* Coss. (MP-Fab-011 JH)	Afezzâz, أَفْزَّازْ ⴰⵃⴰⵣⴰⵣ saboun la3zara, صابون العزارة Ech-Chebreg, الشبرك	Wound (S18)	Roots	Friction Trituration	External use Cataplasm	
FABACEAE Lindley	*Pisum sativum* L. (MP-Fab-012 JHN)	Jelban, جلبان Thinifin, ثينيفين ⵅⵉⵏⵉⵃⵉⵏ		Pods			Edible
FABACEAE Lindley	*Retama monosperma* (L.) Boiss. *Retama raetam* (Forssk.) Webb *Retama sphaerocarpa* (L.) Boiss. (MP-Fab-013 JH)	Asfud, أسفود ⴰⵙⵃⵓⴷ					
FABACEAE Lindley	*Senna alexandrina* Mill. (MP-Fab-014 JHN)	Es-sana, السانا	Constipation (D12)	Leaves	Infusion	Oral	

FABACEAE Lindley	*Trigonella foenum-graecum* L. (MP-Fab-015 JHN)	L-Helba, الحلبة Thifidas, ثفيداس ⵅⴻⵀⴻⴰ⊙	Weight gain (T07) Hair loss (S23) Lactation problem (W19)	Seeds	Consumption Mixed with olive oil and hide in the shade	Oral External use	Condiment
FABACEAE Lindley	*Vicia ervilia* (L.) Wild. (MP-Fab-016 JH)	khassa خاسة ⵅ⊙⊙⊙ Quenassen, قناسن ⵣⵗⵍ⊙⊙ⵗⵍ	Continuous cough (R05)	Seeds	Soaked	Oral	
FABACEAE Lindley	*Vicia Faba* L. (MP-Fab-017 JHN)	L-Foul,الفول Ibaouan, إباون ⴻⵖⵙⵗⵍ		Pods Seeds			Edible
FABACEAE Lindley	*Vicia sativa* L. (MP-Fab-018 HN)	Ibaouan, إباون ⴻⵖⵙⵗⵍ		Pods Seeds			Edible
FAGACEAE Dumortier	*Castanea sativa* Mill. (MP-Fag-001 JHN)	L-Quastel, القسطل		Fruits			Edible
FAGACEAE Dumortier	*Quercus rotundifolia* Lam. *Quercus ilex* L. (MP-Fag-003 JHN)	L-belout, البلوط Abjout,أبجوط ⵄⵖⵊⵟⵉ Kûrrîch, كريش ⵣⵟⵔⴻⵛ		Nuts			Edible
FAGACEAE Dumortier	*Quercus suber* L. (MP-Fag-004 JHN)	Ider, إيدر ⴻⵏⵗⵔ Abajouth أبجوض ⵄⵖⵊⵟⵊ		Nuts			Edible
IRIDACEAE Jussieu	*Crocus sativus* L. (MP-Ir-001 JHN)	Ze'frane, زعفران Kerkouz, كركوز ⵣⵗⵔⵟⵣ		Pistils			Edible
IRIDACEAE Jussieu	*Iris germanica* L. *Iris pseudacorus* L. (MP-Ir-002 H)	Iris, إريس ⴻⵔⴻ⊙					
JUGLANDACEAE Perleb	*Juglans regia* L. (MP-Jug-001 JHN)	L-Grga', لكركاع Taghyachet, تغياشت ⵜⵔⵅⵔⵛⵗⵜ Agusim, أجوسيم ⵄⵅⵟⵔⴻⵆ	Memory disturbance (P20)	Nuts	Consumption	Oral	Edible
JUNCACEAE Jussieu	*Juncus maritimus* Lam. (MP-Jun-001 JH)	Zeri'at Azlaf, زريعة أزلاف Ssmâr, الصَّمَّار ⊙ⵗⵆⵆⵔⵔ Azraf, أزراف ⵄⵣⵔⵔⵀ	Coldness (A29)	Seeds	Decoction	Oral	
LAMIACEAE Martynov	*Ajuga iva* (L.) Schreb (MP-Lam-001 H)	Chendgoura,شندكورة Touf Tolba, توف طلبة Thiminar, ثمينار ⵅⴻⵆⴻⵍⵔ	Abdominal pain (D01) Burn (S14) Bladder complaint (U13) Dysuria (U01) Uterus complaint (X29) Skin complaint (S29)	Leaves	Cooked Burn with oil Infusion, add some honey and drink in the morning before you eat Water in its leaves	Oral External use	

LAMIACEAE Martynov	*Clinopodium nepeta subsp. spruneri* (Boiss.) Bartolucci & F.Conti (MP-Lam-002 JHN)	Ze'itra,زعيترة Assahta , السحثا ⴰⵙⵙⴰⵃⵜⴰ	Common cold (R29) Stomachache (D01) Coldness (A29) Blood pressure (K85) Hyperglycemia (T90) Contamination (A29) Stomachache for babies (D01) Calm babies (P29)	Leaves	Infusion Fresh Dry	Oral Inhalation	Against the evil eye Purifies the area
LAMIACEAE Martynov	*Lavandula stoechas* L. (MP-Lam-003 JHN)	L-Khzama,الخزامى L-Halhal,حلحال ⵃⴰⵍⵃⴰⵍ	Common cold (R29) Kidney pain (U14) Bowl movements (D18)	Whole plant	Dry Decoction Mixed with the water of sea	Oral Inhalation External use	Against humidity
LAMIACEAE Martynov	*Marrubium vulgare* L. (MP-Lam-004 JH)	Mrioua,مريوة Manta, مانتة ⵎⴰⵏⵜⴰ Minta,مِنْتَه ⵎⵉⵏⵜⴰ Mriyoiya,مريويا ⵎⵔⵉⵢⵉⵢⴰ Myirou,ميرو ⵎⵢⵉⵔⵓ Myarou,ميارو ⵎⵢⴰⵔⵓ Maro مارو ⵎⴰⵔⵓ	Antiseptic (A29) Toothaches (D19) Coldness (A29) Childbirth (W90) Lung diseases (R99) Hypertension (K86) Stomachache (D01)	Whole plant	Decoction	Oral Gargle	To clean clothes
LAMIACEAE Martynov	*Mentha pulegium* L. *Mentha gattefossei* Maire (MP-Lam-005 JHN)	Fliyo, فليو Friyo, فريو ⵀⵔⵉⵢⵓ Menta, منتة ⵎⵏⵜⴰ	Common cold (R29) Coldness (A29) Vertigo (N17)	Leaves	Dry Fresh Infusion Trituration	Oral	Condiment Edible Repels mosquitoes
LAMIACEAE Martynov	*Mentha spicata* L. *Mentha villosa* Huds. (MP-Lam-006 JHN)	Liqâma d-atay, ليقامة آتاي Ne'na' l-beldi, النعناع البلدي	Burn (S14) Toothache (D19)	Leaves Stems	Infusion Chew	Cataplasm	Edible

LAMIACEAE Martynov	*Mentha suaveolens* Ehrh. (MP-Lam-007 JH)	Timîjjâ, تِيمِيجًا ⵜⵉⵎⵉⵊⵊⴰ Ne'na' es-soufi, نعناع الصوفي Mchichtrou, ⵎⵛⵉⵛⵜⵔⵓ Mchichrou, ⵎⵛⵉⵛⵔⵓ Timoujjâ, تموجة ⵜⵉⵎⵓⵊⵊⴰ Tamrsat, تمرسات ⵜⵎⵔⵙⵜ	Common cold (R29) Urinary calculus (U95) Coldness (A29) Sleep disturbance (P06)	Leaves Stems	Put in the shade and then in water Infusion	Oral	Replace baker's yeast A culinary plant that adds flavor to beans Can be add with a traditional meal "Ftera Sama" what mean "Deaf pie" Condiment
LAMIACEAE Martynov	*Mentha piperita* L. (MP-Lam-008 JHN)	Ne'na', نعناع Minta, منتة ⵎⵏⵜⴰ Timîjjâ, تِيمِيجًا ⵜⵉⵎⵉⵊⵊⴰ	Burn (S14)	Leaves	Trituration	Cataplasm	Condiment Edible
LAMIACEAE Martynov	*Origanum compactum* Benth. *Origanum elongatum* (Bonnet) Emb. & Maire *Origanum elongatum* (Bonnet) Emb. & Maire (MP-Lam-010 JHN)	Za'tar, زعتر Sahtar,صحتر ⵙⴰⵀⵜⴰⵔ Zoy (the male), زوي (ذكر) ⵣⵓⵖ Zoyt (the female), زويت (أنثى) ⵣⵓⵖⵜ	Common cold (R29) Menstrual pain (X02) Coldness (A29) Stomachache (D01) Diarrhea (D11) Calm (P29) Hair loss (S23)	Leaves	Dry Decoction Spraying Infusion Mixed with honey and pomegranate bark)	External use Oral	Helps to preserve figs, they put it in a straw hut bag named "Ahhmâr" أحمَّار Honey seasoning
LAMIACEAE Martynov	*Origanum majorana* L. (MP-Lam-011 JHN)	Merdedouch, مرددوش	Hormonal problem (T99)	Leaves	Dry Infusion	Oral	
LAMIACEAE Martynov	*Salvia officinalis* L. (MP-Lam-012 JHN)	Es-Salmiya, السالمية	Hyperglycemia (T90)	Whole plant	Infusion Dry	Oral	Drink Edible

LAMIACEAE Martynov	*Salvia rosmarinus* Schleid. (MP-Lam-013 JHN)	Azîr, أزير Inkri, إنكري ⵅⵏⴽⵔⵉ Inkkhri, إنْكْخْرِي ⵅⵏⴽⵅⵔⵉ Iklil Al Jabal, إكليل الجبل	Common cold (R29) Abdominal pain (D01) Coldness (A29) Blood pressure (K85) Hyperglycemia (T90) Contamination (A29) Stomachache for babies (D01) Calm babies (P29)	Leaves Inflorescences	Infusion Dry Decoction Fumigation Mixed with oil	Oral Inhalation	Purifies the area Against the evil eye
LAMIACEAE Martynov	*Teucrium polium* L. (MP-Lam-015 JHN)	Edja'da, الجعدة Ayrar, أيرار ⴰⵢⵔⴰⵔ					
LAMIACEAE Martynov	*Vitex agnus-castus* L. (MP-Lam-017 H)	Angaref, أنجارف ⴰⵏⵊⴰⵔⴼ					
LAURACEAE Jussieu	*Cinnamomum cassia* (L.) J. Presl (MP-Lau-001 JHN)	Querfa, قرفة Al-Qarfat, القرفت ⴰⵍ ⵇⴰⵔⴼⴰⵜ	Menstrual pain (X02)	Barks	Infusion Powder	Oral	Spice
LAURACEAE Jussieu	*Persea americana* Mill. (MP-Lau-003 H)	لافوكا l'avocat Thabukat, ثابوكات ⵜⴰⴱⵓⴽⴰⵜ	Sexual desire reduced (P07) Hair care (S24)	Fruits	Mixed with olive oil Juice	Cataplasm Oral	Edible
LINACEAE Perleb	*Linum usitatissimum* L. (MP-Li-001 JHN)	Zeri'at El-Ketân, زريعة الكتان	Constipation (D12) Hair care (S24) Excessive appetite (T02) Strengthens the bone (L29)	Seeds	Powder Decoction	Oral Cataplasm	Cosmetic Hair dye
LYTHRACEAE Jaume Saint-Hilaire	*Lawsonia inermis* L. (MP-Ly-001 JHN)	l-Hennah, الحنة Rehna, رحنى ⵔⵃⵏⴰ	Weakness (A04)	Leaves	Dry Powder	Cataplasm	Hair dye To color the hands and feet For use in ceremonies
LYTHRACEAE Jaume Saint-Hilaire	*Punica granatum* L. (MP-Ly-002 JHN)	Armân Ez-Zefry, Er-Român,(الرمان) أَرْمَانْ الزُفْرِي ⴰⵔⵎⴰⵏ ⵣⵣⴼⵔⵉ ⵔⵓⵎⴰⵏ Aquchodrmân, Quchour Er-Rôman, أَقُشُوذْرْمَّانْ (قشور الرمان) ⴰⵇⵛⵛⵓⵔ ⵏ ⵔⵓⵎⴰⵏ	Stomachache (D01) Hemorrhoids (K96) Hair loss (S23)	Fruits Barks	Dry Decoction Mixed with honey	Oral External use	Edible

MALVACEAE Jussieu	*Abelmoschus esculentus* (L.) Moench (MP-Ma-001 JH)	Mloukhiya,ملوخية Thamlukhith, ثاملوخيث ⵅⴰⵛⵍⵓⵅⴻⵅ		Fruits			Edible
MALVACEAE Jussieu	*Alcea rosea* L. (MP-Ma-002 H)	Taridant, تاريضانت ⵜⴰⵔⵉⴹⴰⵏⵜ					
MALVACEAE Jussieu	*Gossypium herbaceum* L. (MP-Ma-003 JHN)	L-Qotn,القطن Reqten رقطن ⵔⴰⵇⵟⵏ		White fibers			Used in the clothing industry
MALVACEAE Jussieu	*Malva sylvestris* L. *Malva parviflora* L. (MP-Ma-004 JHN)	L-baquoula, البقولة Ighdiouene, اغدوينⵉⴳⴷⵡⵉⵏⵉ Imzouar, إمزوار ⵉⵎⵣⵡⴰⵔ Imzouane, إمزوان ⵉⵎⵣⵡⴰⵏ L-Khobiza, الخبيزة	Constipation (D12)	Whole plant	Consumption Decoction	Oral	Edible
MORACEAE Gaudichaud	*Ficus carica* L. (MP-Mo-001 JHN)	L-Kermouss, الكرموس Thazareth, ثَزَاْرثْ ⵜⴰⵣⴰⵔⵉⵜ Tazzate تازات ⵜⴰⵣⵣⴰⵜ	Coldness (A29) Constipation (D12)	Fruits	Dried in the sun to become Chriha and administered a small dose to tea.	Oral	Edible
MORACEAE Gaudichaud	*Morus alba* L. *Morus nigra* L. (MP-Mo-002 JHN)	Tût Al Bari, التوت البري Tagzilt , تاكزيلت ⵜⴰⴽⵣⵉⵍⵜ		Fruits			Edible
MYRTACEAE Jussieu	*Eucalyptus globulus* Labill. (MP-Myrt-001 JHN)	Kaliptousse,كاليبوتس	Common cold (R29)	Leaves Limbs	Fumigation	Inhalation	Honey of the *Eucalyptus globulus* Labill. is one of the best
MYRTACEAE Jussieu	*Myrtus communis* L. (MP-Myrt-002 JH)	Rihane, ريحان	Pregnancy (W78) Hair Loss (S23)	Leaves	Infusion Oil	Oral External use	
MYRTACEAE Jussieu	*Syzygium aromaticum* (L.) Merr. & Perry (MP-Myrt-003 JH)	L-Qronfel, القرنفل 'Oud En-Nouar, عود النوار	General pain (A29) Toothaches (D19) Gum disease (D19)	Cloves	Implanted in the teeth Decoction Powder	Gargle	Spice
NITRARIACEAE Lindley	*Peganum harmala* L. (MP-Ni-001 JHN)	L-Hermel, الحرمل	Nightmare (P06)	Whole plant		Under the pillow	Against Jinn

OLEACEAE Hoffmannsegg & Link	*Olea europaea* L. subsp. *europaea var. europaea* (MP-Ol-003 JHN)	Zaytoûne, زيتون	Diabetes (T90) Influenza (R80) Acne (S96) Wound (S18) Gum diseases (D19) Hair loss (S23)	Fruits Leaves	Infusion Oil Grind Mixed with Hennah Compress	Oral External use Gargle	Edible Cosmetic
OLEACEAE Hoffmannsegg & Link	*Olea europaea* subsp. *Europaea var. Sylvestris* (L.) (Mill.) Lehr (MP-Ol-004 JHN)	Zebbûj,الزبوج Azemmur (wild olive tree) ⴰⵣⵎⵎⵓⵔ	Diabetes (T90) Influenza (R80)	Fruits Leaves	Infusion Oil	Oral External use	Edible Cosmetic Oil of wild olive is more expensive than cultivar olive
OLEACEAE Hoffmannsegg & Link	*Phillyrea angustifolia* L. *Phillyrea latifolia* L. (MP-Ol-005 H)	Qtom, قطم Imtutel, إمتوتل ⵉⵎⵜⵓⵜⵉⵍ metwal,متول ⵎⵜⵡⴰⵍ	Joint pain (L20)	Leaves	Powder Boiled	Cataplasm	Edible
PAPAVERACEAE Jussieu	*Papaver rhoeas* L. *Papaver pinnatifidum* Moris (MP-Pa-002 JHN)	Bela'mâne (Bena'mâne), بلعمان (بنعمان) Thawsisent, ثاوسيسنت ⵜⴰⵡⵙⵉⵙⵏⵜ					
PEDALIACEAE R. Brown	*Sesamum indicum* L. (MP-Pe-001 JHN)	Zenjlane, زنجلان	Hair loss (S23)	Seeds	Oil	External use	Edible

PINACEAE Lindley	*Pinus halepensis* Mill. (MP-Pi-002 JH)	Zombay dayda, زمباي دايدا ⵣⵙⵔⵜⵔ ⵯⵔⵯⵯⵔ Sanuwbar, صنوبر		Fruits			They put the fruit in the "Leben" but they don't know why. Some say that it is perhaps to give more strength when they prepare "Leben" Others say that maybe to keep it in good conditions
PLANTAGINACEAE Jussieu	*Globularia alypum* L. (MP-Pl-001 JH)	'ayen lerneb, عين الأرنب Teselghaght, تسلغاغت ⵜⵔⵙⵍⵖⵔⵖⵜ Taslgha, تاسلغا ⵜⵔⵙⵍⵖⵔ					
PLANTAGINACEAE Jussieu	*Plantago afra* L. (MP-Pl-002 JH)	Aghennab yegar, أغناب يجار ⵔⵖⵙⵍⵔⵙ ⵣⵣⵔⵙ					
PLANTAGINACEAE Jussieu	*Plantago major* L. *Plantago coronopus* L. (MP-Pl-003 JHN)	Bard o salam,برد و سلام Zentet l-khrouf, زنطيط الخروف	Burn (S14)	Leaves	Grind	Cataplasm	
POACEAE Barnhart	*Ampelodesmos mauritanicus* (Poir.) T.Durand & Schinz (MP-Poa-001 H)	Adles, dis, أدليس ,ديس ⵔⵄⵍⵣⵙ Azrif, أزريف ⵔⵜⵙⵣⵛ		Stover			It's a primary material for the manufacture of carpets and brooms
POACEAE Barnhart	*Arundo donax* L. (MP-Poa-003 JH)	l-qsab, القصب		Stems Leaves			Help to get rid of ants

POACEAE Barnhart	*Avena sativa* L. (MP-Poa-004 JHN)	l-khratâl, الخرطال Tmsikhth, تمسيخت ⵜⵎⵙⵉⵅⵝ		Seeds			Edible Cosmetic (facial mask)
POACEAE Barnhart	*Cenchrus americanus* (L.) Morrone (MP-Poa-005 JHN)	Ilân, إيلان	Fracture (L76)	Seeds	Consumption	Oral	
POACEAE Barnhart	*Cynodon dactylon* (L.) Pers. (MP-Poa-007 H)	En-Njel, النْجْلْ Agzmil, أكزميل ⴰⴳⵣⵎⵉⵍ	Excessive thirst (T01)	Roots	Squeeze	Oral	Jam Eaten by livestock
POACEAE Barnhart	*Hordeum vulgare* L. (MP-Poa-008 JHN)	Es-s'îr, الشعير		Seeds			Edible
POACEAE Barnhart	*Oryza sativa* L. (MP-Poa-009 JHN)	Al-rôz, الروز	Hair care (S24) Lighten the complexion (S29) Diarrhea (D11)	Seeds	Consumption Water of rice	Oral External use	Edible
POACEAE Barnhart	*Triticum aestivum* L. *Triticum turgidum* L. *Triticum turgidum* subsp. *durum* (Desf.) Husn. (MP-Poa-014 JHN)	Tahin Fors, طحين الفورص Lfarina, فرينة l-gemh, القمح Imndi إمندي ⵉⵎⵏⴷⵉ	General health (A29) Burn (S14)	Seeds	Grind Compress	External use	Edible
POACEAE Barnhart	*Zea mays* L. (MP-Poa-015 JHN)	Ad-Dora, الذرة Izumbiyan, إزومبيان ⵉⵣⵓⵎⴱⵉⵢⴰⵏ Asangar, أسنجار ⴰⵙⵏⴳⴰⵔ Azumbi, أزومبي ⴰⵣⵓⵎⴱⵉ	Common cold (R29) Anemia (B78)	Seeds Ears of corn	Consumption	Oral	Edible
PORTULACACEAE Jussieu	*Portulaca oleracea* L. (MP-Por-001 JH)	Rejla, الرجلة Darztche, ذارزتشⴹⴰⵔⵣⵜⵛ	Bowel movements (D18) Stomachache (D01)	Whole plant	Consumption	Oral	Edible
PTERIDACEAE E.D.M.Kirchn	*Pteris aquilina* (L.) Kuhn (MP-Pt-002 JHN)	Farsiwa فريسوة ⴼⴰⵔⵙⵉⵡⴰ					Decorative plant
RANUNCULACEAE Jussieu	*Adonis aestivalis* L. *Adonis annua* L. (MP-Ra-001 H)	Thawsissent, ثاوسيسنت ⵝⴰⵡⵙⵉⵙⴻⵏⵜ					
RANUNCULACEAE Jussieu	*Nigella sativa* L. *Nigella damascena* L. *Nigella arvensis* L. (MP-Ra-003 JHN)	Sanûj, سانوج Habba es-sawda, حبة السوداء	Cancer (A79)	Seeds	Consumption Mixed with honey	Oral	Condiment In the case of abused use, it's toxic.

RESEDACEAE Martinov	*Reseda luteola* L. (MP-Re-003 H)	Yezmar, يزمار ⵢⵣⵉⵎⴰⵔ					
RHAMNACEAE Jussieu	*Ziziphus lotus* (L.) Lam. (MP-Rh-002 JHN)	Sedra, السدرة Azad, أزاد ⴰⵣⴰⴷ Tazuggwart, تزكورت ⵜⴰⵣⵓⵖⵡⴰⵔⵜ Nnbeg, نبق	Abdominal pain (D01) Corn at feet (S20)	Fruits	Consumption	Oral	Honey of the *Ziziphus lotus* L.is one of the best For Roquia boil an odd number of leaves
ROSACEAE Jussieu	*Crataegus monogyna var. lasio*carpa (Lange) K. I. Chr. *Crataegus monogyna* Jacq. (MP-Ro-001 H)	Âdmâm, أدمام	Diarrhea (D11)	Fruits	Consumption	Oral	Edible
ROSACEAE Jussieu	*Cydonia oblonga* Mill. (MP-Ro-002 JHN)	Sferjel, السفرجل Takthuna, تاكثونة ⵜⴰⴽⵅⵓⵏⴰ		Fruits			Edible
ROSACEAE Jussieu	*Malus domestica* Borkh. (MP-Ro-003 JHN)	Tefâh,التفاح Adhaffu, أضفو ⴰⵄⵀⵀⵓ		Fruits			Edible
ROSACEAE Jussieu	*Prunus armeniaca* L. (MP-Ro-004 JH)	Rmechmach, رمشماش ⵔⵎⵛⵎⴰⵛ	Facial brown spots (S08) Melasma (S08)	Fruits Seeds Almonds	Chew	External use	Edible
ROSACEAE Jussieu	*Prunus avium* (L.) L. *Prunus cerasus* L. (MP-Ro-005 JHN)	Habb l-mlouk, حب الملوك Ardlim, أردليم ⴰⵔⴷⵍⵉⵎ		Fruits			Edible
ROSACEAE Jussieu	*Prunus domestica* L. (MP-Ro-006 JH)	Baqoq, بقوق ⴱⴰⵇⵓⵇ		Fruits			Edible
ROSACEAE Jussieu	*Prunus dulcis* (Mill.) D. A. Webb (MP-Ro-007 JHN)	Louz mor, لوز مر Ajouz, أجوز ⴰⵊⵓⵣ Assmoum, أسموم, (Almonds that have not yet matured), اللوز لي باقي ماطابش ⴰⵎⴰⵟⴰⴱⵛ	Hair care (S24) Beautifies the skin (S29)	Almonds	Oil Almonds that have not yet matured mixed with the hay and exposed the sun during 2 days	External use	Edible Cosmetic use Useful for livestock
ROSACEAE Jussieu	*Prunus persica* (L.) Stokes (MP-Ro-008 JHN)	Khûkhu, الخوخ Afersghu, أفرسغو ⴰⵀⵔⵙⵖⵓ	Cancer (A79) Worms (D96)	Fruits Seeds Leaves	Consumption Dry Grind	Oral Cataplasm	Edible

ROSACEAE Jussieu	*Pyrus communis* L. (MP-Ro-009 JHN)	Bû-'wid, بوعويد Firas, فيراس ⵀⵉⵔⴰⵙ		Fruits			Edible
ROSACEAE Jussieu	*Rosa canina* L. (MP-Ro-010 H)	Tighfert, تغفرت ⵜⵖⵖⵀⵉⵔⵜ					
ROSACEAE Jussieu	*Rosa x centifolia* L. *Rosa x damascena* Mill. (MP-Ro-011 JHN)	Werd beldi, الورد البلدي	Tones the skin (S29) Fever (A03) Constipation (D12) Hair loss (S23) Earache (H01) Eye pain (F01)	Petals	Put a cotton ball soaked in rose water on your face at night before going to sleep Spraying Decoction Mixed with Hennah Filtration	External use Oral Ear drops Eye drops	Cosmetic
ROSACEAE Jussieu	*Rubus ulmifolius* Schott. (MP-Ro-012 JH)	L-'liq, العليق Akhechab, أخشاب ⴰⵅⵉⵛⵛⴰⵀ Tabgha, تابغا ⵜⴰⵀⵖⴰ		Fruits			Edible
RUTACEAE Jussieu	*Citrus × aurantium amara* Engl. (MP-Rut-001 JHN)	Er-renj,الرنج		Fruits Flowers			Edible Jam Used in the preparation of flower water (Ma-zher)
RUTACEAE Jussieu	*Citrus × aurantium* L. (MP-Rut-002 JHN)	Letsîn, لتشين Nouar l-bortoqal, نوار البرتقال	Tones the skin (S29) General health (A29) Heat stroke sun (A29)	Fruits Flowers Barks	Friction Juice Infusion Compress	External use Oral	Edible Juice Used in the preparation of flower water (Ma-zher)
RUTACEAE Jussieu	*Citrus × limon* (L.) Burm. fil. *Citrus × aurantiifolia* (Christm.) Swingle (MP-Rut-003 JHN)	Al-laimoin,الليمون Al-lim, الليم L-Hamed, الحامض Arkas, أركاس ⴰⵕⴰⴽⴰⵙ	Common cold (R29) Dandruff (S24) Itching (S29)	Fruits	Juice with honey Friction	Oral	Edible Juice
RUTACEAE Jussieu	*Ruta montana* L. *Ruta chalepensis* L. (MP-Rut-004 H)	Aourem, أورم ⴰⵓⵔⵎ	Bladder complaint (U13) Rheumatism (L99) Scorpion stings (S12)	Leaves	Friction	External use	Against Jinn

SALICACEAE Mirbel	*Populus alba* L., *Populus nigra* L., *Populus euphratica* Olivier (MP-Sali-001 JHN)	Sefsaf, صفصاف	Common cold (R29)	Leaves Limbs	Decoction	Inhalation Oral	
SALVADORACEAE Lindley	*Salvadora persica* L. (MP-Salv-001 JHN)	Siwak, سواك	Whitened teeth (D19) Strengthen the gums (D19)	Roots	Brush	External use	Use as a toothpick
SCHISANDRACEAE Blume	*Illicium verum* Hook. fil. (MP-Sch-001 JHN)	‘roq Al Najm, عروق النجم Azmir, أَزْمِيرْ ⵄⴰⵣⵎⵉⵔ Al Najm, النجم	Coldness (A29)	Fruits	Infusion	Oral	Condiment
SCROPHULARIACEAE Jussieu	*Verbascum sinuatum* L. (MP-Sc-001 H)	Igangan, إجنجان ⴻⵊⵏⴰⵊⴰⵏ	Acne (S96)	Leaves	Trituration	External use	
SOLANACEAE Jussieu	*Capsicum frutescens* L. (MP-So-001 JHN)	Felfel hârr, فلفل حار	Loss of appetite (T03) Headache (N01)	Fruits	Consumption	Oral	Condiment
SOLANACEAE Jussieu	*Lycium schweinfurthii* Dammer *Lycium barbarum* L. (MP-So-003 H)	Izarki, إزركي ⴻⵣⵔⴰⵇⵉ		Fruits			Edible
SOLANACEAE Jussieu	*Mandragora officinarum* L. (MP-So-004 H)	Toffâh el-‘ichq, تفاح العشق	Infectious disease (A78) Acne (S96) Tumors (A29)	Roots	Placed on the infection	External use	Contact with water inside this plant can cause blindness.
SOLANACEAE Jussieu	*Solanum lycopersicum* L. (MP-So-005 JHN)	Tumatich, طوماتيش ⵜⵓⵎⴰⵜⵉⵛ	Remove all impurities from the face (S29) Lighten the complexion (S29)	Fruits	Friction	External use	Edible
SOLANACEAE Jussieu	*Solanum melongena* L. (MP-So-006 JHN)	Bodanjale, بودنجال ⵊⵓⴷⴰⵏⵊⴰⵍ Thadanjalt, ثادنجالت ⵜⴰⴷⴰⵏⵊⴰⵍⵜ	Hemorrhoid (K96)	Fruits	Dry Grind Mixed with honey	Cataplasm	Edible
SOLANACEAE Jussieu	*Solanum nigrum* L. (MP-So-007 JH)	‘ineb ed-dîb, عنب الذيب Bobknina, بوبكينا Adir N’wuchan, أدير نوشن ⴰⴷⵉⵔ ⵏⵡⵓⵛⴰⵏ	Coldness (A29)	Fruits	Infusion	Oral	
TAMARICACEAE Link	*Tamarix africana* L. (MP-Ta-001 H)	Tammayt, تمايت ⵜⴰⵎⵎⴰⵢⵜ					

THYMELAEACEAE Jussieu	*Aquilaria agallocha* (Lour.) Roxb. (MP-Th-001 JHN)	Agharas, أغراس ⵄⵖⵔⴰⵙ l-'ûd l-qmârî, عود القماري		Barks	Fumigation		Fragrant: Perfumes the air
THYMELAEACEAE Jussieu	*Daphne gnidium* L. (MP-Th-002 JHN)	Lezzâz, لزاز ⵍⵣⵣⴰⵣ âlezzâz, ألزاز ⴰⵍⵣⵣⴰⵣ Azzaz, أزاز ⴰⵣⵣⴰⵣ Tomatich ghaday (mouse tomato), طوماطيش غذاي ⵜⵎⵟⴰⵜⵛ ⵖⴰⵄⴰⵢ Methnân,مثنان ⵟⵎⵅⵍⴰⵍ		Leaves			Edible
URTICACEAE Jussieu	*Urtica pilulifera* L. *Urtica dioica* L. *Urtica urens* L. (MP-Ur-001 JHN)	l-Hurrayqa, l-htrrîga, الحريقة Harraqa, حراقة Tagzine, تاجزين ⵜⴰⵅⵣⵉⵍ Thagzinte, ذاكزينت ⵐⴰⵅⵣⵉⵍⵜ Dhazinet, ذزينت ⵐⴰⵣⵉⵍⵎⵜ		Leaves			Edible
VERBENACEAE Jaume Saint-Hilaire	*Aloysia citrodora* Palau (MP-Ve-001 JHN)	Lwîza, لويزة ⵍⵡⵉⵣⴰ	Sleep disturbance (P06) Calm the babies (P29)	Leaves	Infusion	Oral	
VITACEAE Jussieu	*Vitis vinifera* L. (MP-Vi-001 JHN)	Dâlya, الدالية Tizwine تزوين ⵜⵣⵣⵡⵉⵍ (Tree) Adire أضير ⴰⴷⵉⵇ (Fruit)	Constipation (D12) Memory disturbance (P20)	Fruits	Juice Dried fruit	Oral	Edible Juice
ZINGIBERACEAE Martinov	*Curcuma longa* L. (MP-Zi-001 H)	L-Kharqoum, الخرقوم		Rhizomes		Mixed	Condiment Hair dye
ZINGIBERACEAE Martinov	*Zingiber officinale* Rosc (MP-Zi-003 JHN)	سكنجبير, Skenjbīr	Articular pain (L29) Coldness (A29) Common cold (R29) Weight loss (T08)	Rhizomes	Infusion	Oral Put it in socks	Condiment

Annex 2. Table of Nador Province species.

Family	Scientific Name (Voucher number)	Vernacular name	Diseases treated	Part used	Mode of preparation	Mode of administration	Other uses
AMARANTHACEAE Jussieu	*Beta vulgaris* L. (MP-Amara-003 JHN)	Barba, باربا	Anemia (B78)	Roots	Consumption	Oral	Edible
AMARYLLIDACEAE J. Saint-Hilaire	*Allium ampeloprasum var. porrum* L. (MP-Amary-001 JHN)	L-bssel, لبصل		Bulbs			Edible
AMARYLLIDACEAE J. Saint-Hilaire	*Allium cepa* L. (MP-Amary-002 JHN)	L-Bessla, البصلة L-Bessla l-Hemrra, البصلة الحمرا Azalim, أزليم ⴰⵣⵍⵉⵎ	Anti-infectious wounds (S18)	Bulbs	Friction	External use	Edible
AMARYLLIDACEAE J. Saint-Hilaire	*Allium sativum* L. (MP-Amary-003 JHN)	Et-Thoûm,الثوم Thichat , ثيشات ⵜⵉⵛⴰⵜ	Bowels movements (D18) Blood pressure (K85)	Bulbs	Consumption	Oral	Edible
APIACEAE Lindley	*Ammi visnaga* L. (MP-Api-002 JHN)	Tbichnikht تبشنيخت ⵜⴰⵃⵛⵉⵏⵅⵜ	Dental hygiene (D19)	Umbels Fruits	Powder	Gargle	Use as a toothpick
APIACEAE Lindley	*Ammodaucus leucotrichus* Cossone & Durieu *(*MP-Api-003 JHN)	Sammoune سمون ⵙⴰⵎⵎⵓⵏ	Stomachache (D01)	Fruits	Decoction Infusion Powder in Hammam	Oral External use	Condiment
APIACEAE Lindley	*Ammoides pusilla* (Brot.) (MP-Api-004 JHN)	Nounkha, نونخا		Aerial part of the plant			Condiment Especially used in snail soups
APIACEAE Lindley	*Anethum graveolens* L. (MP-Api-005 JHN)	كروية عمية, Kerwiyâ ‘amya	Stomachache (D01)	Fruits	Infusion Powder	Oral	Condiment
APIACEAE Lindley	*Apium graveolens* L. (MP-Api-006 JHN)	الكرافس, āl-krāfs ‘rwq āl-krāfs, عروق الكرافس	Rheumatism (L99)	Leaves Stems	Compress	External use	Edible
APIACEAE Lindley	*Carum carvi* L. (MP-Api-008 JHN)	Karwiyâ, كروية	Bowels movements (D18)	Fruits	Grind	Oral	Condiment
APIACEAE Lindley	*Coriandrum sativum* L. (MP-Api-010 JHN)	Qosbar قسبر Rqebza, رقبزا ⵕⵇⵛⴰⵣ	Nervous system diseases (N29) Headache (N01) Vertigo (N17) Weakness (A04)	Whole plant	Decoction Fresh Dry	Oral	Edible Condiment

APIACEAE Lindley	*Cuminum cyminum* L. (MP-Api-011 JHN)	Kemmûn, الكمون	Abdominal pain (D01)	Seeds	Decoction Powder	Oral	Condiment
APIACEAE Lindley	*Daucus carota* L. *var. sativa* L. (MP-Api-012 JHN)	Khizou, خيزو	Visual disturbance (F05)	Roots	Consumption	Oral	Edible
APIACEAE Lindley	*Eryngium triquetrum* Vahl. *Eryngium tricuspidatum* L. *Eryngium campestre* L. (MP-Api-013 JHN)	El Harach, الحرش	Bladder complaint (U13)	Leaves	Infusion	Oral	
APIACEAE Lindley	*Ferula communis* L. (MP-Api-014 JHN)	بوبال, Boubal		Inflorescences			Edible
APIACEAE Lindley	*Foeniculum vulgare* Mill. (MP-Api-015 JHN)	El-Besbas البسباس Ar-besbas أربسباس ⴰⵇⵙⵙⴰⵙ		Bulbs Leaves Stems Seeds			Edible Condiment
APIACEAE Lindley	*Foeniculum vulgare.* Mill. *Foeniculum vulgare* subsp.*vulgare* Miller (MP-Api-016 JHN)	Ssemâr,سمار En-nafe', النافع	Gas (D08)	Seeds	Infusion	Oral	Condiment
APIACEAE Lindley	*Petroselinum crispum* (Mill.) (MP-Api-018 JHN)	المعدنوس, Ma'dnous	Torsion of the joints (L20) Headache (N01)	Leaves Stems	Compress Dry Fresh Decoction	External use Oral	Edible Condiment
APIACEAE Lindley	*Pimpinella anisum* L. (MP-Api-020 JHN)	Habbat-Hlaoua, حبة حلاوة	Gas (D08) Menopausal complain (X11)	Seeds	Infusion	Oral	Condiment
APOCYNACEAE Jussieu	*Nerium oleander* L. (MP-Apo-001 JHN)	Tariret, تاريريت ⵜⴰⵔⵉⵔⵉⵜ	Allergy (A92)	Leaves	Fumigation	Inhalation	
ARECACEAE Berchtold & J. Presl	*Phoenix dactylifera* L. (MP-Are-003 JHN)	En-Nekhla, النخلة Asjattini أسجاث تيني ⴰⵙⵊⴰⵜⵉⵏⵉ		Fruits			Edible
ARISTOLOCHIACEAE Jussieu	*Aristolochia longa* L. *Aristolochia baetica* L. (MP-Ari-001 JHN)	Bereztem, برزطم	Ovarian cyst (X80) Cancer (A79)	Roots	Mixed with honey	Oral	

ASPARAGACEAE Jussieu	*Asparagus acutifolius* L. *Asparagus albus* L. *Asparagus pastorianus* Webb & Berthel. *Asparagus horridus* L. *Asparagus altissimus* Munby (MP-Aspa-001 JHN)	Sekum, سكوم Askoûm, أسكوم ⴰⵙⴽⵓⵎ Tasskoûnd, تسكوند ⵜⴰⵙⴽⵓⵏⴷ		Young shoots			Edible
ASPARAGACEAE Jussieu	*Artemisia arborescens* L. (MP-Ast-003 JHN)	Shibath شيبث ⵛⵅⵖⴰⵜ	General diseases (A29)	Leaves Stems	Infusion	Oral	Drink
ASPARAGACEAE Jussieu	*Artemisia herba-alba* Asso (MP-Ast-004 JHN)	Es-Shih, الشيح	Worms (D96) Stomachache (D01)	Leaves Stems	Infusion	Oral	Drink
ASPARAGACEAE Jussieu	*Chamaeleon gummifer* (L.) Cass. (MP-Ast-007 N)	Addad, أداد	Against fears (P29)	Roots	Fumigation Mixed with *Peganum harmala* L.	Inhalation	They make fumigations and mix it with the traditional soap (Women use it to wash themselves)
ASPARAGACEAE Jussieu	*Chamaemelum nobile* (L.) All. (MP-Ast-008 JHN)	Babounej, بابونج Maysaniya, مايسنية	Gas (D08)	Flower	Dry Infusion	Oral	
ASPARAGACEAE Jussieu	*Cynara cardunculus* L. (MP-Ast-010 JHN)	Rekhochf,رخوشف ⵔⵅⵛⵃ Aghardus أغرضوص ⴰⵖⴰⵔⵙⵓ		Flower buds			Edible
ASPARAGACEAE Jussieu	*Cynara scolymus* L. (MP-Ast-011 JHN)	Kharssaf خرسف ⵅⴰⵔⵓⵅ		Flower buds			Edible
ASPARAGACEAE Jussieu	*Dittrichia viscosa* (L.) Greuter subsp. *viscosa* (MP-Ast-012 JHN)	مكرمان Magraman ⵎⴰⵖⵔⴰⵎⴰⵏ	Dental pain (For kids) (D19) Sunburns (S80) Fever (A03)	Roots	Mixed with olive oil Fried or boiled and put it on the head of a teething child	External use	
ASPARAGACEAE Jussieu	*Lactuca sativa* L. (MP-Ast-015 JHN)	L-khass, الخس Tchouga, تشوغا ⵜⵛⵅⴰ		Leaves			Edible

ASPARAGACEAE Jussieu	*Matricaria chamomilla* L. (MP-Ast-016 JHN)	Mayssania, مايسنية	Sinusitis (R75) Gas (D08)	Flowers	Infusion	Oral	
BRASSICACEAE Burnett	*Brassica napus* L. *Brassica rapa* L. (MP-Br-001 JHN)	Adjefet, أدجفت ⴰⴷⵊⴼⵜ	Respiratory system problems (R29) Inflammation (A29) Cough (R05) Throat pain (R21)	Roots	Syrup	Oral	Edible
BRASSICACEAE Burnett	*Brassica nigra* (L.) W.D.J.Koch (MP-Br-002 N)	L-kerkaz, الكركاز ⵍⴽⵔⴽⴰⵣ	Coldness (A29)	Seeds			
BRASSICACEAE Burnett	*Brassica oleracea* L. (MP-Br-003 JHN)	Kroumb,كرومب Qoliss, قوليس ⵇⵓⵍⵉⵙ	Genital swelling (X29) (Y29)	Leaves	Compress	External use	Edible
BRASSICACEAE Burnett	*Raphanus sativus* L. (MP-Br-006 JHN)	Lfjel, لفجل Djaft yori دجفت يوري ⵍⴼⵊⵜ ⵢⵓⵔⵉ	Nervousness (P01) Madness (P29)	Roots	Consumption	Oral	Edible
CACTACEAE Jussieu	*Opuntia ficus-indica f. amyclaea* (Ten.) Schelle *Opuntia ficus-indica* (L.) Mill. (MP-Cac-001 JHN)	Es-Sebar,الصبار Ifoudha, إيفوذا ⵉⴼⵓⴷⴰ	Diarrhea (D11) Coldness (A29)	Fruits	Consumption	Oral	Edible
CUCURBITACEAE Jussieu	*Citrullus colocynthis* (L.) Schrader (MP-Cu-001 HN)	L-handhal, الحنظل Hadj, حدج Ariri, أريري ⴰⵔⵉⵔⵉ	Wound (S18)	Fruits	Compress	External use	
CUCURBITACEAE Jussieu	*Citrullus lanatus* (Thunb.) Matsum. & Nakai (MP-Cu-002 JHN)	Addellaâ أدلاع ⴰⴷⵍⵄⴰⵛ	Refreshing (A29)	Fruits Pulp	Consumption	Oral	Edible
CUCURBITACEAE Jussieu	*Cucumis melo* L. (MP-Cu-003 JHN)	Swihla, سويهلة	Constipation (D12)	Fruits Pulp	Consumption	Oral	Edible
CUCURBITACEAE Jussieu	*Cucumis sativus* L. *Cucumis melo* L. subsp. *melo* (MP-Cu-004 JHN)	l-khyar, الخيار (*Cucumis sativus L.)* Bino, بينو ⵖⵉⵏⵓ Fagouss, فقوس (*Cucumis flexuosus L*		Fruits			Edible Cosmetic
CUCURBITACEAE Jussieu	*Cucurbita maxima* Duchesne (MP-Cu-005 JHN)	Ger'a Hamra, جرعة الحمراء Takhsacht Tazwaght, تاخساشت تازواغت ⵜⴰⵅⵙⴰⵛⵜ ⵜⴰⵣⵡⴰⵖⵜ		Fruits			Edible

CUCURBITACEAE Jussieu	*Cucurbita pepo* L. (MP-Cu-006 JHN)	Ger'a,كرعة Takhsacht, تاخساشت ⵜⴰⵅⵙⴰⵛⵜ	Swelling (A08) Skin inflammation (S29) Eczema (S87) Burns (S14)	Fruits	Friction	Cataplasm	Edible
CUPRESSACEAE Rich. Ex Bartl.	*Juniperus phoenicea* L. (MP-Cup-002 JHN)	L-'ar'ar, العرعار Amdzi, أمضزي ⴰⵎⴷⵣⵉ					
CUPRESSACEAE Rich. Ex Bartl.	*Tetraclinis articulata* (Vahl) Mast. (MP-Cup-003 JHN)	L-'ar'ar, العرعار Amdzi, أمضزي ⴰⵎⴷⵣⵉ Amdri,أمضري – ⴰⵎⴷⵔⵉ Quochor l-'ar'ar, قشور العرعار	Diarrhea (D11)	Leaves Barks	Decoction	Oral	
CYPERACEAE Jussieu	*Cyperus esculentus* L. (MP-CY-001 JHN)	Habb el-'aziz,حب العزيز	Weight gain (T07) Loss of appetite (T03)	Tubers	Dry Decoction	Oral	
EUPHORBIACEAE Jussieu	*Euphorbia officinarum* subsp. *echinus* (Hook.f. & Coss.) Vindt (MP-Eu-003 N)	Ed-deghmoûss,الدغموس	Ovarian cyst (X80) Cancer (A79)	Whole plant	Mixed with honey	Oral	
EUPHORBIACEAE Jussieu	*Ricinus communis* L. (MP-Eu-005 JHN)	L-Kharoua', الخروع	Infertility (W15)	Leaves	Fumigation in the Hammam	External use	Cosmetic
FABACEAE Lindley	*Ceratonia siliqua* L. (MP-Fab-003 JHN)	L-kharoub,الخروب Tasrighoua (Tree), تَسْرِيغْوَ (الشجرة) ⵜⴰⵙⵙⵓⵖⵍⴰ Iquassoûne (Fruit), إيقَاسُّونْ (الثمرة)	Bowel movements (D18)	Fruits	Powder	Oral	Edible
FABACEAE Lindley	*Cicer arietinum* L. (MP-Fab-004 JHN)	L-Hûmoss,الحمص		Seeds	Powder		Edible Cosmetic
FABACEAE Lindley	*Glycyrrhiza glabra* L. *Glycyrrhiza foetida* Desf (MP-Fab-006 JN)	'Arq Souss, عرق سوس	Throat pain (R21) Indigestion (D07)	Rhizomes	Decoction	Oral	
FABACEAE Lindley	*Lathyrus clymenum* L. *Lathyrus aphaca* L. *Lathyrus ochrus* (L.) DC. *Lathyrus sativus* L. *Lathyrus cicera* L. *Lathyrus sylvestris* L. (MP-Fab-007 JN)	Jelban,جلبان Jelban boqroune, جلبان بوقرون Tinfit,تنفيت ⵜⵉⵍⵊⵉⵜ		Seeds			Edible

FABACEAE Lindley	*Lens culinaris* Medik. (MP-Fab-008 JHN)	'Des, عدس		Seeds			Edible
FABACEAE Lindley	*Lupinus albus* L. (MP-Fab-009 JN)	Tirmes, ترمس	Cholesterol (T99)	Seeds	Powder	Oral	
FABACEAE Lindley	*Medicago sativa* L. (MP-Fab-010 JN)	Reffssâh, رفصة ⵕⴰⴼⵙⴰ	Common cold (R29) Blood toxins (B04)	Leaves	Decoction	Oral	
FABACEAE Lindley	*Pisum sativum* L. (MP-Fab-012 JHN)	Jelban, جلبان		Seeds			Edible
FABACEAE Lindley	*Senna alexandrina* Mill. (MP-Fab-014 JHN)	Es-sana, السانا	Constipation (D12)	Leaves	Infusion	Oral	
FABACEAE Lindley	*Trigonella foenum-graecum* L. (MP-Fab-015 JHN)	L-Helba, الحلبة Rjoubet,رجوبث ⵔⵊⵓⴱⵉⵜ	Weight gain (T07)	Seeds	Mixed with honey (take a spoonful with a cup of lukewarm water)	Oral	Condiment Cosmetic
FABACEAE Lindley	*Vicia Faba* L. (MP-Fab-017 JHN)	L-Foul,الفول Ibaouan, إباون ⵉⴱⴰⵡⵏ		Pods Seeds			Edible
FABACEAE Lindley	*Vicia sativa* L. (MP-Fab-018 HN)	Ibaouan, إباون ⵉⴱⴰⵡⵏ		Pods Seeds			Edible
FAGACEAE Dumortier	*Castanea sativa* Mill. (MP-Fag-001 JHN)	L-Quastel, القسطل	Stomachache (D01)	Fruits	Roasted	Oral	Edible
FAGACEAE Dumortier	*Quercus rotundifolia* Lam. *Quercus ilex* L. (MP-Fag-003 JHN)	L-belout, البلوط Abjout,أبجوط ⴰⵊⵓⵜ Kûrrîch, كريش	Uterus complaint (X29)	Nuts	Consumption	Oral	Edible
FAGACEAE Dumortier	*Quercus suber* L. (MP-Fag-004 JHN)	tazakht تزاخت ⵜⴰⵣⴰⴽⵜ L-ferchi, الفرشي Abjout,أبجوط ⴰⵊⵓⵜ		Nuts Barks			Edible Production of cork
IRIDACEAE Jussieu	*Crocus sativus* L. (MP-Ir-001 JHN)	Ze'frane, زعفران Kerkouz, كركوز ⴽⵓⵔⴽⵓⵣ	Menstruation irregular (X07) Uterus complaint (X29) Spasm (N08) Nervous system diseases (N29)	Pistils	Decoction	Oral	Edible

JUGLANDACEAE Perleb	*Juglans regia* L. (MP-Jug-001 JHN)	L-Grga', لكركاع Taghyachet, تغياشت ⵜⴰⵖⵢⴰⵛⵉⵜ Agusim, أجوسيم ⴰⵖⵓⵙⵉⵎ	Blood toxins (B04) Swollen lymph nodes (B02) Hair loss (S23)	Nuts	Consumption	Oral	Edible
LAMIACEAE Martynov LAMIACEAE Martynov	*Clinopodium nepeta* subsp. *spruneri* (Boiss.) Bartolucci & F.Conti (MP-Lam-002 JHN)	Ze'itra,زعيترة Assahta , السحتا ⴰⵙⵙⴰⵀⵜⴰ	Headache (N01) Backache (L02) General pain (A29)	Leaves	Infusion Dry	Oral	Condiment
LAMIACEAE Martynov	*Lavandula stoechas* L. (MP-Lam-003 JHN)	L-Khzama,الخزامى L-Halhal,حلحال ⵍⴰⵃⵍⴰⵃⵍ	Childbirth (W90) Infertility (W15) Urinary infection (U99) Menstrual pain (X02) Asthma (R96) Whooping cough (R71) Bronchitis (R78) Pulmonary problems (R29) Fever (A03) Gas (D08) Vaginal infection (X15)	Whole plant	Decoction Powder Mixed with olive oil	External use Suppository	Against humidity
LAMIACEAE Martynov	*Mentha pulegium* L. *Mentha gattefossei* Maire (MP-Lam-005 JHN)	Fliyo, فليو Friyo, فريو ⴼⵔⵉⵢⵓ Menta ⵎⵏⵜⴰ	Spasm (N08) Heartburn (D02)	Leaves	Infusion Dry Fresh	Oral	Drink Condiment (with couscous)
LAMIACEAE Martynov	*Mentha spicata* L. *Mentha villosa* Huds. (MP-Lam-006 JHN)	Atay, آتاي Ne'na' l-beldi, النعناع البلدي	Stomachache (D01)	Leaves Stems	Infusion Fresh	Oral	Drink
LAMIACEAE Martynov	*Mentha piperita* L. (MP-Lam-008 JHN)	Ne'na', نعناع Minta, منتة Timîjjâ, تِيمِيجًا	Stomachache (D01)	Leaves Stems	Infusion Fresh	Oral	Drink
LAMIACEAE Martynov	*Ocimum basilicum* L. *Ocimum minimum* L. (MP-Lam-009 JN)	L-hbeq, الحبق Rahbaq, رحبق ⵕⴰⵀⴱⴰⵇ		Whole plant			Kills mosquitoes
LAMIACEAE Martynov	*Origanum compactum* Benth. *Origanum elongatum* (Bonnet) Emb. & Maire (MP-Lam-010 JHN)	Za'tar, زعتر Sahtar,صحتر ⵣⴰⵄⵜⵉⵔ	Stomachache (D01)	Leaves	Infusion Dry	Oral	Drink Condiment

LAMIACEAE Martynov	*Origanum majorana* L. (MP-Lam-011 JHN)	Merdedouch, مرددوش	Blood pressure (K85) Influenza (R80) Infertility (W15)	Leaves	Infusion Dry	Oral	Drink
LAMIACEAE Martynov	*Salvia officinalis* L. (MP-Lam-012 JHN)	Es-Salmiya, السالمية	Menstrual pain (X02) Diabetes (T90) Sweating problem (T09) Menstruation irregular (X07)	Leaves	Infusion Dry	Oral	Drink
LAMIACEAE Martynov	*Salvia rosmarinus* Schleid. (MP-Lam-013 JHN)	Azîr, أزير Iklil Al Jabal, إكليل الجبل	Headache (N01) Backache (L02) General pain (A29)	Leaves	Infusion Dry	Oral	Condiment
LAMIACEAE Martynov	*Teucrium polium* L. (MP-Lam-015 JHN)	Edja'da, الجعدة		Whole plant			It's used in the production of traditional soap
LAMIACEAE Martynov	*Thymus martinezii* Pau *Thymus vulgaris* L. (MP-Lam-016 JN)	Touchna, التوشنة (Thymus vulgaris L) ⵜⵣⵄⵍⴰ Za'ter, زعتر	Stomachache (D01)	Leaves	Infusion	Oral	Edible
LAURACEAE Jussieu	*Cinnamomum cassia* (L.) J. Presl (MP-Lau-001 JHN)	Querfa, قرفة Al-Qarfat, القرفت ⴰⵍ ⵇⴻⵔⵎⵜ		Barks			Spice
LAURACEAE Jussieu	*Laurus nobilis* L. *Laurus azorica* (Seub.) Franco (MP-Lau-002 JN)	Er-rend,الرند Warqat Sidna Moussa, ورقة سيدنا موسى	Stomachache (D01)	Leaves	Decoction	Oral	Condiment
LINACEAE Perleb	*Linum usitatissimum* L. (MP-Li-001 JHN)	Zeri'at El-Ketân, زريعة الكتان	Weight loss (T08) Weight gain (T07)	Seeds	Powder Decoction	Oral Cataplasm	Cosmetic
LYTHRACEAE Jaume Saint-Hilaire	*Lawsonia inermis* L. (MP-Ly-001 JHN)	l-Hennah, الحنة Rehna, رحنى ⵕⵃⵏⴰ	Vein problems (K29) Tumors (A29) Wounds (S18) Joint pain (L20)	Leaves	Dry Powder	Cataplasm	Hair dye To color the hands and feet For use in ceremonies

LYTHRACEAE Jaume Saint-Hilaire	*Punica granatum* L. (MP-Ly-002 JHN)	Armân Ez-Zefry, Er-Român, أَرْمَانْ الزْفْرِي (الرمان) ⴰⵔⵓⵎⴰⵏ ⵓⵣⵣⵓⴼⵔⵉ Aquchodrmân, Quchour Er-Rôman, أَقْشُوذْرْمَّانْ (قشور الرمان) ⴰⵇⵛⵓⴹⵔⴰⵎⴰⵏ	Abdominal pain (D01) Bowels movements (D18)	Fruits Barks	Dry Decoction	Oral	Edible
MALVACEAE Jussieu	*Gossypium herbaceum* L. (MP-Ma-003 JHN)	L-Qotn,القطن Reqten رقطن ⵔⴰⵇⵜⵓⵏ		White fibers			Used in the clothing industry
MALVACEAE Jussieu	*Malva sylvestris* L. *Malva parviflora* L. (MP-Ma-004 JHN)	L-baquoula, البقولة Ighdiouene, اغدوين ⵉⵖⴷⵉⵡⵓⵏ Imzouar, إمزوار ⵉⵎⵣⵡⴰⵔ Imzouane, إمزوان ⵉⵎⵣⵡⴰⵏ L-Khobiza, الخبيزة	Burns (S14) Tonsillitis acute (R75)	Whole plant Leaves	Compress Decoction	External use Oral	Edible
MORACEAE Gaudichaud	*Ficus carica* L. (MP-Mo-001 JHN)	L-Kermouss, الكرموس Thazareth, ثَزَارْثْ		Fruits			Edible
MORACEAE Gaudichaud	*Morus alba* L. *Morus nigra* L. (MP-Mo-002 JHN)	Tût Al Bari, التوت البري Tagzilt , تاكزيلت ⵜⴰⴳⵣⵉⵍⵜ	Stomachache (D01)	Fruits	Consumption	Oral	Edible
MYRTACEAE Jussieu	*Eucalyptus globulus* Labill. (MP-Myrt-001 JHN)	Kaliptosse,كاليبوتس	Influenza (R80) Headache (N01)	Leaves Limbs	Boiled	Inhalation	
NITRARIACEAE Lindley	*Peganum harmala* L. (MP-Ni-001 JHN)	Lhermel, لحرمل	Against fears (P29)	Seeds	Fumigation Mixed with *Chamaeleon gummifer* (L.) Cass.	Inhalation	
OLEACEAE Hoffmannsegg & Link	*Fraxinus angustifolia* Vahl. *Fraxinus excelsior* L. (MP-Ol-001 JN)	Tozalet, توزالت ⵜⵓⵣⴰⵍⵓⵜ Lessan Et-tèr,لسان الطير		Aerial part of the plant			Edible
OLEACEAE Hoffmannsegg & Link	*Olea europaea* L. subsp. *europaea var. europaea* (MP-Ol-003 JHN)	Zaytoûne, زيتون	Constipation (D12) Urinary calculus (U95)	Leaves Fruits	Oil Infusion	Oral	Edible Cosmetic

OLEACEAE Hoffmannsegg & Link	*Olea europaea subsp. Europaea var. Sylvestris* (L.) (Mill.) Lehr (MP-Ol-004 JHN)	Zebbûj,الزبوج Azemmur (wild olive tree) ⵣⵎⵎⵓⵔ ,أزمور	Constipation (D12) Urinary calculus (U95)	Leaves Fruits	Oil Infusion	Oral	
ORCHIDACEAE Jussieu	*Orchis* divers and *Ophrys* divers (MP-Or-001 N)	l-hyya o l-mytta, الحية والميتة	Diarrhea (Especially kids) (D11)	Tubers	Decoction	Oral	
OXALIDACEAE R. Brown	*Oxalis pes-caprae* L. (MP-Ox-001 N)	Hommaydha, حميضة	Infertility (W15)	Whole plant	Women sit on this plant in the Hammam	External use	
PAPAVERACEAE Jussieu	*Papaver rhoeas* L. *Papaver pinnatifidum* Moris (MP-Pa-002 JHN)	Bela'mâne (Bena'mâne), بلعمان (بنعمان) Thawsisent, ثاوسيسنت ⵜⴰⵡⵙⵉⵙⵏⵜ	Cough (R05) Sleep disturbance (P06)	Flowers	Infusion	Oral	
PEDALIACEAE R. Brown	*Sesamum indicum* L. (MP-Pe-001 JHN)	Zenjlane, زنجلان	Hair care (S24)	Seeds	Oil	External use	Edible
PINACEAE Lindley	*Cedrus atlantica* (Endl.) Manetti ex Carriere (MP-Pi-001 N)	Al Arz, الأرز	Blood circulation (B04)				
PLANTAGINACEAE Jussieu	*Plantago major* L. *Plantago coronopus* L. (MP-Pl-003 JHN)	Bard o salam, برد و سلام Zentet l-khrouf, زنطيط الخروف	Acne (S96) Burns (S14)	Leaves	Friction	External use	
POACEAE Barnhart	*Avena sativa* L. (MP-Poa-004 JHN)	l-khratâl, الخرطال Tmsikhth, تمسيخت ⵜⵎⵙⵉⵅⵜ		Seeds			Against the evil eye
POACEAE Barnhart	*Cenchrus americanus* (L.) Morrone (MP-Poa-005 JHN)	Ilân, إيلان	Fracture (L76)	Seeds	Consumption	Oral	Edible
POACEAE Barnhart	*Hordeum vulgare* L. (MP-Poa-008 JHN)	Es-s'îr, الشعير		Seeds			Edible
POACEAE Barnhart	*Oryza sativa* L. (MP-Poa-009 JHN)	Al-rôz, الروز	Lighten the complexion (S29) Hair care (S24) Diarrhea (D11)	Seeds	Consumption Water of rice	Oral External use	Edible
POACEAE Barnhart	*Triticum aestivum* L. *Triticum turgidum* L. *Triticum turgidum* subsp. *durum* (Desf.) Husn. (MP-Poa-014 JHN)	Tahin Fors, طحين الفورص Lfarina, فرينة l-gemh, القمح Imndi إمندي ⵖⵎⵍⵗⵖ	Stomachache (D01) General health (A01)	Seeds	Grind Consumption	Oral	Edible

POACEAE Barnhart	*Zea mays* L. (MP-Poa-015 JHN)	Ad-Dora, الذرة Izumbiyan, إزومبيان ⵉⵣⵓⵎⴱⵢⴰⵏ Asangar, أسنجار ⴰⵙⴰⵏⴳⴰⵔ Azumbi, أزومبي ⴰⵣⵓⵎⴱⵉ		Seeds Ears of corn			Edible
POLYGONACEAE Jussieu	*Rumex acetosa* L. *Rumex crispus* L. *Rumex pulcher* L. *Rumex vesicarius* L. (MP-Pol-001 JN)	Hummayda,حميضة	Infertility (W15)	Whole plant	Women sit on this plant in the Hammam	External use	
PTERIDACEAE E.D.M.Kirchn	*Pteris aquilina* (L.) Kuhn (MP-Pt-002 JHN)	Afar oussiwan أفر أوسيوان (means eagle wings) ⴰⴼⴰⵔ ⵓⵙⵉⵡⴰⵏ Sarsakh, سرخس Khenchar, خنشار					Decorative plant
RANUNCULACEAE Jussieu	*Nigella sativa* L. *Nigella damascena* L. *Nigella arvensis* L. (MP-Ra-003 JHN)	Sanûj, سانوج Habba es-sawda, حبة السوداء	Vein problems (K29) Warms the body (A29) Diabetes (T90) For all diseases except death (A29)	Seeds	Mixed with honey	Oral	Condiment
RHAMNACEAE Jussieu	*Ziziphus lotus* (L.) Lam. (MP-Rh-002 JHN)	Sedra, السدرة Azad, أزاد ⴰⵣⴰⴷ Tazuggwart, تزكورت ⵜⴰⵣⵓⴳⴳⵡⴰⵔⵜ Nnbeg, نبق	Liver diseases (D97) Bowels movements (D18) Bladder weakness (U05)	Fruits	Powder Consumption	Oral	
ROSACEAE Jussieu	*Cydonia oblonga* Mill. (MP-Ro-002 JHN)	Sferjel, السفرجل		Fruits			Edible
ROSACEAE Jussieu	*Malus domestica* Borkh. (MP-Ro-003 JHN)	Tefâh,التفاح Adhaffu, أضفو ⴰⴹⴰⴼⵓ	Kidney problem (U14)	Fruits	Infusion (add vinegar to some lukewarm water)	Oral	Edible Vinegar

ROSACEAE Jussieu	*Prunus avium* (L.) L. *Prunus cerasus* L. (MP-Ro-005 JHN)	Habb l-mlouk, الملوك حب Ardlim, أردليم ⵄⵕⴰⵎⵉⵎ		Fruits			Edible
ROSACEAE Jussieu	*Prunus dulcis* (Mill.) D. A. Webb (MP-Ro-007 JHN)	Louz mor, لوز مر Ajouz, أجوز ⵄⵊⵙⵙ	Hair care (S24)	Almonds	Oil	External use	Edible Cosmetic
ROSACEAE Jussieu	*Prunus persica* (L.) Stokes (MP-Ro-008 JHN)	Khûkhu, الخوخ Afersghu, أفرسغو ⵄⵀⵙⵔⵙⵅⵙ		Fruits			Edible
ROSACEAE Jussieu	*Pyrus communis* L. (MP-Ro-009 JHN)	Bû-ʻwid, بوعويد Rifirass,رفيراس ⵔⵜⵀⵜⵔⵄⵙ	Abdominal pain (D01)	Fruits	Consumption	Oral	Edible
ROSACEAE Jussieu	*Rosa x centifolia* L. *Rosa x damascena* Mill. (MP-Ro-011 JHN)	Werd beldi, الورد البلدي	Fever (A03)	Petals	Spraying	External use	Cosmetic
RUTACEAE Jussieu	*Citrus × aurantium amara* Engl. (MP-Rut-001 JHN)	Er-renj,الرنج Lqaras, لقراص ⵍⵣⵄⵔⵄⵙ	Common cold (R29)	Fruits Flowers	Infusion Juice mixed with honey and lukewarm water	Oral	Edible Jam It's used in the preparation of flower water (Ma-zher)
RUTACEAE Jussieu	*Citrus × aurantium* L. (MP-Rut-002 JHN)	Letsîn, لتشين Nouar l-bortoqal, نوار البرتقال	Sunburns (S80)	Fruits Flowers	Cut it and placed around the head	External use	Edible Jam Condiment
RUTACEAE Jussieu	*Citrus × limon* (L.) Burm. fil. *Citrus × aurantiifolia* (Christm.) Swingle (MP-Rut-003 JHN)	Al-laimoin,الليمون Al-lim, الليم	Common cold (R29) Weight loss (T08)	Fruits	Infusion Juice mixed with honey and lukewarm water	Oral	Edible
SALICACEAE Mirbel	*Populus alba* L. *Populus nigra* L. *Populus euphratica* Olivier (MP-Sali-001 JHN)	Sefsaf, صفصاف		Leaves	Boil it and passed in the house		Purifies the area
SALVADORACEAE Lindley	*Salvadora persica* L. (MP-Salv-001 JHN)	Siwak, سواك	Whitened teeth (D19)	Roots	Brush	External use	Use as a toothpick

SCHISANDRACEAE Blume	*Illicium verum* Hook. fil. (MP-Sch-001 JHN)	‘roq Al Najm, عروق النجم Azmir, أزْمِيرْ ⴰⵣⵎⵉⵔ Al Najm, النجم	Allergy (A92)	Fruits	Infusion	Oral	Condiment In some street food dishes, vendors use it to flavor snails
SOLANACEAE Jussieu	*Capsicum frutescens* L. (MP-So-001 JHN)	Felfel hârr, فلفل حار	Headache (N01) Loss of appetite (T03)	Fruits	Consumption	Oral	Condiment
SOLANACEAE Jussieu	*Hyoscyamus albus* L. *Hyoscyamus niger* L. (MP-So-002 JN)	Benj, بنج Bû-lrjouf, بولرجوف ⵙⵓⵎⵔⵓⵊ	Pus (S29)	Whole plant	Trituration	Cataplasm	
SOLANACEAE Jussieu	*Solanum lycopersicum* L. (MP-So-005 JHN)	Tumatich, طوماتيش ⵜⵓⵟⵓⵜⵛ Maticha, مطيشة	Lighten the complexion (S29) Sunburns (S80)	Fruits	Friction	External use	Edible
SOLANACEAE Jussieu	*Solanum melongena* L. (MP-So-006 JHN)	Bodanjale, بودنجال ⵙⴰⵄⵏⵓⵎ Adnjale, أدنجال ⵄⴰⵏⵓⵎ		Fruits	Roasted		Edible
THYMELAEACEAE Jussieu	*Aquilaria agallocha* (Lour.) Roxb. (MP-Th-001 JHN)	Agharas, أغراس ⵄⵅⵄⵄⵙ l-‘ûd l-qmârî, عود القماري		Stems	Fumigation		Fragrant: Perfumes the air
THYMELAEACEAE Jussieu	*Daphne gnidium* L. (MP-Th-002 JHN)	Lezzâz, لزاز ⵍⵣⵣⵄ âlezzâz, ألزاز ⵄⵍⵣⵣⵄ Methnân,مثنان ⵎⵜⵏⵄⵏ	Hair loss (S23)	Leaves	Grind Dry	Cataplasm	Make hair look straighter Used as Henna
URTICACEAE Jussieu	*Urtica pilulifera* L. *Urtica dioica* L. *Urtica urens* L. (MP-Ur-001 JHN)	l-Hurrayqa, l-htrrîga, الحريقة Harraqa, حراقة Tagzine, تاجزين ⵜⴰⵊⵣⵉⵏ Thagzinte, ذاكزينت ⵜⵄⵊⵣⵉⵏⵜ Dhazinet, ذزينت ⵜⵄⵣⵉⵏⵜ	Hemorrhoids (K96)	Leaves			
VERBENACEAE Jaume Saint-Hilaire	*Aloysia citrodora* Palau (MP-Ve-001 JHN)	Lwîza, لويزة ⵍⵡⵉⵣⵄ	Sleep disturbance (P06) Calm the babies (P29) Relaxes the neurons (N29)	Leaves	Infusion	Oral	

VITACEAE Jussieu	*Vitis vinifera* L. (MP-Vi-001 JHN)	Dâlya, الدالية Tizwine تزوين ⵜⵣⵡⵉⵏⵉ (Arbre) Adire أضير ⴰⴷⵉⵔ (fruit)	Constipation (D12) Memory disturbance (P20)	Fruits	Consumption Fresh Dry	Oral	Edible Juice
ZINGIBERACEAE Martinov	*Elettaria cardamomum* White & Maton and *Elettaria major* Smith (MP-Zi-002 JN)	Qa'qoula, قاعقلة	Hormonal problem (T99)	Fruits Seeds	Infusion	Oral	Condiment Mixed with tea or coffee
ZINGIBERACEAE Martinov	*Zingiber officinale* Rosc (MP-Zi-003 JHN)	Skenjbīr, سكنجبير	Hormonal problems (T99) Joint pain (L20) Sciatica (L86)	Rhizomes	Powder Fresh Dry Compress	Oral External use	Mixed with tea or coffee Condiment

Annex 3. Table of Jerada Province species.

Family	Scientific Name (Voucher number)	Vernacular name	Diseases treated	Part used	Mode of preparation	Mode of administration	Other uses
AMARANTHACEAE Jussieu	*Anabasis aretioides* Moq. & Coss. (MP-Amara-001 J)	Kannouda,كنودة	Bowels movement (D18) Children's diseases (A29) Common cold (R29)	Whole plant	Decoction	Oral	
AMARANTHACEAE Jussieu	*Atriplex halimus* L. (MP-Amara-002 JH)	l-getaf, لجطف L-Hetba, الحطبة		Whole plant			Fodder
AMARANTHACEAE Jussieu	*Beta vulgaris* L. (MP-Amara-003 JHN)	Betterave, بطراف	Anemia (B78) Blood toxins (B04)	Roots	Consumption	Oral	Edible
AMARANTHACEAE Jussieu	*Dysphania ambrosioides* (L.) Mosyakin & Clemants (MP-Amara-004 JH)	L-Mkhinza,المخينزة	Common cold (R29) Sunburns (S80) Typhoid (D70) Headache (N01) Migraine (N89)	Whole plant	Infusion	Oral Cataplasm	
AMARANTHACEAE Jussieu	*Haloxylon scoparium* Pomel (MP-Amara-005 JH)	Rrmet, الرمت	Common cold (R29) Poison (A86) Snake stings (S12)	Whole plant	Decoction	Oral Cataplasm	
AMARANTHACEAE Jussieu	*Spinacia oleracea* L. (MP-Amara-006 JH)	Es-Selk, السلك	Heart pain (K01) Stomachache (D01)	Leaves	Cooked	Oral	Edible
AMARYLLIDACEAE J. Saint-Hilaire	*Allium ampeloprasum var. porrum* L. (MP-Amary-001 JHN)	L-poro, البورو	Hair care (S24)	Bulbs	Soaked	External use	Edible
AMARYLLIDACEAE J. Saint-Hilaire	*Allium cepa* L. (MP-Amary-002 JHN)	L-Bessla, البصلة L-Bessla l-Hemrra, البصلة الحمرا	Hair care (S24) Headache (N01) Infectious disease (A78) Skin infection (S11) Tonsilitis acute (R76)	Bulbs	Soaked	Oral Cataplasm	Edible Heals sick chickens
AMARYLLIDACEAE J. Saint-Hilair	*Allium sativum* L. (MP-Amary-003 JHN)	Et-Thoûm,الثوم	Back pain (L02) Hypertension (K86)	Bulbs	Friction	Suppository External use	Edible
ANACARDIACEAE R. Brown	*Pistacia atlantica* Desf (MP-An-001 J)	l-betma, البطمة Jodhim, الجضيم (name of the fruit)	Bad breath (D20) Dental hygiene (D19)	Fruits Resins	Chew	Oral	Consumed during the summer period Chewing gum
ANACARDIACEAE R. Brown	*Pistacia lentiscus* L. (MP-An-002 JH)	Dhrou,ضرو	General diseases (A29) Stomachache (D01)	Fruits	Fumigation Mixed	Inhalation Oral	Edible Used by herbalists in fumigations

APIACEAE Lindley	*Ammi visnaga* L. (MP-Api-002 JHN)	Bachnikha, بشنيخة	Dental problems (D19)	Umbels Fruits	Powder	Gargle	Use as a toothpick
APIACEAE Lindley	*Ammodaucus leucotrichus* Cossone & Durieu (MP-Api-003 JHN)	Kammūn eṣ-ṣōfi, الكمون الصوفي	Coldness in stomach (D29) Coldness (A29) Indigestion (D07)	Fruits	Decoction Infusion	Oral	Condiment
APIACEAE Lindley	*Ammoides pusilla* (Brot.) (MP-Api-004 JHN)	Nunkha, نونخا	External fever (A03) Internal fever (A03)	Aerial part of the plant	Decoction Mixed	Oral External use	Condiment
APIACEAE Lindley	*Anethum graveolens* L. (MP-Api-005 JHN)	كروية عمية, Kerwiyâ ‘amya	Stomachache for adult (D01) and babies (D01)	Fruits Whole plant	Infusion Fumigation	Oral Inhalation	Condiment Against the evil eye
APIACEAE Lindley	*Apium graveolens* L. (MP-Api-006 JHN)	الكرافس, āl-krāfs ʿrwq āl-krāfs, عروق الكرافس	Bladder complaint (U13)	Leaves Stems	Decoction	Oral	Edible
APIACEAE Lindley	*Apium nodiflorum* (L.) Lag. (MP-Api-007 JH)	Ziyata, زياتة		Leaves Stems			Edible
APIACEAE Lindley	*Carum carvi* L. (MP-Api-008 JHN)	Karwiyâ, كروية	Asthma (R96) Bowel movements (D18)	Fruits	Decoction (20 min) Grind	Oral	Condiment, used in the Moroccan soup “Harrira”
APIACEAE Lindley	*Conium maculatum* L. (MP-Api-009 J)	Ziyyâta, الزياتة	Constipation (D12)	Seeds	Decoction	Oral	
APIACEAE Lindley	*Coriandrum sativum* L. (MP-Api-010 JHN)	Qosbar قسبر Qezbor, قزبر	Sleep disturbance (P06) Stomachache (D01)	Leaves Stems Seeds	Decoction Consumption Fresh Dry	Oral	Condiment, used in the Moroccan soup “Harrira” and the bread
APIACEAE Lindley	*Cuminum cyminum* L. (MP-Api-011 JHN)	Kemmûn, الكمون	Stomachache (D01)	Seeds	Decoction Powder	Oral	Condiment
APIACEAE Lindley	*Daucus carota* L. *var. sativa* L. (MP-Api-012 JHN)	Zroudiya, زرودية	Bladder weakness (U05) Visual disturbance (F05)	Roots Seeds	Cooked with honey	Oral	Edible

APIACEAE Lindley	*Eryngium triquetrum* Vahl. *Eryngium tricuspidatum* L. *Eryngium campestre* L. (MP-Api-013 JHN)	Quoq Es-Shouk, قوق الشوك	Diuretic (U08)	Leaves	Infusion	Oral	
APIACEAE Lindley	*Ferula communis* L. (MP-Api-014 JHN)	بوبال, Boubal		Gum-resins Young shoots	Fumigation		Edible Fasukh, الفاسوخ (magical use)
APIACEAE Lindley	*Foeniculum vulgare* Mill. (MP-Api-015 JHN)	El-Besbas, البسباس	Bowel movement (D18) Constipation (D12) Blood pressure (K85) Gas (D08)	Bulbs Leaves Stems Seeds	Infusion Consumption	Oral	Fodder Edible
APIACEAE Lindley	*Foeniculum vulgare.* Mill. *Foeniculum vulgare* subsp.*vulgare* Miller (MP-Api-016 JHN)	En-nafe', النافع	Gas (D08) Common cold (R29) Cystitis (U71)	Seeds	Infusion	Oral	Condiment
APIACEAE Lindley	*Petroselinum crispum* (Mill.) (MP-Api-018 JHN)	Ma'dnous, المعدنوس	Kidney lithiasis (U14) Anemia (B78)	Leaves Stems	Decoction	Oral	Edible
APIACEAE Lindley	*Pimpinella anisum* L. (MP-Api-020 JHN)	Habbat-Hlaoua, حبة حلاوة	Gas (D08) Common cold (R29)	Seeds	Infusion	Oral	Condiment
APOCYNACEAE Jussieu	*Nerium oleander* L. (MP-Apo-001 JHN)	Ed-defla, الدفلة	Measles (A71) Mouth diseases (D83) Allergy (A92)	Leaves	Fumigation Decoction	External use Inhalation	
ARACEAE Jussieu	*Lemna minor* L. (MP-Ara-001 J)	Al Khaz, الخز					Useless
ARECACEAE Berchtold & J. Presl	*Chamaerops humilis* L. (MP-Are-002 J)	Ed-dûm,الدوم	Renal toxins (U14)	Roots	Decoction	Oral	
ARECACEAE Berchtold & J. Presl	*Phoenix dactylifera* L. (MP-Are-003 JHN)	En-Nekhla, النخلة Tmer, تمر	Eye disease (F29)	Nuts Fruits	Grind Used as Kohl	External use	Edible Nut added with the meat reduces the cooking time
ARISTOLOCHIACEAE Jussieu	*Aristolochia longa* L. *Aristolochia baetica* L. (MP-Ari-001 JHN)	Bereztem, برزطم	Cancer (A79)	Roots	Mixed with honey	Oral	

ASPARAGACEAE Jussieu	*Asparagus acutifolius* L. *Asparagus albus* L. *Asparagus pastorianus* Webb & Berthel. *Asparagus horridus* L. *Asparagus altissimus* Munby (MP-Aspa-001 JHN)	Sekum, سكوم	Diabetes (T90) Hypertension (K86) Cancer (A79)	Young shoots	Consumption	Oral	Edible Camel fodder
ASPARAGACEAE Jussieu	*Drimia maritima* (L.) Stearn (MP-Aspa-002 JH)	‘ansal, العنصل Far’ouna, فرعونة	Hepatitis (D97) Diabetes (T90) Cancer (A79) Gastric ulcers (D86)	Bulbs	Cooked	Oral	
ASPARAGACEAE Jussieu	*Leopoldia comosa* (L.) Parl. (MP-Aspa-003 J)	L-Kikout, الكيكوط Basslat Ed-Dhib, بصلة الذيب		Bulbs	Boiled		Edible Used as glue
ASTERACEAE Berchtold & J. Presl	*Achillea leptophylla* M. Bieb. (MP-Ast-001 J)	Es-Shih El-Khrissi, الشيح الخريصي	Alopecia areata (S23) Intestinal worms for kids (D96)	Whole plant Leaves Stems	Infusion	Oral	
ASTERACEAE Berchtold & J. Presl	*Anacyclus pyrethrum* (L.) Link (MP-Ast-002 J)	Tiknitset, تكنتست	Common cold (R29) Anesthetic (A29)	Roots	Infusion	Oral	
ASTERACEAE Berchtold & J. Presl	*Artemisia arborescens* L. (MP-Ast-003 JHN)	Es-shiba, الشيبة	Common cold (R29) Headache (N01)	Leaves Stems	Decoction Poured the water on the head. Make sure that it touches all the parts of the head	External use Oral	Drink
ASTERACEAE Berchtold & J. Presl	*Artemisia herba-alba* Asso (MP-Ast-004 JHN)	Es-Shih, الشيح	Loss of appetite (T03) Wound (S18) Asthma (R96) Alopecia areata (S23) Intestinal worms (D96) Stomachache (D01) Eye allergy (F29) Ear allergy (H29)	Leaves Stems	Decoction	Oral Inhalation	Drink

ASTERACEAE Berchtold & J. Presl	*Calendula arvensis* L. *Calendula officinalis* L. (MP-Ast-005 J)	Jemmra, الجمرة	Burn (S14)	Flowers	Friction	External use	
ASTERACEAE Berchtold & J. Presl	*Carthamus tinctorius* L. (MP-Ast-006 J)	zo'fer, الزعفر	Jaundice (D13)	Flowers	Boiled in milk	Oral	Condiment
ASTERACEAE Berchtold & J. Presl	*Chamaemelum nobile* (L.) All. (MP-Ast-008 JHN)	Babounej, بابونج	Digestive system diseases (D99)	Flowers	Infusion	Oral	
ASTERACEAE Berchtold & J. Presl	*Cichorium intybus* L. (MP-Ast-009 JH)	Arbiyane, أربيان L-Hindibae,الهندباء		Leaves	Powder		Cosmetic use : mixed with Henna and put it on the hair
ASTERACEAE Berchtold & J. Presl	*Cynara cardunculus* L. (MP-Ast-010 JHN)	L-khorchef,خرشف	Liver diseases (D97)	Flower buds	Cooked	Oral	Edible Transforms the milk into cheese
ASTERACEAE Berchtold & J. Presl	*Cynara scolymus* L. (MP-Ast-011 JHN)	El-Quoq, القوق L-Qorni', قرنيع	Liver diseases (D97)	Flower buds	Cooked	Oral	Edible
ASTERACEAE Berchtold & J. Presl	*Dittrichia viscosa* (L.) Greuter subsp. *Viscosa* (MP-Ast-012 JHN)	Magraman مكرمان	Burn (S14) Bowels movement (D18) Hemorrhoids (K96) Gastric ulcers (D87) Wounds (S18)	Leaves	Infusion	Oral	
ASTERACEAE Berchtold & J. Presl	*Echinops spinosissimus* Turra subsp. *spinosissimus* (MP-Ast-013 J)	Chdeg Ej-Jmel, شدق الجمل Tasekra,تاسكرة Chouk L-Hmir, شوك الحمير	Diarrhea (D11)	Roots	Decoction	Oral	
ASTERACEAE Berchtold & J. Presl	*Glebionis coronaria* (L.) Tzvelev *Glebionis segetum* (L.) Fourr. (MP-Ast-014 JH)	L-Oqhowan, الأقحوان Named chicken feet رجلة الدجاج		Whole plant			Aromatic Mixed with coffee Enter in several dishes (Chiken, Moroccan soup…)

ASTERACEAE Berchtold & J. Presl	*Lactuca sativa* (L.) (MP-Ast-015 JHN)	L-khass, الخس	Constipation (D12) Stomachache (D01)	Leaves	Consumption	Oral	Edible
ASTERACEAE Berchtold & J. Presl	*Matricaria chamomilla* L. (MP-Ast-016 JHN)	Babounej, بابونج	Bowels movement (D18)	Flowers	Infusion	Oral	
ASTERACEAE Berchtold & J. Presl	*Rhaponticum acaule* (L.) DC (MP-Ast-017 J)	Tafgha, تافغة	Cancer (A79) Liver diseases (D97)	Roots	Powder Mixed with honey	Oral	
ASTERACEAE Berchtold & J. Presl	*Scorzonera undulata* Vahl. (MP-Ast-019 J)	Talma, تالمة	Menstruation irregular (X07) Diarrhea (D11)	Roots	Decoction	Oral	Edible
ASTERACEAE Berchtold & J. Presl	*Silybum marianum* (L.) Gaertn. (MP-Ast-020 JH)	Chouk L-Hmir, شوك الحمير		Inflorescences			Camel fodder Edible with Bakkoula
BORAGINACEAE Jussieu	*Borago officinalis* L. (MP-Bo-001 J)	Lsane El-bqer, لسان البقر Lsane Et-Tour, لسان الثور		Whole plant			Edible Fodder
BRASSICACEAE Burnett	*Brassica napus* L. *Brassica rapa* L. (MP-Br-001 JHN)	El-Left, اللفت	Typhoid (D70) Common cold (R29)	Roots Leaves	Sirop (mixed with sugar)	Oral	Edible
BRASSICACEAE Burnett	*Brassica oleracea* L. (MP-Br-003 JHN)	Es-Sheflour, الشفلور		Inflorescences			Edible
BRASSICACEAE Burnett	*Eruca vesicaria* (L.) Cav. (MP-Br-004 JH)	Ej-Jerjir, الجرجير	Alopecia areata (S23)		Decoction	Oral	
BRASSICACEAE Burnett	*Lepidium sativum* L. (MP-Br-005 J)	Habb Er-rchad, حب الرشاد	Children's diseases (A29) Joint pain (L20) Memory disturbance (P20)	Seeds	Mixed with milk or water or dates Powder	Oral	
BRASSICACEAE Burnett	*Raphanus sativus* L. (MP-Br-006 JHN)	Lfjel, لفجل		Roots			Edible Against demonic possession
BRASSICACEAE Burnett	*Sinapis alba* L. (MP-Br-007 J)	L-khardel, الخردل	Cough (R05) Allergy (A92)	Seeds	Powder Mixed with honey	Oral	

CACTACEAE Jussieu	*Opuntia ficus-indica f. amyclaea* (Ten.) Schelle *Opuntia ficus-indica* (L.) Mill. (MP-Cac-001 JHN)	Es-Sebar,الصبار Ze'boula, Nouar El-Hendiya, نوار الهندية (الزْعْبُولَة) El-Hendiya, الهندية	Spasm (N08) Diarrhea (D11)	Fruits Sap	Hashed	Oral	Edible
CAPPARACEAE Jussieu	*Capparis spinosa* L. (MP-Cap-001 J)	L-Kabbar,الكبار	Joint pain (L20)	Seeds	Mixed with milk	Oral	
CARYOPHYLLACEAE Jussieu	*Corrigiola telephiifolia* Pourr (MP-Car-001 J)	Serghina, سرغينة	Common cold (R29) Anaesthetizing the Mouth (D83)	Roots	Fumigation Mixed with honey	Inhalation Oral	
CARYOPHYLLACEAE Jussieu	*Gypsophila vaccaria* (L.) Sm. (MP-Car-002 J)	Tighighit,تغيغيت	Indigestion (D07)	Roots Leaves	Consumption Raw Cooked	Oral	Edible
CARYOPHYLLACEAE Jussieu	*Herniaria hirsuta* L. (MP-Car-003 JH)	Herrâss L-hjer, هُرَّاسْ الحْجْر Kasser L-hjer, كاسر الحجر Theqab L-hjer, ثقاب الحجر	Kidney lithiasis (U14) Bladder complain (U13) Kidney problem (U14)	Whole plant	Decoction	Oral	
CONVOLVULACEAE Jussieu	*Convolvulus arvensis* L. *Convolvulus althaeoides* L. *Convolvulus siculus* L. (MP-Co-001 JH)	Lawaya, اللواية mesran ddib, مصران الذيب	Sciatica (L86)	Leaves	Powder	External use Bandage	
CUCURBITACEAE Jussieu	*Citrullus lanatus* (Thunb.) Matsum. & Nakai (MP-Cu-002 JHN)	Ed-deli',الدليع	Refreshing (A29) Kidney complaint (U14) Bladder complaint (U13)	Fruits Pulp	Consumption	Oral	Edible
CUCURBITACEAE Jussieu	*Cucumis melo* L. (MP-Cu-003 JHN)	Swihla, سويهلة	Bladder complain (U13)	Fruits	Consumption	Oral	Edible
CUCURBITACEAE Jussieu	*Cucumis sativus* L. *Cucumis melo* L. subsp. *melo* (MP-Cu-004 JHN)	l-khyar, الخيار (*Cucumis sativus L.)* Fagouss, فقوس (*Cucumis flexuosus L.)*	Sunburns (S80) Typhoid (D70) Hepatitis A (D72)	Fruits	Friction Consumption	Oral	Edible
CUCURBITACEAE Jussieu	*Cucurbita maxima* Duchesne (MP-Cu-005 JHN)	Ger'a Hamra, جرعة الحمراء	Anemia (B78) Hormonal problem (T99) Typhoid (D70)	Fruits	Consumption	Oral	Edible
CUCURBITACEAE Jussieu	*Cucurbita pepo* L. (MP-Cu-006 JHN)	Ger'a,كرعة		Fruits			Edible

CUCURBITACEAE Jussieu	*Lagenaria siceraria* (Molina) Standl. (MP-Cu-008 J)	L-gr'a Es-slaouia, القرعة السلاوية		Fruits	Fumigation	External use	Edible Cosmetic (For hair)
CUPRESSACEAE Rich. Ex Bartl.	*Juniperus oxycedrus* L. (MP-Cup-001 J)	Taggâ, طاجة	Eczema (S87)	Leves Barks	Powder	Cataplasm	Manufacture of tar
CUPRESSACEAE Rich. Ex Bartl.	*Juniperus phoenicea* L. (MP-Cup-002 JHN)	L-'ar'ar, العرعار		Barks			Manufacture of tar
CUPRESSACEAE Rich. Ex Bartl.	*Tetraclinis articulata* (Vahl) Mast. (MP-Cup-003 JHN)	L-'ar'ar, العرعار Quochor l-'ar'ar, قشور العرعار	Bowels movement (D18) Common cold (R29) Uterus complaint (X29)	Leaves Barks	Fumigation Powder Mixed with olive oil Mixed with Henna	External use	Manufacture of tar
CYPERACEAE Jussieu	*Cyperus esculentus* L. (MP-CY-001 JHN)	Habb el-'aziz, حب العزيز		Whole plant			Fodder
CYPERACEAE Jussieu	*Cyperus longus* L. (MP-CY-002 J)	Tara, تارا Sa'd, سعد		Rhizomes	Dry		Incense
EPHEDRACEAE Dumort	*Ephedra alata* Decne. *Ephedra altissima* Desf. *Ephedra fragilis* Desf. (MP-Ep-001 J)	'Elnada, علاندة	Cancer (A79) Poison (A86)	Leaves	Decoction	Oral	
ERICACEAE Jussieu	*Arbutus unedo* L. (MP-Er-001 JH)	Sasnu, ساسنو	Stomachache (D01) Hepatitis (D97)	Fruits Leaves	Decoction	Oral	Edible
EUPHORBIACEAE Jussieu	*Euphorbia lathyris* L. (MP-Eu-002 J)	Hebt l-muluk, حبة الملوك	Constipation (D12)	Fruits	Consumption	Oral	
EUPHORBIACEAE Jussieu	*Mercurialis perennis* L. *Mercurialis annua* L. (MP-Eu-004 J)	L-Hriqa Lmelssa, الحريقة الملسا	Prostate complaint (Y06)	Whole plant Seeds	Decoction	Oral	Fodder for livestock Seed are fodder for birds
EUPHORBIACEAE Jussieu	*Ricinus communis* L. (MP-Eu-005 JHN)	L-Kharoua', الخروع	Hair care (S24)	Seeds	Oil	External use	Cosmetic use
FABACEAE Lindley	*Anagyris foetida* L. (MP-Fab-001 J)	Fwilat l-klab, فويلة لكلاب					Toxic plant

FABACEAE Lindley	*Astragalus boeticus* L. *Astragalus caprinus* L. *Astragalus sesameus* L. *Astragalus hamosus* L. (MP-Fab-002 J)	Qarn l-ghzal, قرن الغزال L-kedad, الكداد (*Astragalus boisseri Fisch. and Astragalus armatus Lam.)*		Seeds			Edible
FABACEAE Lindley	*Ceratonia siliqua* L. (MP-Fab-003 JHN)	L-kharoub,الخروب	Bowels movement (D18)	Fruits	Mixed with honey	Oral	Edible
FABACEAE Lindley	*Cicer arietinum* L. (MP-Fab-004 JHN)	L-Hûmoss,الحمص	Kidney problem (U14) Melasma (S08)	Seeds	Soaked	External use	Edible
FABACEAE Lindley	*Crotalaria saharae* Coss. *Crotalaria vialettei* Batt (MP-Fab-005 J)	Fouila,فويلة Foul L-Klab, فول الكلاب					Useless
FABACEAE Lindley	*Glycyrrhiza glabra* L. *Glycyrrhiza foetida* Desf (MP-Fab-006 JN)	‘Arq Souss, عرق سوس	Asthma (R96) Cough (R05) Itching (S29)	Roots	Decoction	Oral	
FABACEAE Lindley	*Lathyrus clymenum* L. *Lathyrus aphaca* L. *Lathyrus ochrus* (L.) DC. *Lathyrus sativus* L. *Lathyrus cicera* L. *Lathyrus sylvestris* L. (MP-Fab-007 JN)	Jelban,جلبان Jelban boqroune, جلبان بوقرون		Seeds			Good for livestock Fodder
FABACEAE Lindley	*Lens culinaris* Medik. (MP-Fab-008 JHN)	‘Des, عدس	Anemia (B78)	Seeds	Mixed	Oral	Edible
FABACEAE Lindley	*Lupinus albus* L. (MP-Fab-009 JN)	Tirmes, ترمس Foul gnaoua, فول كناوة	Weight loss (T08) Diabetes (T90)	Seeds	Powder	Oral	
FABACEAE Lindley	*Medicago sativa* L. (MP-Fab-010 JN)	Fassâh, فصة	Nervousness (P01)	The first harvest	Steamed Powder Mixed with camel grease	Oral	Fodder for livestock Edible
FABACEAE Lindley	*Ononis natrix* L. *Ononis tournefortii* Coss. (MP-Fab-011 JH)	saboun la’zara, صابون العزارة Ech-Chebreg, الشبرك	Childbirth (W90)	Roots	Heat	External use	
FABACEAE Lindley	*Pisum sativum* L. (MP-Fab-012 JHN)	Jelban, جلبان		Seeds Pods			Edible

FABACEAE Lindley	*Retama monosperma* (L.) Boiss. *Retama raetam* (Forssk.) Webb *Retama sphaerocarpa* (L.) Boiss. (MP-Fab-013 JH)	Er-Tem,الرتم Er-Ttem,الرطم	Cancer (A79) Poison (A86)	Barks	Decoction	Oral	Light the fire Cure the rabies of dogs
FABACEAE Lindley	*Senna alexandrina* Mill. (MP-Fab-014 JHN)	Es-sana, السانا	Bowels movement (D18) Constipation (D12) Constipation in Pregnancy (W29)	Leaves	Infusion	Oral	
FABACEAE Lindley	*Trigonella foenum-graecum* L. (MP-Fab-015 JHN)	L-Helba, الحلبة	Cancer (A79) Vein problems (K29) Blood toxins (B04) Lactation problem (W19) Loss of appetite (T03) Hair care (S24)	Seeds	Mixed	Oral External use	Edible Increase lactation in cows
FABACEAE Lindley	*Vicia ervilia* (L.) Willd (MP-Fab-016 JH)	Kerssala, كرسالة	Bowels movement (D18) Joint pain (L20)	Seeds	Soaked Powder	External use Oral	
FABACEAE Lindley	*Vicia Faba* L. (MP-Fab-017 JHN)	L-Foul,الفول	General health (A01) Bladder complain (U13) Asthma (R96)	Pods Seeds	Decoction	Oral	Edible
FAGACEAE Dumortier	*Castanea sativa* Mill. (MP-Fag-001 JHN)	L-Quastel, القسطل		Fruits			Edible
FAGACEAE Dumortier	*Quercus coccifera* L. (MP-Fag-002 J)	Querich l-helouf, كريش الحلوف	Asthma (R96) Loss of appetite (T03)	Nuts	Consumption	Oral	
FAGACEAE Dumortier	*Quercus rotundifolia* Lam. *Quercus ilex* L. (MP-Fag-003 JHN)	L-belout, البلوط Kûrrîch, كريش		Nuts			Edible
FAGACEAE Dumortier	*Quercus suber* L. (MP-Fag-004 JHN)	L-ferchi, الفرشي L-belout, البلوط		Nuts Barks			Edible Production of cork
IRIDACEAE Jussieu	*Crocus sativus* L. (MP-Ir-001 JHN)	Ze'frane, زعفران	General pain (A29) Wounds (S18) Anemia (B78)	Pistils	Mixed with kohl Boiled in milk	External use Oral	Edible
JUGLANDACEAE Perleb	*Juglans regia* L. (MP-Jug-001 JHN)	L-Grga', لكركاع	Anemia (B78) Weakness (A04)	Nuts	Decoction Powder Mixed	Oral	Edible

JUNCACEAE Jussieu	*Juncus maritimus Lam.* (MP-Jun-001 JH)	Zeri'at Azlaf, زريعة أزلاف Ssmâr, الصَّمَّار Azraf, أزراف	Bladder weakness (U05)	Seeds	Decoction	Oral	
LAMIACEAE Martynov	*Clinopodium nepeta* subsp. *spruneri* (Boiss.) Bartolucci & F.Conti (MP-Lam-002 JHN)	Ze'itra,زعيترة	Blood toxins (B04) Joint pain (L20) Stomachache (D01) Burn (S14) Typhoid (D70) Abdominal pain (D01) Common cold (R29) Childbirth (W90) Complication of pregnancy (W29) Wounds (S18) Hemorrhoids (K96)	Leaves	Infusion	Oral	Honey seasoning
LAMIACEAE Martynov	*Lavandula stoechas* L. (MP-Lam-003 JHN)	L-Khzama,الخزامى	Childbirth (W90) Infertility (W15)	Whole plant	Decoction Powder Heat	External use	Against humidity
LAMIACEAE Martynov	*Marrubium vulgare* L. (MP-Lam-004 JH)	Mrioua,مريوة Mriyoiya,مريويا	Typhoid (D70) Allergy (A92) Cancer (A79) Cough (R05) Nasal congestion (R07) Headache (N01) Hemorrhoids (K96) Hyperthyroidism (T85)	Whole plant	Instillation	Nasal droops	
LAMIACEAE Martynov	*Mentha pulegium* L. *Mentha gattefossei* Maire (MP-Lam-005 JHN)	Fliyo, فليو	Influenza (R80)	Leaves Stems	Infusion	Oral	Drink
LAMIACEAE Martynov	*Mentha spicata* L. *Mentha villosa* Huds. (MP-Lam-006 JHN)	Liqâma d-atay, ليقامة آتاي Ne'na' l-beldi, النعناع البلدي		Leaves Stems	Infusion	Oral	Drink Edible
LAMIACEAE Martynov	*Mentha suaveolens* Ehrh. (MP-Lam-007 JH)	Ne'na' es-soufi, نعناع الصوفي	Headache (N01)	Leaves Stems	Infusion	Oral	

LAMIACEAE Martynov	*Mentha piperita* L. (MP-Lam-008 JHN)	Ne'na', نعناع		Leaves Stems			Condiment Edible Add some leaves to get rid of the taste and the smell of burning in a dish
LAMIACEAE Martynov	*Ocimum basilicum* L. *Ocimum minimum* L. (MP-Lam-009 JN)	L-hbeq, الحبق	Tonsilitis acute (R76)	Leaves	Infusion	Oral	Condiment
LAMIACEAE Martynov	*Origanum compactum* Benth. *Origanum elongatum* (Bonnet) Emb. & Maire (MP-Lam-010 JHN)	Za'tar, زعتر	Common cold (R29) Gallbladder problem (D29)	Leaves	Boiled in milk Mixed with olive oil, honey and limon	Oral	Condiment
LAMIACEAE Martynov	*Origanum majorana* L. (MP-Lam-011 JHN)	Merdedouch, مرددوش	Weight loss (T08) Hormonal problem (T99) Diabetes (T90) Blood pressure (K85)	Leaves	Infusion	Oral	
LAMIACEAE Martynov	*Salvia officinalis* L. (MP-Lam-012 JHN)	Es-Salmiya, السالمية	Diabetes (T90) Hypertension (K86)	Leaves	Infusion Dry	Oral	Drink
LAMIACEAE Martynov	*Salvia rosmarinus* Schleid. (MP-Lam-013 JHN)	Azîr, أزير Iklil Al Jabal, إكليل الجبل	Blood toxins (B04) Joint pain (L20) Stomachache (D01) Burn (S14) Typhoid (D70) Common cold (R29) Childbirth (W90) Complication of pregnancy (W29) Wounds (S18) Hemorrhoids (K96)	Leaves	Oil Decoction	External use Oral	Heals livestock Edible Aromatic
LAMIACEAE Martynov	*Salvia verbenaca* L. (MP-Lam-014 J)	L-Khyyâta, الخياطة	Wounds (S18) Stomach wound (D29)	Leaves	Trituration	Cataplasm	

LAMIACEAE Martynov	*Teucrium polium* L. (MP-Lam-015 JHN)	Edja'da, الجعدة	Stomachache (D01) Heart pain (K01) Diabetes (T90) Hypertension (K86) Hair care (S24)	Whole plant	Decoction	Oral	
LAMIACEAE Martynov	*Thymus martinezii* Pau *Thymus vulgaris* L. (MP-Lam-016 JN)	Touchna, التوشنة (Thymus vulgaris L) Za'ter, زعتر	Common cold (R29) Allergy (A92)	Leaves	Infusion	Oral	Cosmetic use for hair
LAURACEAE Jussieu	*Cinnamomum cassia* (L.) J. Presl (MP-Lau-001 JHN)	Querfa, قرفة	Asthma (R96) Dysuria (U01) Uterus complaint (X29)	Barks	Powder Infusion	Oral	Spice
LAURACEAE Jussieu	*Laurus nobilis* L. *Laurus azorica* (Seub.) Franco (MP-Lau-002 JN)	Er-rend,الرند Warqat Sidna Moussa, ورقة سيدنا موسى	Indigestion (D07)	Leaves	Infusion	Oral	Condiment
LINACEAE Perleb	*Linum usitatissimum* L. (MP-Li-001 JHN)	Zeri'at El-Ketân, زريعة الكتان	Cholesterol (T93) Weight loss (T08) Tightness of heart (K02) Cancer (A79)	Seeds	Grind	Oral	Cosmetic Edible
LYTHRACEAE Jaume Saint-Hilaire	*Lawsonia inermis* L. (MP-Ly-001 JHN)	l-Hennah, الحنة	Fever (A03) Diarrhea (D11)	Leaves	Dry Powder Decoction	Cataplasm Oral	Hair dye To color the hands and feet For use in ceremonies
LYTHRACEAE Jaume Saint-Hilaire	*Punica granatum* L. (MP-Ly-002 JHN)	Rommân, رمان	Stomachache (D01) Gum diseases (D19) Bowels movement (D18)	Fruits Barks	Consumption Powder	Oral	Edible
MALVACEAE Jussieu	*Abelmoschus esculentus* (L.) Moench (MP-Ma-001 JH)	Mloukhiya,ملوخية	Diabetes (T90)	Fruits	Consumption	Oral	Edible
MALVACEAE Jussieu	*Gossypium herbaceum* L. (MP-Ma-003 JHN)	L-Qotn,القطن	Hemorrhage (A10)	White fiber		Bandage	Used in the clothing industry
MALVACEAE Jussieu	*Malva sylvestris* L. *Malva parviflora* L. (MP-Ma-004 JHN)	L-baquoula, البقولة L-Khobiza, الخبيزة	Hypertension (K86) Lactation problem (W19) Common cold (R29) Constipation (D12) Heart pain (K01)	Whole plant Leaves	Consumption	Oral	Edible

MORACEAE Gaudichaud	*Ficus carica* L. (MP-Mo-001 JHN)	L-Kermouss, الكرموس	Furuncle (S10)	Leaves Fruits	Friction Mixed	External use Cataplasm	Edible Natural fertilizer
MORACEAE Gaudichaud	*Morus alba* L. *Morus nigra* L. (MP-Mo-002 JHN)	Tût Al Bari, التوت البري	Common cold (R29) Sunburn (S80)	Leaves Fruits	Powder	Oral	Edible
MYRISTICACEAE R. Brown	*Myristica fragrans* Houtt (MP-Myri-001 J)	Gouza, جوزة	Headache (N01)	Nuts	Powder Mixed	Cataplasm	Aromatic
MYRTACEAE Jussieu	*Eucalyptus globulus* Labill. (MP-Myrt-001 JHN)	Kaliptosse,كاليبوتس	Common cold (R29)	Leaves	Decoction Fumigation	Inhalation	
MYRTACEAE Jussieu	*Myrtus communis* L. (MP-Myrt-002 JH)	Rihane, ريحان	Childbirth (W90)	Leaves	Infusion	Oral	
MYRTACEAE Jussieu	*Syzygium aromaticum* (L.) Merr. & Perry (MP-Myrt-003 JH)	L-Qronfel, القرنفل 'Oud En-Nouar, عود النوار	Fever (A03) Allergy (A92) Dental pain (D19) Furuncle (S10)	Cloves	Powder Mixed with Henna	Cataplasm	Spice
NITRARIACEAE Lindley	*Peganum harmala* L. (MP-Ni-001 JHN)	L-Hermel, الحرمل Dohn bezr el-harmel, seed oil of Harmel, دهن بزر الحرمل	Hair care (S24) Coldness (A29) Hemorrhoids (K96)	Seeds Leaves Roots	Fumigation	Steam in the house	Against livestock scabies
OLEACEAE Hoffmannsegg & Link	*Fraxinus angustifolia* Vahl. *Fraxinus excelsior* L. (MP-Ol-001 JN)	Tozalet, توزالت Lessan Et-tèr, لسان الطير	Diabetes (T90)	Leaves	Infusion	Oral	
OLEACEAE Hoffmannsegg & Link	*Jasminum grandiflorum* L. *Jasminum officinale* L. (MP-Ol-002 J)	L-yassmin,الياسمين	Redness (S07) Baby's skin irritation (S29)	Flowers	Oil Powder	External use	
OLEACEAE Hoffmannsegg & Link	*Olea europaea* L. subsp. *europaea var. europaea* (MP-Ol-003 JHN)	Zaytoûne, زيتون	Hypertension (K86) Diabetes (T90) Gum diseases (D19) Sciatica (L86) Stomachache (D01) Earaches (H01)	Leaves Fruits	Infusion Oil Instillation	Oral Ear drops	Edible Cosmetic
OLEACEAE Hoffmannsegg & Link	*Olea europaea subsp. Europaea var. Sylvestris* (L.) (Mill.) Lehr (MP-Ol-004 JHN)	Zebbûj,الزبوج	Hypertension (K86) Diabetes (T90) Gum diseases (D19) Sciatica (L86) Stomachache (D01) Earaches (H01)	Leaves Fruits	Infusion Oil Instillation	Oral Ear drops	Edible Cosmetic

PAPAVERACEAE Jussieu	*Glaucium corniculatum* (L.) Rudolph (MP-Pa-001 J)	Nwara sefra, نوارة صفرا		Whole plant			Edible (Steamed)
PAPAVERACEAE Jussieu	*Papaver rhoeas* L. *Papaver pinnatifidum* Moris (MP-Pa-002 JHN)	Bela'mâne (Bena'mâne), بلعمان (بنعمان)	Measles (A71)	Flowers	Cooked	Oral	
PAPAVERACEAE Jussieu	*Papaver somniferum* L. (MP-Pa-003 J)	Khechkhach, خشخاش					Toxic plant
PEDALIACEAE R. Brown	*Sesamum indicum* L. (MP-Pe-001 JHN)	Zenjlane, زنجلان	Hair care (S24)	Seeds	Oil	External use	Edible
PEDALIACEAE R. Brown	*Pinus halepensis* Mill. (MP-Pi-002 JH)	Sanuwbar, صنوبر Taga, طاجة	Wounds (S18) Children's diseases (A29) Weight loss (T08) General pain (A29) Stomachache (D01) Childbirth (W90) Acne (S96)	Fruits Resins	Decoction Grind	Oral External use Cataplasm	Edible Glu
PLANTAGINACEAE Jussieu	*Globularia alypum* L. (MP-Pl-001 JH)	'ayen lerneb, عين الأرنب	General health (A01) Bladder complain (U13)	Leaves	Decoction	Oral	
PLANTAGINACEAE Jussieu	*Plantago afra* L. (MP-Pl-002 JH)	Qatouna, قاطونة	Digestive system diseases (D99)	Seeds	Consumption Soaked	Oral	
PLANTAGINACEAE Jussieu	*Plantago major* L. *Plantago coronopus* L. (MP-Pl-003 JHN)	Bard o salam, برد و سلام Zentet l-khrouf, زنطيط الخروف	Wounds (S18) Burn (S14)	Leaves	Trituration	Cataplasm	
POACEAE Barnhart	*Aristida adscensionis* L. (MP-Poa-002 J)	As-semar, اسمار					
POACEAE Barnhart	*Arundo donax* L. (MP-Poa-003 JH)	l-qsab, القصب	Hair care (S24)	Roots			Entered in the construction of roof and manufacture of carpet
POACEAE Barnhart	*Avena sativa* L. (MP-Poa-004 JHN)	l-khratâl, الخرطال	Diabetes (T90) Cholesterol (T93)	Seeds	Consumption	Oral	Fodder for livestock Edible
POACEAE Barnhart	*Cenchrus americanus* (L.) Morrone (MP-Poa-005 JHN)	Ilân, إيلان	Fracture (L76)	Seeds	Consumption	Oral	

POACEAE Barnhart	*Coix lacryma-jobi* L. (MP-Poa-006 J)	Habat el-baraka, حبة البركة	For all diseases except death (A29)	Seeds	Powder Oil	Oral External use	
POACEAE Barnhart	*Hordeum vulgare* L. (MP-Poa-008 JHN)	Es-s'îr, الشعير	General health (A01) Stomachache (D01) Diarrhea (D11) Bowels movement (D18)	Seeds	Consumption	Oral	Edible
POACEAE Barnhart	*Oryza sativa* L. (MP-Poa-009 JHN)	Al-rôz, الروز	General health (A01) Lighten the complexion (S29) Hair care (S24) Diarrhea (D11)	Seeds	Boiled Soaked Cooked with milk	Oral External use	Edible
POACEAE Barnhart	*Panicum miliaceum* L. (MP-Poa-010 J)	Sorgho, سورغو		Seeds			Fodder for livestock Edible
POACEAE Barnhart	*Panicum turgidum* Forssk. (MP-Poa-011 J)	Zaymo, زايمو Tafoust, تافوست		Whole plant			Good fodder for horses
POACEAE Barnhart	*Sorghum halepense* (L.) Pers. *Sorghum bicolor* (L.) Moench (MP-Poa-012 J)	Dra rqiqa, ذرة رقيقة		Seeds			Edible Fodder for livestock
POACEAE Barnhart	*Stipa tenacissima* L. (MP-Poa-013 J)	L-helfa, الحلفة	Kidney lithiasis (U14) Diabetes (T90) Weight loss (T08)	Roots	Grind Mixed with leaves of jujube and boiled	Oral	
POACEAE Barnhart	*Triticum aestivum* L. *Triticum turgidum* L. *Triticum turgidum* subsp. *durum* (Desf.) Husn. (MP-Poa-014 JHN)	Tahin Fors, طحين الفورص Lfarina, فرينة l-gemh, القمح	Constipation (D12)	Seeds	Consumption	Oral	Edible
POACEAE Barnhart	*Zea mays* L. (MP-Poa-015 JHN)	Ad-Dora, الذرة	General health (A01)	Seeds Ears of corn	Consumption	Oral	Edible
POLYGONACEAE Jussieu	*Rumex acetosa* L. *Rumex crispus* L. *Rumex pulcher* L. *Rumex vesicarius* L. (MP-Pol-001 JN)	Hummayda,حميضة		Whole plant			Edible Fodder for livestock
PORTULACACEAE Jussieu	*Portulaca oleracea* L. (MP-Por-001 JH)	Rejla, الرجلة	Kidney lithiasis (U14) Gout (T92)	Whole plant	Cooked	Oral	Edible

PTERIDACEAE E.D.M.Kirchn	*Adiantum capillus-veneris* L. (MP-Pt-001 J)	Quzbûrat l-bîr, قزبرة البير	Stomachache (D01)	Whole plant Leaves Stems	Infusion	Oral	Fodder for livestock
PTERIDACEAE E.D.M.Kirchn	*Pteris aquilina* (L.) Kuhn (MP-Pt-002 JHN)	Sarsakh, سرخس					Decorative plant
RANUNCULACEAE Jussieu	*Clematis flammula* L. *Clematis vitalba* L. (MP-Ra-002 J)	Nar l-barda, نار الباردة	Burn (S14)	Leaves	Trituration	Cataplasm	
RANUNCULACEAE Jussieu	*Nigella sativa* L. *Nigella damascena* L. *Nigella arvensis* L. (MP-Ra-003 JHN)	Sanûj, سانوج Habba es-sawda, حبة السوداء	General pain (A29) Joint pain (L20) Rheumatism (L99)	Seeds	Mixed with *Coix lacryma-jobi* L. and boiled Powder mixed with milk	Oral	Condiment
RHAMNACEAE Jussieu	*Rhamnus alaternus* L. (MP-Rh-001 J)	Mlîles, مليلس	Asthma (R96) Loss of appetite (T03) Anemia (B87) Blood toxins (B04) Hepatitis (D97)	Barks	Decoction	Oral	Edible
RHAMNACEAE Jussieu	*Ziziphus lotus* (L.) Lam. (MP-Rh-002 JHN)	Sedra, السدرة Nnbeg, نبق		Leaves Fruits			Edible Against demoniac possession
ROSACEAE Jussieu	*Cydonia oblonga* Mill. (MP-Ro-002 JHN)	Sferjel, السفرجل	Stomachache (D01) Liver diseases (D97) Diarrhea (D11) Excessive thirst (T01)	Fruits			Edible
ROSACEAE Jussieu	*Malus domestica* Borkh. (MP-Ro-003 JHN)	Tefâh,التفاح	Kidney lithiasis (U14) Indigestion (D07)	Fruits Fruit peel	Vinegar Decoction	Oral	Edible
ROSACEAE Jussieu	*Prunus armeniaca* L. (MP-Ro-004 JH)	Mechmach, مشماش	Cancer (A79) Breast cancer (X76) Facial spots (S29)	Almonds	Chew Consumption	External use Oral	Edible
ROSACEAE Jussieu	*Prunus avium* (L.) L. *Prunus cerasus* L. (MP-Ro-005 JHN)	Habb l-mlouk, حب الملوك	Asthma (R96) Gout (T92)	Fruits Branches	Infusion Consumption	Oral	Edible
ROSACEAE Jussieu	*Prunus domestica* L. (MP-Ro-006 JH)	Barqouq, برقوق	Constipation (D12)	Fruits			Edible

ROSACEAE Jussieu	*Prunus dulcis* (Mill.) D. A. Webb (MP-Ro-007 JHN)	Louz mor, لوز مر	Diabetes (T90) Brown spot (S29) Melasma (S08) Weakness (A04)	Almonds	Chew Consumption	External use Oral	Edible
ROSACEAE Jussieu	*Prunus persica* (L.) Stokes (MP-Ro-008 JHN)	Khûkhu, الخوخ	Cancer (A79) Breast cancer (X76)	Leaves	Decoction	Oral	Edible
ROSACEAE Jussieu	*Pyrus communis* L. (MP-Ro-009 JHN)	Bû-'wid, بوعويد	Hypertension (K86) Rheumatism (L99) Joint inflammation (L20)	Fruits	Consumption	Oral	Edible
ROSACEAE Jussieu	*Rosa x centifolia* L. *Rosa x damascena* Mill. (MP-Ro-011 JHN)	Werd beldi, الورد البلدي	Bowels movement (D18) Fever (A03)	Flowers Petals	Infusion Spray the head and the socks	Oral External use	Cosmetic use It's used in the preparation of flower water (Ma-zher)
ROSACEAE Jussieu	*Rubus ulmifolius* Schott. (MP-Ro-012 JH)	L-'liq, العليق		Fruits			Edible
RUBIACEAE Jussieu	*Rubia peregrina* L. *Rubia tinctoria* L. (MP-Rub-001 J)	Fuwwa, فوة	Anemia (B78) Cholesterol (T93)	Whole plant	Decoction	Oral	
RUTACEAE Jussieu	*Citrus × aurantium amara* Engl. (MP-Rut-001 JHN)	Er-renj,الرنج	Diabetes (T90) Asthma (R96)	Fruits flowers	Mixed with olive oil and honey Juice	Oral	Edible Jam It's used in the preparation of flower water (Ma-zher)
RUTACEAE Jussieu	*Citrus × aurantium* L. (MP-Rut-002 JHN)	Letsîn, لتشين Nouar l-bortoqal, نوار البرتقال	Cough (R05) Refreshing (A29)	Fruits Flowers	Juice	Oral	Edible Drink Aromatic
RUTACEAE Jussieu	*Citrus × limon* (L.) Burm. fil. *Citrus × aurantiifolia* (Christm.) Swingle (MP-Rut-003 JHN)	Al-laimoin,الليمون Al-lim, الليم	Gallbladder problem (D29) Weight loss (T08) Body toxins (A29) Common cold (R29)	Fruits	Mixed with olive oil and honey Juice with hot water	Oral	Edible

SALICACEAE Mirbel	*Populus alba* L. *Populus nigra* L. *Populus euphratica* Olivier (MP-Sali-001 JHN)	Sefsaf, صفصاف	Hair care (S24)	Leaves	Friction	External use	
SALICACEAE Mirbel	*Salix alba* L. *Salix purpurea* L. (MP-Sali-002 J)	Ou'd lma, عود الما	Bowels movement (D18)	Leaves	Decoction	Oral	
SALVADORACEAE Lindley	*Salvadora persica* L. (MP-Salv-001 JHN)	Siwak, سواك	Whitened teeth (D19) Bad breath (D20)	Roots	Chew at the end and then brush the teeth Soaked in water with lemon to prevent the gingiva from taking a reddish color that tends to the black	External use	Use as a toothpick
SCHISANDRACEAE Blume	*Illicium verum* Hook. fil. (MP-Sch-001 JHN)	Al Najm, النجم	Colic (D01) Indigestion (D07) Bad breath (D20) Cystitis (U71)	Fruits	Infusion	Oral	Condiment Aromatic
SOLANACEAE Jussieu	*Capsicum frutescens* L. (MP-So-001 JHN)	Felfel hârr, فلفل حار	Loss of appetite (T03)	Fruits	Consumption	Oral	Condiment
SOLANACEAE Jussieu	*Hyoscyamus albus* L. *Hyoscyamus niger* L. (MP-So-002 JN)	Bû-lrjouf, بولرجوف Benj, بنج	Sedative (A29)	Whole plant	Trituration	Cataplasm	
SOLANACEAE Jussieu	*Solanum lycopersicum* L. (MP-So-005 JHN)	Maticha, مطيشة	Lighten the complexion (S29) Acne (S96) Refreshing (A29)	Fruits	Friction	External use	Edible
SOLANACEAE Jussieu	*Solanum melongena* L. (MP-So-006 JHN)	Brâniya, البرانية	General health (A01) Stomachache (D01)	Fruits	Roasted Cooked	Oral	Edible
SOLANACEAE Jussieu	*Solanum nigrum* L. (MP-So-007 JH)	'ineb ed-dîb, عنب الذيب	Hepatitis A (D72)	Leaves Berries	Infusion	Oral	Edible
THYMELAEACEAE Jussieu	*Aquilaria agallocha* (Lour.) Roxb. (MP-Th-001 JHN)	l-'ûd l-qmârî, عود القماري	Cancer (A79)	Barks	Decoction Fumigation	Oral Inhalation	Fragrant: Perfumes the air

THYMELAEACEAE Jussieu	*Daphne gnidium* L. (MP-Th-002 JHN)	lezzâz âlezzâz, أزاز Metnân,مثنان	Diabetes (T90) Dental pain (D19)	Leaves	Dry Grind Cooked	Cataplasm	Used as Henna for hair
URTICACEAE Jussieu	*Urtica pilulifera* L. *Urtica dioica* L. *Urtica urens* L. (MP-Ur-001 JHN)	l-Hurrayqa, l-htrrîga, الحريقة	Hypertension (K86) Lactation problem (W19)	Whole plant	Consumption	Oral	Against lactation problem of cows
VERBENACEAE Jaume Saint-Hilaire	*Aloysia citrodora* Palau (MP-Ve-001 JHN)	Lwîza, لويزة	Sleep disturbance (P06) Calm the babies (P29) Stress (P02)	Leaves	Infusion	Oral	Drink
VITACEAE Jussieu	*Vitis vinifera* L. (MP-Vi-001 JHN)	Dâlya, الدالية, Le'neb, العنب Zabîb, الزبيب Waraq Al Daliya, ورق الدالية	Constipation (D12) Vertigo (N17) Sunburn (S80) Furuncle (S10) Memory disturbance (P20) Loss of focus (P20)	Fruits Leaves	Juice Mixed	Oral Cataplasm	Edible
ZINGIBERACEAE Martinov	*Elettaria cardamomum* White & Maton and *Elettaria major* Smith (MP-Zi-002 JN)	Qa'qola, قعقلة	Bowels movement (D18)	Seeds	Infusion	Oral	Aromatic
ZINGIBERACEAE Martinov	*Zingiber officinale* Rosc (MP-Zi-003 JHN)	سكنجبير, Skenjbīr	Coldness (A29) Common cold (R29) Gas (D08) Menstruation irregular (X07)	Rhizomes	Infusion Powder Fresh Mixed Oil	Oral Cataplasm	Aromatic Mixed with coffee