Originality and meaning of the vernacular names of medicinal plants common in the central Middle Atlas – Morocco

Mariame Najem, Laila Nassiri, Mohamed El Mderssa and Jamal Ibijbijen

Correspondence

Mariame Najem[1]*, Laila Nassiri[2], Mohamed El Mderssa[3] and Jamal Ibijbijen[2]

[1]Laboratory of Pharmacology-Toxicology, Faculty of Medicine, Pharmacy and Dentistry, Sidi Mohamed Ben Abdellah University, Fez, Morocco.
[2]Environment and valorization of microbial and plant resources Unit, Faculty of Sciences, Moulay Ismail University of Meknes, Meknes, Morocco.
[3]Polyvalent Team in Research and Development, Polydisciplinary Faculty, Sultan Moulay Sliman University, Beni Mellal, Morocco.

*Corresponding Author: mariamenajem@gmail.com

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Research

Abstract

Background: The vernacular naming of plants, including medicinal ones, is not the result of chance. It rather finds its roots in the use of characters and characteristics of plants. In addition to being a junction between generations and different regions of a country, it is also a result of the mixing of civilizations and cultures. This work aims to highlight the diversity and origin of the vernacular names of the most used medicinal plants in the central Middle Atlas.

Methods: The combination of in-depth ethnobotanical investigations with actors of traditional medicine in the central Middle Atlas with floristic prospections in the field with the analysis of different scientific publications made it possible to highlight the most common plants in traditional medicine in the study area as well as the diversity and origin of their vernacular names.

Results: In the study area, 83 plant species are frequently used in traditional herbal medicine. These plants are characterized by a heterogeneity of their vernacular names in Moroccan Darija, also known as the Moroccan dialect /or Amazigh language, indigenous language of North Africa also known as the Berber Some names are specific to the study area, others are shared with other regions. Furthermore, the study revealed that these vernacular names are not arbitrary in the majority of cases, but they find their origins in the particularities of the plant, its appearance, use, biotope or even sometimes they refer to legends.

Conclusions: In Morocco, the vernacular names of medicinal plants present a rich and diverse popular vocabulary which has survived different socio-cultural metamorphoses, thus constituting an integral part of the national intangible heritage.

Keywords: Vernacular names, diversity, medicinal and aromatic plants, ethnobotany, etymology, central Middle Atlas, Morocco.

Background

The vernacular naming of plants, including medicinal ones, is not the result of chance. It rather finds its roots in the use of characters and characteristics of plants following repeated, even daily, observations and uses. This cultural heritage is the result of a mix of civilizations and cultures over several generations from different regions of the country (Najem *et al.* 2021a).

In Morocco, in the central Middle Atlas region, like several regions in the country or elsewhere in the world, the use of plants for their therapeutic virtues is frequent (Najem *et al.* 2019a). In fact, the general ecology of this mountain massif on the one hand, offers a rich and diversified flora and on the other hand, made of activities in contact with nature, such as pastoralism and agriculture, the main sources of income for the local population (Najem *et al.* 2020). Such attachment of the population to nature combined with its generosity in aromatic and medicinal plants has contributed to the anchoring of ancestral medicinal traditions in the region (Najem *et al.* 2020). Herbalism is also very common both in permanent markets and in traditional weekly markets, called "souks". In these markets, the sale of freshly picked or dried plants takes place in the street (Bouiamrine *et al.* 2017).

Plant naming has always been practiced with fairly great precision by the indigenous populations of North Africa, and for a long time, the numerous explorers and botanists who visited the region have made mention of the indigenous names of many plants and some of these names have become common use and are even preferred to the Latin nomenclature of botanists (Trabut 1935).

Popular names are most often given according to the morphology, general appearance, smell, use, and salient features of the plants; thus, depending on the region, many names are improvised from the ears, tails and paws of animals to designate different plants (Trabut 1935). In general, the indigenous people consider only one dominant character, which is how they call zaatter, fragrant thymes, oregano and all Labiaceae with thymol (Trabut 1935).

Furthermore, in the Middle Atlas, in addition to the official Classical Arabic language "al fosha" and the Moroccan dialect "darija", the Amazigh language "tamazight" conceals enormous, unsuspected riches, especially in the field of natural sciences, precisely fauna and flora, and thus has a rich lexicon (Kerdja 2016).

This heritage transmitted mainly orally risks dissipation and erosion over time. Thus, by combining indigenous knowledge collected through ethnobotanical investigations in the region via direct interviews with local actors in traditional medicine, in particular "aachabas" herbalists and "aattara" druggists and the various bibliographic sources relating to the flora and the traditional Moroccan pharmacopoeia, this document is intended to be a contribution to the written transcription of the vernacular names of medicinal plants in certain cities of the central Middle Atlas.

Materials and Methods

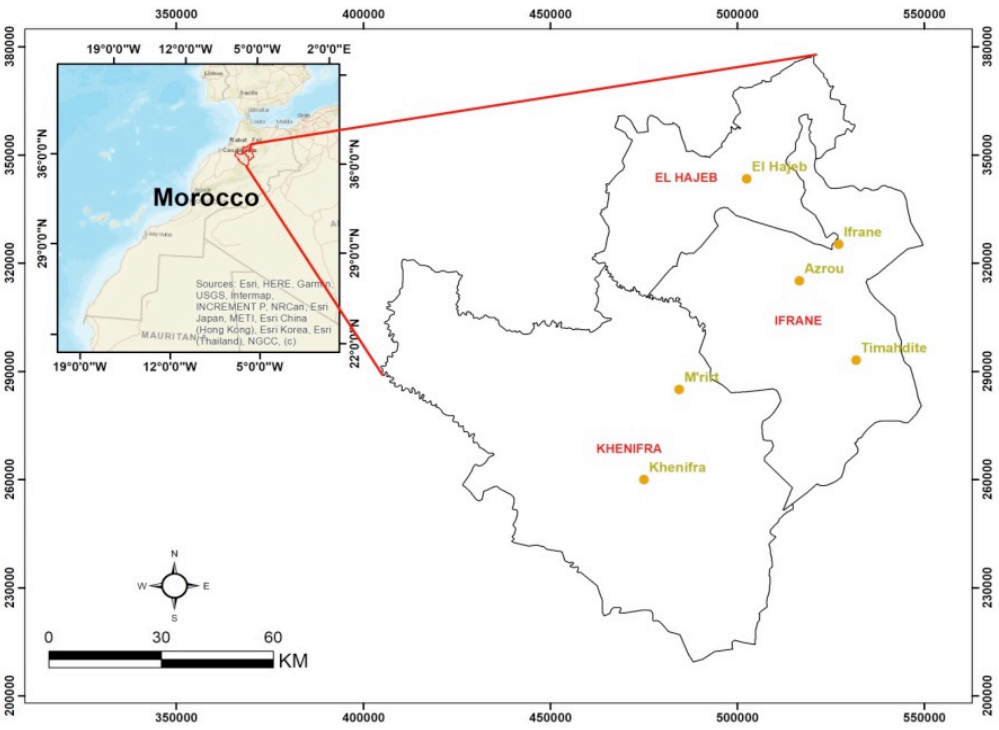
Presentation of the study area

The Middle Atlas region estimated at an area of 27,550 km2 (El Jihad 2016) is organized into two structural compartments, the central Middle Atlas known as tabular or causse corresponding to stepped plateaus dominated by carbonates and the eastern Middle Atlas known as folded, organized into anticlinal wrinkles separated by synclinal depressions (Soufiani & Fedan 2002).

Given the extent of the study area, six main towns (or villages) were chosen in the central Middle Atlas to carry out the ethnobotanical investigations; these are the town of EL Hajeb (province of EL HAJEB), the towns of Azrou and Ifrane and the village of Timahdite (province of IFRANE), the towns of Khenifra and M'rirt (province of KHENIFRA) (Fig. 1).

SWOT analysis of the study area

The strengths, weaknesses, opportunities as well as threats of the study area, the central Middle Atlas are summarized in Table 1.



Administrative division			Tribal correspondances		
City	**Prefecture or Province**	**Region**	**Anthroponym**	**Tribal confederation or super-tribe**	**Tribe**
El Hajeb	EL HAJEB	FES-MEKNES	**AIT OUMALOU** "Amalou = Shadow in Berber": related to the occupation of the "shady slope", wooded and steep of the middle central Atlas foothills Refers to the IMAZIGHENS of the Middle Atlas	AIT IDRASSEN (AIT IDASSEN)	*Ait Ndhir (Arabized Beni M'Tir)*
					Guerouane from the south
Ifrane	IFRANE			AIT IDRASSEN	*Blessed M'tir from the south*
				AIT SERGHOUCHEN	*Ait Seghrouchen of Imouzzer*
Azrou	IFRANE			AIT M'GUILD (BENI M'GUILD)	*Irklaouen*
					Ait Faska, Ait Arfa of Tigrigra
				AIT ABDI	*Ait Ouahi*
					Ait M'hammed Ou Lahcen
					Ait Mouli
					Ait Meroual
					Ait Lias
Timahdite	IFRANE			AIT MGUILD	*Ait Arfa of Guigou*
Khenifra	KHENIFRA	KHENIFRA -BENI MELLAL		IZAYYAN (ZAYANE)	*Ait Harkat*
					Ait Krad
M'Rirt	KHENIFRA			IZAYYAN	*Ait Sgougou*

Figure 1. Map, administrative division and main tribes occupying the study area

Table 1. SWOT analysis of the central Middle Atlas

Strengths of the study area	Opportunities of the study area
◎ Climatic diversity with a Mediterranean climate which enjoys various bioclimates: semi-arid, sub-humid and humid, with cool, cold, even very cold thermal variants (Benbrahim *et al.* 2004). ◎ Lithological and pedological diversity with the dominance of dolomite, limestone and basalt (Benbrahim *et al.* 2004)	◎ Omnipresence of medicinal plants in the daily life of the local population. ◎ Diversification of professions in relation to traditional herbal medicine (Daoudi 2017). ◎ Existence of know-how and customary uses relating to herbal medication (El Rhaffari & Zaid 2002).

◎ diversity whose vegetation includes a large number of endemic, rare or very remarkable species (Benabid 2002). ◎ Floristic richness with a diversity of species including aromatic and medicinal plants (Nassiri *et al.* 2016). ◎ Multicultural human component, from different tribes, typically Berber of Amazigh culture (Najem 2020).	◎ Emergence of a fairly conscientious local associative fabric (Daoudi 2017). ◎ Development of the aromatic and medicinal plants sector and diversification of opportunities to increase income (Daoudi 2017).
Weaknesses of the study area	**Threats to the study area**
◎ Multitude and/or disparity of vernacular names attributed to plants; some common names refer to several species at once (Fennane & Rejdali 2016). ◎ Precarious and needy local populations (H.C.P. 2014a). ◎ Illiteracy rate still quite high (H.C.P. 2014b). ◎ Socio-economic life mainly dependent on agropastoral activities and subsistence agriculture; in addition, yields and income are very affected by climatic hazards (H.C.P. 2014b). ◎ Infrastructure and basic services are very weak, particularly in terms of equipment and medical and paramedical personnel (H.C.P. 2014b). ◎ The non-effective implementation in the area of national strategies relating to biodiversity and aromatic and medicinal plants (Daoudi 2017). ◎ Insufficiency or even absence in certain localities of awareness programs and training workshops relating to the use of medicinal plants (Daoudi 2017).	◎ Risk of loss of therapeutic know-how accumulated over the years due to its often oral transmission (Najem *et al.* 2019b). ◎ Adverse effects, serious poisoning, even fatal due to failure to master ancestral practices during all stages of phyto-medication (Najem *et al.* 2019b). ◎ Ineffectiveness of medicinal treatments or even risks of poisoning following confusion between plants due to similarities in vernaculars attributed to different species (Najem *et al.* 2021b). ◎ Massive degradation of several plant species with high pastoral and/or medicinal values following their heavy exploitation (Daoudi 2017). ◎ Excessive use of certain species exploited for their underground parts (case of African pyrethrum) which has a negative impact on their regeneration (Daoudi 2017).

Search strategy

In order to gather as much information as possible on the popular names of medicinal plants common in traditional pharmacopoeia in the central Middle Atlas, we adopted a research methodology which revolves around three main stages:

1. The first stage involved ethnobotanical surveys of 58 people to identify plants used for therapeutic purposes. These were herbalists, druggists and traditional practitioners. Informants were chosen on the basis of their reputation and experience in the field of herbal medicine and phytotherapy, so that they were likely to be able to provide accurate information on the use of medicinal plants. All the people selected were from the study area. The interviews, which were flexible and open-ended, were generally conducted on an individual basis, rarely in group discussions; the surveys were rarely completed in a single visit; sometimes it was necessary to return to the informant several times and to show patience and availability in order to gather the information. A complementary technique was also used, known as 'field diaries', which consisted of using audio recordings to gather information with the permission of the interviewee.

The interviews were conducted in the Moroccan Arabic dialect 'darija' and given that most of the participants in the survey were Amazigh, the help of interpreters was essential. Informants were also invited to talk freely about their ethnobotanical knowledge, and about all the medicinal plants they know, use and recommend.

2. The second stage corresponds to prospecting and collection trips of the inventoried plants to verify and or confirm the systematics of several species, because they were sold in the form of powder for some and dried roots for others. To do this, recourse to the practical flora of Morocco (Fennane *et al.* 2014, Fennane *et al.* 1999, Fennane *et al.* 2007), the databases "African Plant Database 2016" (https://www.ville-ge.ch/musinfo/bd/cjb/africa/recherche.php) and "WFO Plant List" (https://wfoplantlist.org/) is essential to ensure that the names of the species selected are updated, in accordance with the APG III "Angiosperm Phylogeny Group" classification.

3. The third step involves compiling a list of the vernacular names of the selected plants, which were gathered from the respondents (step 1). These names were then compared with those used in other regions of Morocco and in other North African countries, notably Algeria. The main sources of documentation consulted for this comparison are:
[1]: The three volumes of the practical flora of Morocco (Fennane *et al.* 2014, Fennane *et al.* 2007, Fennane *et al.* 1999),
[2]: Traditional Moroccan pharmacopoeia, ancient Arab medicine and popular knowledge (Bellakhdar 1997),
[3]: Aromatic and medicinal plants of Morocco: Wealth, diversity and threats (Fennane & Rejdali 2016),
[4]: Toxic effects of some medicinal plants used in Moroccan traditional medicine (Bnouham *et al.* 2006),
[5]: Inventory of medicinal plants in the commune of Aguelmouss- Province of Khénifra-Morocco (Daoudi *et al.* 2013),
[6]: Profile on medicinal plants used by the people of North Eastern Morocco: Toxicity concerns (Kharchoufa *et al.* 2018),
[7]: Practice of herbal medicine in the south-east of Morocco (Tafilalet) (El Rhaffari & Zaid 2002),
[8]: Directory of native names of spontaneous plants, cultivated and used in North Africa. Flora of northern Africa - collection of the centenary of Algeria 1830 – 1930 (Trabut 1935),
[9]: French Berber lexicon 2016- Kabylie Djurdjura.htm (Kerdja 2016),
[10]: The Little Glossary of Natural Sciences (Kerdja 2006),
[11]: Herbalists and wild medicinal plants in M'Sila (North Algeria): An ethnopharmacology survey (Boudjelal *et al.* 2013),
[12]: Encyclopedia of useful plants: Flora of Algeria (Mediterranean, North African and Saharan) (Baba Aissa 2011),
[13]: Toxic plants for medicinal use around the Mediterranean (Hammiche *et al.* 2013),
[14]: Tuhfat al-ahbab (Anonyme1934) translated from Arabic by (Renaud & Collins 1934),
[15]: Illustrated dictionary of plant names in Arabic, Latin, Armenian, English, French, German, Italian, Turkish (Armernag 1936).

Results and Discussion

The Middle Atlas region constitutes a geographical unit whose characteristics model a completely original natural setting. Through its geographical contrasts, it offers a varied range of bioclimates and biotopes, allowing the installation of a rich flora sheltering various species of different strains and endowed with marked endemism (Najem *et al.* 2019b). Alongside this natural context, the region has ancestral know-how, preserved over the centuries and concerning both medication by plants, their use for flavoring and preserving foods, and the extraction of the aromatic principles intended for family perfumery or the market.

Following the ethnobotanical and ethnopharmacological investigation, the analysis of the questionnaires revealed that the traditional medicine practitioners surveyed frequently use 83 medicinal plants in the preparation of their remedies.

From a taxonomic point of view, the plants inventoried are divided into 73 genera and 39 families, of which the most represented are: the Lamiaceae (13 species), the Asteraceae (12 species), the Apiaceae (9 plants), the Brassicaceae (4 species), the Solanaceae and the Fabaceae, each containing 3 species. The remaining 33 families are each represented by two or a single plant (Table 2).

Regarding ethnomedicinal use, these plants are recommended by the respondents to treat a variety of diseases, primarily digestive diseases, traumatic problems, respiratory diseases, genitourinary infections, and many others (Table 2).

Furthermore, the table 2 shows the vernacular names of plants used for medicinal purposes in the central Middle Atlas region, as collected from the respondents, as well as the vernacular names attributed to these plants in other regions of Morocco and North Africa, especially Algeria, thanks to the various works consulted and cited in the "materials and methods" section.

First, it appears that most of the species inventoried in the central Middle Atlas share their vernacular names with other Moroccan localities as well as the Maghreb countries. Only seven species (mentioned with an asterisk in Table 2) have a typical name, used only in the Middle Atlas; these are: *Ammi majus* L. (**ich omlal**), *Santolina rosmarinifolia* L. (**ouazwaza**), *Brassica rutabaga* H. Lév (**left fajli**), *Diplotaxis harra* (Forsskal) Boiss (**asheryad**), *Digitalis mauretanica* (Emberger & Maire) Ivaina (**addabi**), *Agrimonia eupatoria* L. (**kabba**), and *Taxus baccata* L. (**igen**).

Also, the names collected in the study area are essentially in Moroccan dialect “Darija” and/or in Tamazight “Berber”, but rarely in classical Arabic language. Given the intermingling that has taken place over the years between the berber-speaking tribes and the Arabic-speaking ones established in the region, Berber names are often translated into Arabic. From then on, there are arabized Berber names and also berberized Arabic names.

Table 2. Names of plants for medicinal use in the central Middle Atlas region and their vernacular names in other regions of Morocco and North Africa

Family APGIII	**Scientific name**	**Local name**	**Other vernaculars (Moroccan, Algerian, old often no longer used)**	**Ethnomedicinal use**	**Photo of the plant** (The photos were taken by the authors)
Acanthaceae	*Acanthus mollis* L.	Sabounia	Sabounia, Sebbana, Çabounia Cebbana, Selikh, Bakhbakh, Zerqou, Chouk lihoudi, Kankar, Tasmas, Masmas, *Taferfram, Tafifra,* Tafrira, Tfefra, Tajerjera, Aqnitha, Naima, Rijl addob	Uro, Der	
Adoxaceae	*Sambucus nigra* L.	Sembouqa	Sembuqa, Bourwabez, Khaman, Waruri, Senbouqa, Bilaçan, Balaçan, Chbuka, Tiuchki, Khaman, Axilwan, Burwabes, Bourrouabes, Lirouri, Akhilouan, Takhilouant, Agueridd, Tourouagt, Ilmicki, Liruri, Arwari, Arouari, Tawrira, Taourira, Urwar, Turwagt, Timermenna, Wijjan, Khaman, Chabouq, Khabur, Balacan aswad, Albylassạn, Khaman kabir, Sabuqah, Damdamun	Gas, Tra, Pne	

Amaranthaceae	*Chenopodium ambrosioides* L.	Mkhinza	Mkhinza, Touijante, M'rinza, Cianama, Bersiana, M'rinza, Cianama, Bersiana, Chay al Mexique, Natnah	Gas, Tra, Pne	
Anacardiaceae	*Pistacia lentiscus* L.	Drou (Trou)	Drou, Trou, Darw, Tidekt, Titekt, Imitek, Fadis, Ifavisen, Afavis, Derou, Diroua, Imidekh, Immidak, Ammadokh, Tidekt, Imidek, Tidekst, Itk, Titkt, Fadhiss, Fethies, Tadist, Tadis, Ifavisen, Afavis, Dharoriya, Ilk-er-rum, Aqawac (Fruit), Gueddain (Fruit), Goudhim (Fruit), Goudhoum (Fruit), Fustuq charqi, Chajar al mastiqa	Den, Neu, Gas, Pne, Der	
Anacardiaceae	*Pistacia atlantica* Desf	Lebtem / Ijj	Lebtem, Ijj, Igg, Tasmalt, Qwawache, Atnu, Zerriat lebtem (Seed), Habba khadra (Seed), Lebtem (Betum, lebtom, Btom), Kwawas, Atnu, Atnou, Tatnût (the fruit, the gall), Smagh lebtem (the gum), Zerriat lebtem, Habba khadra (green seed) Betoum, Bettam, Btom, Butm, Iggt, Idj, Iqq, Djedjig, Tecemlalt, Hel (gum), Alk el anebatt (the resin), Goundafa, Liez ou illeg (the gall), Gueddain (the fruit) Haoudja (fruit), Khatiri (fruit), Gatouf fruit), Samac (the concrete juice), Habbet al khadra (the almond) Btom, (tree), Ilk al anbat (gum of the Nabatheans), Alfstq al'atlasi, Btem atlassi	Gas, Car, Der	

Apiaceae	*Ammi majus* L.*	Ich Omlal*	Triillan, Athrilâl, Thrilan, Thlilan, Tlaylan, Tirilal, Kryu, Tribal, Blala Therilal, Tilailine, Thalilen, Kriou, Sada, Lallilet, Khila chitani, Khaba, Ouakhilan, Akhalla, Tietla, Qçiba, Zfenari el maiz, Nounkha, Jazar Chitani, Rijl al ghorab, Rijl el oqab, Rijl ezarzur, Khilla chaytania	Gas, Der	
Apiaceae	*Ammi visnaga* (L.) Lam.	Bechnikha (Bechnikh) / Bou Okmam	Khela, Bechnikha, Tabeshnikht, Kessiba, Jazar barri, Khalla, Al khalla, Khilla baladi, Khelal, Khell Nunkha, Noukha, Tabellawt Tabellaout, Souak en-Nebi, Kemmoun habachi, Choukail, Khoudab, Khebab, Quinaoua, Dafs, Sennairya, Tamk, Khobz el faraouna, Bestinaj, Qinna (gum), Khella visnaga, Jazar chaytani	Den, Gas, Uro, Car, Pne, Der	
Apiaceae	*Anethum graveolens* L.	Chibt	Chibt, Chebth, Chibitt, Shibith, Chamar, Habbet haloua, Lkarwiya el-amiya (appearance of the fruit), Aslouj, Kamoun el-habchi, Sadhab el barr	Gas	

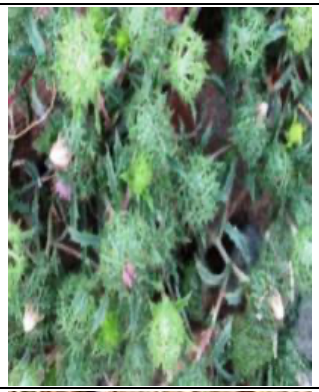
Apiaceae	*Angelica archangelica* L.	Hachichat malaeka	Hachichat malaeka, Hachichat Al-baras	Gas	
Apiaceae	*Carum carvi* L.	Karwiya	Karwiya (Keraouia, Keraoui, Karawiya), Amee, Cammun armeni, Qoronba, Qariqan.	Gas, Tra	
Apiaceae	*Coriandrum sativum* L.	Kesbour	Kesbour (Gouzbir, Kosbara, Kuzbara, Kuzbur), Bakhur ej-jnun, Debcha, Tabel (fruit), Tiqda	Oph, Gas, Tra, Uro	

Apiaceae	*Ferula communis* L	Boubal, Aboubal (Unopened inflorescence) Fassoukh (for gum-resin) / Awli (anli)	Boubal, Aboubal (Unopened inflorescence) Fassoukh (gum-resin), Awli, anli, Kelkha (dry stem), El-kelkh, Kelkh, Kelkha, L-klekh, Lkelikha, Uffal, Tuffalt, Taggult, Takoult, Al mubatil (gum-resin), Tebtil, Anbi, Anslal, Uffal, Ufel, Touffelt, Kelekha, L-besbas l-harami, Kechbour, Ouchk ou Ilk kelakh (gum-resin), Zekelak (dry stem), Taddrat (ubbel), Fasukh, Wuchchaq, Uchchaj, (ammonia gum), Qina, Ferrula Chaia	Oph, Tra, Der	
Apiaceae	*Foeniculum vulgare* P. Mill	Besbas, lbesbas / Amsa	Besbas, lbesbas, Lebisbas besbaça, Amsa, Wamsa, Ouamsa, Tamsawt, Tamessaout, Tamsawt, Chamar (fruit), Nafaa (fruit), Razianedj, Tamcawurt, Tatayt, Lemuu, Lemsous, Dibcha, Chbets, Chamra chaia, Shamar, Shumarah	Den, Oph, Gas, Tra, Uro, Pne	
Apiaceae	*Pimpinella anisum* L.	Habat hlawa	Habat hlawa, Habb Talaout, Kemoun abiod, Raziandj roumi, Habba aloua, Iassoun, Anisun, Raziyânaj rûmi, Kemmun halu, Annissoun, Yanssoun	Den, Gas, Tra, Car, Pne	

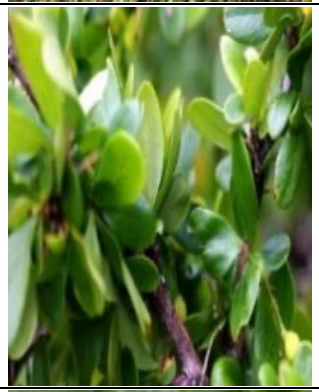
Apocinaceae	*Nerium oleander* L.	Defla/ Alili	Ddefla (Defla), Alili, Anini, Ariri, Aligi, Arili, Alidji, Elel, Eleil, Alal, Anio, Ilili, Elal, Ilel, Talilit, Tililit, Anidj, Diflâ, Habn, Khûrzaharj, Semm al-himâr, Ward el hhimar	Der, Pne	
Aristolochiaceae	*Aristolochia paucinervis* Pomel	Berreztem	Berreztem, Buruchtam, Bu- ruchtum, Buruchtum, Burustam, Bourochtoum, Bou rachtam, Ben rostom, Ajrarkhi, Qa'qa riba, Qitta'lehmir l- berri, Aarifi, Arifis, Îrifis, Berrezvam, Askerchi, Tamemt n- tizzwa, Ajoaoxi, Asfafigeo, Guessaat lbaya, Qittsa el haya, Boubrala, Zerouan et thouil, Afgouce el rhioul, Aristuluchya, Chajrat rustam, Zarawand, Bubralla, Qittsa el haya, Masmeqar, Rostom, Zarawned touil	Der, Uro, Gas	
Asparagaceae	*Urginea maritima* L.	Aansal	Aansal, Ikfil, Ichkkil, Bsal ed-dib, Azalim- u-wuchchen, Bçal el-far, Bsel el-khanzir, Bessila, Bsel l-fer 'awn, Fer'una, Lbruwaj idan, Ibuel ivan, Ansal, Anacil, Ouncel, Achkil, Isfil, Ikfilen, Aéalim u wuccen, Lobsol bouchen, Bçal el-far, Ibsel idam, Ferouan, Faraoun, Aferean, Silla, Anual, Efeleli, Aired (leaf), Arioualdi (stem), Unssal, Bassal el-berr, chqil, Bassal el far, Samm el far, kharif	Tra	

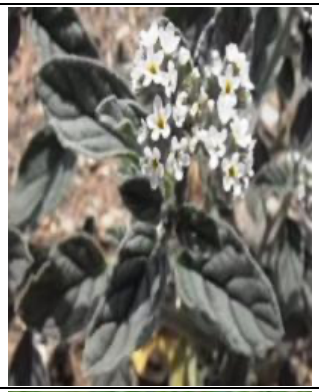
Asphodelaceae	*Asphodelus microcarpus* Salzm. & Viv.	Berrouag/ Inghr	*L-Berwag,* Berouaga Abeowaq, Inghri (Ighri, Tigri, Imeghri, Ingri), *Ansel,* Bliluz, Belouaz, Abliluz (floral stem), Agellus (floral stem), Haydeli, *Khuntha, Taziwt,* Llouz (tubers), Aouli, Inyri, Tiglic, Tiglilic, Iyôi, Tiglich, Taziout, Hirri, *Tighlilecht, Khuntha, Ashras, Sarishe*	Der, Tra, Gas	
Asteraseae	*Achillea millefolium* L.	AlKhala	AlKhala (Khela, Ekhelia), Shwihiya, Qort, Qaysum, Qaysun, Hhazanbal, Akhalia dat alf waraqa, Al kayssoum alalfi alawrak, Umm alf warka	Tra, Uro	
Asteraseae	*Anacyclus pyrethrum* (L.) Link	Tigenthast (Igentas)	Tigentast (Igentas, Gentus, Tagendest, Tigenthast Agenias, Agounthas, Guenthous, Tagendest, Tâghendest, Tâgantist, Tikentest), Hallala, Arq-Echlouh, Oud al aattass, Ignens, Aoud el Athas, Kûkû, Agargarha, Aqarqarha, Aqir qarha, Assl el tarkhun al jabali	Den, Gas, Tra, Uro, Car, Pne, Der, Aut	

Asteraseae	*Anthemis nobilis* L.	Babounj roumi	Babunaj rumi, Babounj, Babnuj, Babunaj, Ghegwan, Uqhuwan, Chajrat Mariam, Rijl djaja, Kafuriya, Kerkach, Maqarja, Mansanilya, Khamamalis, Tuffah al-ard, Bhar nabil, Mushraf	Gas, Tra, Uro	
Asteraseae	*Artemisia arborescens* L.	Chiba	Chiba, Shibat al ajuz, Chajarat Meryem, Chihh er-roumi, Uiba, Tacetta meriem, Jaoep-meriem, Chih qoracani, Degna ech-cheik, Tamemmayt, Daqn cheikh, Afsantine	Gas, Tra, Uro	
Asteraseae	*Artemisia herba-alba* Asso.	Chih / Ifsi, (Fessi)	Shih (Chihh, Chiha), Izri, Chih dwida (chih for worms), Chih khorassani, Zizri, Zezzare (Zeri - Izeri - Azzere - Zezzeri) Alala, Udessir, Odessir, Abelbel, Toum galle, Chih abiad	Den, Gas, Der	

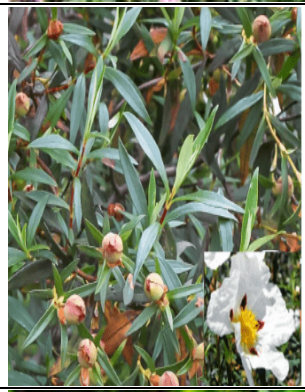
Asteraseae	*Atractylis cancellata* L.	Asnnan wado	Asnnan wado, Najma (Nedjema) Guern el djedi, Tabonnet kar, Oum dars, Ddris	Der	
Asteraseae	*Atractylis gummifera* L.	Addad (Dad)	Addad (Laddad, Leddad, Heddad), Aghfyoun, Akhfioun, Akhfyun, Ishkhis, Chouk el-eulk', Chûk al alq, Taboune khart, Tabounekkart, Tifrioua, Tifroua, Tilisten, *Ta'kesma, Ta'kemsa,* Djerniz, Asad al-ard, Khâmâlûn lûqus, Khamalun mals, Bachkary	Den, Uro, Der	
Asteraseae	*Chrysanthemum parthenium* Bern.	Uqhuwan	Uqhuwan (Al-uqhuwan, L-gahwan), Rkiza, Mouniat, Wazduz n wa'kli, Meniat, Munyat, Baboundj, Karkach, Babunej el-hmir, Chajarat Maryam	Gas, Aut	

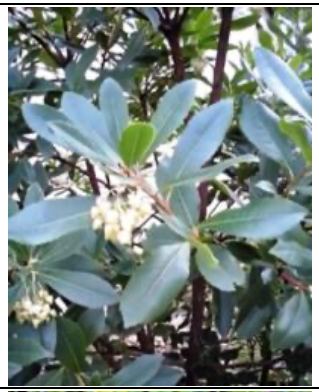
Asteraseae	*Echinops spinosus* L.	Chouk lehmar/ Thassakra (Taskra)	Tasekra (Taskrat, Asekra, Teskera, Tasekere), Chouk lehmar, Chouk ajjmal, Timat, L-kherchuf, Lkerchuf, Tefaryast, Ameskelit, Sarsor, Fouga eldjemel, Kachir, Ikchir, Chicaou, Anabta chabiya	Den, Gas, Der	
Asteraseae	*Launaea arborescens* (Batt.) Maire	Intrim	Intrim, Ifreskel, Iferskil, Iferskel Mmu-lbeyna, (Mmu l-lbina), Moulbina, Bu chlaba, Bou chlaba, Alhowa alkazama	Pne, Der	
Asteraseae	*Santolina rosmarinifolia* L.*	Ouazwaza*	*Ayrar, Tayrart,* Al-Kayssoum, Qeiçoun, Djissoun, Timerit, Tiboudouchin, Ouadmi labiod, Djaada, Jaada, Arfedj, Santolina	Gas, Uro	

Asteraseae	*Senecio vulgaris* L.	Achbat salma (lachba salma)	Lachba salma (Acheba salema), Shiba salma, Achba chana, Achbat en-najjara, Taanana, Hiyara Tidmamai, Zahrat acheikh, Shaykh er-rabi Murayrah, Babunag et-tuyur	Gas, Uro	
Berberidaceae	*Berberis hispanica* Boiss. & Reuter	Ârghîs	Arghis (Ighris, Argis, Arrhis), Darrhis, Udd rihh, Busman (Bousmam, Bou-Seman, Barbaris, Berbaris Amirbaris, Ambarbaris, Anbarbâris, Azaghnat, Izirki, Izzirki, Atezar, Aizara, Tazgouart, Ousmiche, Ksila, Zerchoq, Uqdah, Azaghnat, Zirchek, Athrar, Abousmam	Oph, Gas, Uro, Car	
Boraginaceae	*Borago officinalis* L.	Harriecha (Horraycha,Al-hurraycha) /Thamen	Harriecha (Harcha, Horraycha, Al-hurraycha), Tament, Tamment-tzizwa, Bou-assal, Bu-Eussal, Bou çassal, Ils-uuzger, Isk uzgir, Iles uwaɣwi, Iles ouaroui, Iles-waruy, Urwi, Ils-uaghwi, Lisan attur, Lisan l-bger, Iles ufunas, Ils-n-tfunast, Uzgar, Bou-hamdoune, Benni-hamduna, Chikh bgoul, Cix-lebqul, Cheikh al buqul, Bûkhriche, Abukhriche, Bou kerich, Bou chenaf, Fudelqem, Foudelqqem, Tizizoua, Tilkit-uccen**,** Lissan el'-ard**,** Hamham**,** Kahila**,** Baqlat Tûnes, Abou laarq, Lissan attaw Hamham makhzani	Tra, Uro, Pne	

Boraginaceae	*Heliotropium europaeum* L.	Khuniza	Khuniza (Khuniza ratba), Hebbaliya, Sikran, Sekrane, Akerir. kerir, Samer-iouma, Daharet ech- chems, Keblitou, Aqerbana, Qasbet el hamam, Sâmer yûmâ, Sâmiyûmâ, Hachichat al'aqrab	Den, Oph, Gas, Uro, Car, Der	
Brassicaceae	*Brassica napus* L. subsp. *rapifera* Metzg. *	Left fajli*	Lifiti, Lift, Lift Berri, Left, Left wafran, Afran, Chaljam, Bussad, Hîdmân, Ghunghili, Rutabaga, Krunb lefti	Gas, Uro, Aut	
Brassicaceae	*Brassica nigra* (L.) W.D.J.koch	Khardal aswad / Bu-hamu (Bou hammou)	Khardal aswad, Khardal, Bu-hamu, Ashnab, Achnaf, Kerkaz, Zeriît shan, Hebb L-mchebek (graines), Kerkas	Gas, Tra, Uro	

Brassicaceae	*Diplotaxis* harra (Forsskal) Boiss. *	Asheryad***** (Cheryat, Asheryat, Asheryad)	L-Kerkaz, L-harra, Harra, Waifs, Bu-hammu, Ifes, Achnaf, Chnef, Mazloum, Moucham, Bedjir	Der	
Brassicaceae	*Lepidium sativum* L.	Habb- er-rchad, Lharf (Heurf, hourf)	Habb- er-rchad, Habb rechad, Rechad, Lharf (Heurf, hourf, Hurf), Belachequine, Tseffa, Qerfa, Half, Muqliyata, At-tuffa'Rshad, Rachad, Hbab err-achad	Uro, Pne, Der	
Buxaceae	*Buxus balearica* Lam	Baqs (Bakss)	Baqs **(**Bekkis Abenkis. Beuqs), Azazou, Zarou, Azazer, Techet, Admem, Baqs Al balyar, Aathaq, shamshad	Gas, Tra, Pne	

Caryophyllaceae	*Vaccaria hispanica (Miller) Rauschert*	Hamrat er-ras/ Tighighest	Hamerat er-ras, Tighighest (Tighighest, Tighighecht, Tir'ir'echt Taghighecht), Sabun el-fqar, Tuf essabun Tif es çabounya, Sabunia, Chabunira, Kundus, Qundus, Astrutyun, Ajma, Qûlliya, Abu ghassala, Foul el arab	Gas, Der	
Cistaceae	*Cistus ladaniferus* L.	Touzzalt	Touzzalt, Touzzal, Targla, Ftah, Ftakh, Bu-Zegzaw, Ladan, Ladan'aanbari (for aromatic resin), Ouerd, Chedjeret el aden, Oum aliya, Ain if, Karidda anbariya, Shaqwass, Qistus	Gas	
Cyperaceae	*Cyperus longus* L.	Arouk esaad / Tagha	Arouk essaad, As-sa'd, As-sa'd, saad, saida, Su'd, Tirhlet, Tara, Sokait, Berbik, Assu'da el-madfara Assaada, Su'd, Su'adi	Neu, Der	

Ericaceae	*Arbutus unedo* L.	Bakhnou/ Sasnou (Assasno)	Bakhanu (Bakhannou, Bahennou) Sasnu, El-lenj, Metrun, Mutrun, Jina, Unnich (le fruit), Asasnu, Asaasano Sasnou, Isisnu, Ticisnou, Isisnou, Sisnou Ouassasnou (fruit), El-lenj, Lindj, Lendj (fruit), Sissmou, Mothrenia, Mothrounia, Ta`kwilsa, Ichichnou, Qatelabihia, Açir el dobb, Henna hameur, Bou sbiba, Bou djbiba, Bou hennou (fruit), Sasnu, Al-lanj, Qatil abihi, Jina, Matruniya, Bojj, Qatlab, Qutlub, Al ginae al ahmar, Qâtil abih	Tra, Gas, Der	
Euphorbiaceae	*Euphorbia helioscopia* L.	Halib Assou / Mmughî	Mmughi, Oum lbina, Tafura, Tanougha, Haliba, El-Hlibiya, Reddatlebger, Moulbina, Halibeddiba, Tafouri, Tanahout, Kerbabouche, Aïfki en tarhioulte, Ahon-n-igoura, Ahon-n- izgaren, Oumar'a Raqîb ech-chms, Yattu'at, Haraqiyas, Umm el bina, Oum al lubayna, Raqîb echchms, Sa'dah, Rummadah	Gas, Uro	
Euphorbiaceae	*Euphorbia resinifera* O. Berg.	Louban maghribi / zaggum	Luban al maghribi, Lubanah maghribiya, Liban moghrabi (resin), Zgoum (zaggum, zaqqum, Zakkum, Zekkoum), Tikiut, Tikiout, Banan el-Ard, Chajart el ferbyun, Ferbyûn Fourbioun (resin), Ddeghmus, Takout, Tikiut, Tikiout, Takert, Lagmez, Tanahot, Tana-r'ant, Dermouss, Takawt, Farbyûn, Furbiyûn, Shawlah beyda	Oph, Tra, Der	

Fabaceae	*Astragalus lusitanicus Lam.*	Fouila (Fwila)	Foulia (Fwila), Foul elhalouf, Foul el khenzir, Ibaoun guilef, Adrilal, Ane`krafcilmu, Leuoez, Kherroub el maiz, Kherroub el djenn, Katad al bortoghal	Oph, Tra, Der	
Fabaceae	*Astragalus gummifer* Labill.	Ktira	Ktira, imerrezraz, Qatad (plant), katira (gum), Kathira baydae	Tra, Pne, Der	
Fabaceae	*Trigonella foenum-graecum* L.	Helba/ Tifidas	L-helba (Holba, Helba Holba, Hulba), Tifidas, Tifivas, Ibdeouene, Hhulbah, Hhelbah	Tra	

Lamiaceae	*Ajuga iva* (L.) Schreb.	Chendgoura / Tûf tolba	Chendgoura (Chendgura), Touf telba, Miseyka, Meskeh, Lmesk ize'kwan, Meusk el qobour, Misk ej-jin, Goâdah	Car, Uro, Gas	
Lamiaceae	*Calamintha officinalis* Moench.	Menta	Menta (Mentha, Lementa), Nabta, Nebeta, Nabtta, Naamta, Timellidine, Qottiya, Limrann, Keliou, Assenous, Qalament, Nabata, Fûdanj, Al qalament, Nabat assinous, Marmarane, Naanaa barri, Qotria, Klintoun, Habqat attimssah	Gas, Uro	
Lamiaceae	*Hyssopus officinalis* L.	Azoufa yabsa	Zoufa, Ssouf el-yabes, Tefrourd	Der, Pne, Uro, Gas, Den	

Lamiaceae	*Lavandula pedunculata* (Miller) Cav. Subsp. *atlantica* (Br.-Bl.) Romo	Halhal/Izri	Halhal, Helhal el djebel, Amezzir, Timzira, Khezam, Tey el djbel, Eamestir, Iyazir, Tizirt (Tizrit, Imzir, Tizrit, Timzi, Timzir), Azir, Iazir, Igigie, Oualokh, Hamsdir, Meharga, Estakhoudess, Astûkhudus, Taymerza, Tifiz, Meharga, Hamsdir, Muwaqef, L-arwah, Alhalhal, Taymerza, Tifiz Khzama, Ddurm, Shah isbarm rûmi	Der, Pne, Uro, Gas	
Lamiaceae	*Marrubium vulgare* L.	Mariwta / Morro	Mariwta (Merrou Merryut, Merriwa, Merriwut, Merriout, Merrouit, Merriut Timeriout), Imourine, Ifzi, Ifezzi, Iffegh, Merriouet, Mernouit, *Mernuyet, Tameryut, Ifeeii,* Timersat, Tabeknint, Meriana, Meroubia, Roubia, Oum er roubia, Aferkizoud, Merriouat el kelb, Achebet el kelb, Frasioun, Farasiyun, Chennar,Merryut al jarayhiya, Maru, Marmahur Farasyun abiad, Sharir, Hachichat al kalb	Der, Pne, Gas, Den	
Lamiaceae	*Mentha pulegium* L.	Fliyou	Fliyou (Fliyyo, Fliyu, Feliou), Fliyou dyal lma, Afilgou Felgou, Moursal, Temarsa, *Fleggu, Tamaou,* Flayyu, Fudenj, Fudanj, Ghlikhun, Glechon, Bolaya, Ghubayra. Naanaa barri, Fulayah, Fulayhh	Pne, Gas	

Lamiaceae	*Ocimum basilicum* L.	Lahbak	Lahbak (*Hbaq,* Habeq)*, Leebeq,* Hbak el-aynin, Habeq el aialet, Hamahim Rîhan soleyman, Rihan, Hâuk, Badruj, Hbak qoronfli, Habaq kermani, Hbak zaatari, Hamahim, Châhsifaram, Faranjam, Saâtar hindî	Gas, Oph	
Lamiaceae	*Origanum majorana* L.	Merdadouch	Merdadouch *(*Murdeguch, Mardadduche, Merdeduche, Merdaquch*,* Merdqouch Merdaquch Kebir), Bardaquch, *Aôéema, Mellul,* M'loul, Arzema Marzanjûch, Anqar, Semsak, Rayhhan daoud	Gas	
Lamiaceae	*Origanum vulgare* L.	Zaatar	Zaatar (sahatar, Az-za'tar, Zateur), Setter, Izoukenni, Iz'ioukounni, Azekount, Azoui, Az'ouy, Ouaz'ouy, zouchenchen, Fudang jabali, Merdaquouch chaie, Marw	Pne, Tra, Den	

Lamiaceae	*Rosmarinus officinalis* L.	Yazir (Azir)	Yazir (Azir, Ayazir, Iazir, Aziir), Klil, Iklil al-jabal, Aklel, Aklil, Touzzalt, Tuzalt, Tamezzerya, Touzala, Tuzala, Barkkela, Hachicht lerneb, Amezzir, Uzbir, Ouzbir, Ozbi, *Aselban,* Hatssa louban, Hassalban, Hhssâ lubân	Pne, Car, Tra, Gas, Den	
Lamiaceae	*Salvia officinalis* L.	Salmiya (Salma Es-salima)	Salmiya (Salma, Salama Salima, Es-salima As-salima), Al mufassiha, Salma al mufassiha, Mofaça Selmia al mufassiha, *Butanzarin, Tazzurt,* Tazzourt, Tamejjut, *Bu-anzaren*, Agourim imeksaouen, Souaq ennebi, Kheyet, Djourhat, Na'ama, Houbiget es sedr, Buchucha, Kharnah, Achfaqûs, Achfaqus, Maryamîyah, Asfâqs, Chafiya attebiya, Al kassîn attébî	Car, Tra, Gas	
Lamiaceae	*Salvia verbenaca* L.	Khiyata	Khiyata (Kheyata), Keff ejjmel, Zergtout, Zergttoun, *Imei n- waryel,* Tamerzouga, Imzri-n-ouriel, Koul beliya, Umm el buna, Om Lemdhamedh, Ummhûbina, Chafia lwiziya	Der, Uro, Tra, Gas	

Lamiaceae	*Teucrium polium* L.	Jaâda	Jaada (J'idiya, jaydiya, Djaad, Djaida) Chendgura, Ayrar, Tayrart, Ayn al-hejla, Djada, Chandgoura, Takmezzut, Teqmezoutin, Akmezzu, Timzourin, Timzûrin, Timzeyren, Timichich, Haida, Goutiba, Khayata, Go'adah, Hachichat errih, Misk al ginn	Gas, Pne, Der	
Lauraceae	*Laurus nobilis* L.	Chajrate Sidna-moussa (Wrak moussa, Aassa Moussa)	Chajrat Sidna-moussa (Wrak Moussa, Aassa Moussa), Er-rand, Rand, Rend, Round, Eooend, El ghar, Chjrate el-ghar, pour la baie (Habbet el ghar, Habb r'ar), Taselt, Tasset, Tarselt.	Tra, Gas, Den	
Molluginaceae	*Corrigiola telephiiafoli* Pour.	Serghina / Thawsarguine	Sarghina (Tasserghint, Serghina, Tawsargine, Serrh'ine, Tacerrint, Sarghint, Awsarghint, Tawsarghint), Serient, Ouberka, Chellalah (powder), Bokhour mourchka. Bakhur al barbar, Bokhour el berber, Bakhour al barbar	Gas, Pne, Der	

Nitrariaceae	*Peganum harmala* L.	L-harmel (Harmel)	L-harmel, Harmel, Sahari, Alora, Bender, Tiffin,Wa n'tefriwen, Lêeômel, Harmel	Der, Car, Uro, Tra, Oph, Den	
Pinaceae	*Cedrus atlantica* (Manetti.) Carr.	Arz (larz)/ Iddil	Larz (Larz, Arz, Lerz Larisq, Arz Alatlasse), Iddil, Idil, Adiil, Idgel, Adgal, Berdâ (pour le bois), Qitran-er-raquiq (tar) Medade, Meddad, Lblez, Ablez, Iblez, Biqnun, Begouna, In-guel, Abawal, Abegnun, Adgic, Adgal, Ajdel, Anjel, Ingel, Tingelt, Ubhal, Obhal, Abaoual, Iguengen, Ijdel, Edgeich, Arzaq, Charbin, Sharbine	Tra	
Plantaginaceae	*Digitalis mauretanica* (Emberger & Maire) Ivaina*	Addabi*	Zhar el-kchatbin (Zahr al kashatibin, Zeheur es kechatbine), Kamiya, Asbu'al aadrae	Car	

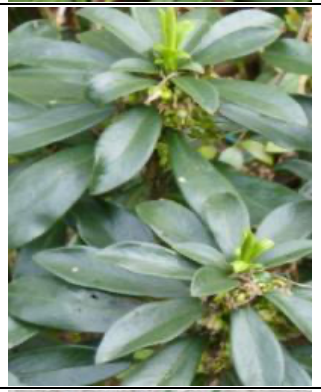
Poaceae	*Arundo donax* L.	Kseb/ Aghanime	Kseb (Kassab, L-Gesba, L-Gseb, Lqseb, Qsob), Aghanim, Taganimt, Tigunam, Ayanim, Irhounam, Rhanim, Arhalim, Arundo, Ayalim, Anim, Tasengelt, Tiuli, Tagemmut, Alemes, Asendjel, Lera, Bouce Ferisi, Asendjel, Ghab rumi, Ghab beldi	Der, Gas	
Poaceae	*Agropyrum repens* (L.) PB.	Njem	Nnjem (An-najam, Najm, Nedjem, En-najam), En-njil, Afar, Agesmir, Nadjir, Nedjil Nnjil, Nigil, Taggamait, Til, Thil, Aseffun, Eelluglu, Affar, Kezmir, Guezmir, Khafour, Seboulet elfar, Aghrostis, Tayyil, Hachichate alkamh azahifa, Chair arrimal azahif	Gas	
Poeoniaceae	*Paeonia coriacea* Boiss	Habersis	Habersis, Fawaniya, Faounia, Fawiniya, Fawania morjania, Ward al-hamir, Ward ez zwani, Ward az-zawân, Ruman ech-chadi, Oud essalib, Agawan, Ardjaouan, Arjawan, Arrhaouan, Tarommant guiddaoun, Teffa-guiddaoun, Ud as-salib, Oud Assalib, Kahiyana	Gas, Aut	

Portulacaceae	*Portulaca oleracea* L.	Rejla	Rejla (Rjila, Rijla, Redjila**,** Rejta Ar-rijla, Rijlah), Baqla el-hamqa, Baqla- elmubarilca, Begelt el hamga, Baqla el moubareka, Farfah, Âgertîm, Tazelluzt, Brabra, *Amermur,* Dhou el kefin, Arrhilem, Bouguel, Benderakech, Tafrita, Aben drag, Ournouba, Berdougala, Bou el kazit, Blabicha, Baqla hamqa', baqla- elmubarilca, Baqla, Alayina, Farfah, Ferfej, Ferfegîn Kharqa, Bordoqala, Hhurfah	Uro, Gas, Den	
Ranunculaceae	*Delphinium staphisargria* L.	Habb r-ras (Habbet râs)	Habb r-ras (Habb er-ras), Zbib ejjbel, Zbilkin, Achacha, Zabib ej-jbel, Miyufizaj, Mayufazaj, Zabib al jabal, Zabib barri, Aaek	Der, Gas, Den	
Rhamnaceae	*Zizyphus lotus* (L.) Lam.	Nbeg, Sedra/ Azaggar, azuggwar	Ssder (Sedra, Sedra, Sidr, Assidr al barri), Nnbeg (For the fruits: jujubes), Nbeg, Nabg, Nebiq, Nabeq, Nabiq, Azuggwar, Tazuggwart, Bazeggûr, Azar, Amzmem, Azar, Azarem, Amezmem, Azeggur, Azeggwar, Djedjer, Unnab, Tobakat, Tabakat, Tabekat, Abaqa, Hozouggart, Tazoura, Azareur, Tazouggert, Asennan, Bazezour, Ouari, Ibakaten, Tabakat, Ad dall	Pne, Uro, Tra, Gas	

Rosaceae	*Agrimonia eupatoria* L.*	Kabba*	Gaiit, Rh'afits, Ghafath, Abolask, Terfaq, Garmoulya, Rhafit chaie	Gas	
Rosaceae	*Crataegus monogyna* Jacquin	Admam	Admam (Admama, Admammay, Demamai, Idmine, Idmim, Tidmimt), Buzorulu, Bousorolo, Mesnaghten, Attemen, Atelman, Aiewen, Izmin, Tazougalt denani, Bou mekherri, Baba adjina, Chawka hadda, Jabriyul, Zarour el berri, Za'rur, Zaarour ohadi al medakka, Zu'rur el awdiya	Car, Pne, Gas, Neu	
Rubiaceae	*Rubia peregrina* L.	Al fououa / Tarubya	Al fououa (Fuwwa, Fououa, Fouous, Foua, Al fouwa, Al fuwwah), Tarubia, Taroubia, Tharoubia, Taoubya, Taoubi, Taroubent, Aroubian, Tarubya, Fana, Imentev, Ourouq ahmeur, Uruq humr, Alizari, Lhamri, Tigmit	Gas	

Rutaceae	*Ruta montana* (L.) L.	L-Figel/ Awermi	L-Figel (Fijel, *Fijla*, Fijen, Fidjel, Feidj, El fîjel, Fidjela el djebeli, Fijen jabali), Awermi, Iwurmi, Awerma, Iwermi, Aourmi, Sudab, Saddab, Sedab el djebeli, Sadhab el djebeli, Sadab, Sadhâb al barr, *Issel*, Hachichat Al-jenn (for the plant), Tafsiya (for seeds), Adh dhaffrae	Der, Pne, Uro, Tra, Gas, Neu, Den, Aut	
Scrophulariaceae	*Verbascum sinuatum* L.	Maslah ndar/ Aberdudn-izem, Thit yezm	Muslih al andar (Meslah lndhar, Meslah L-Endar, Tsalah el ent tar, Mouçaleh el andar, Muslih al andar), Aberdud n-izem, Aberdud, Bussir, Bou cira, Busira, Tisseraou, Israw, Touffelt, Ouden el hamar, Adan eddob, Flumus, Folomus, Juznaq, Aqanqan, Berbachka, Mahizahra, Sikran el hut, Saykarane el hhut, Miknassat al andar	Der, Pne, Tra, Oph	
Solanaceae	*Atropa belladonna* L.	Zbib lidur/Adi wuchen	Zbib lidur (Zbib elyadur), Adilwouchen, Adil ououchchen, Balaydur, Belaidour, Al laydur, Zbib elkhidus, Buqunini, Buqnina, Buquinin, Bou qini, Tiddilla, Mledor, Bou rendjouf, Sit alhussn	Gas, Oph	

Solanaceae	*Hyoscyamus* albus L.	Sikran / Gengit	Sikran (Shikran, As-saykuran, Sikran), Gengit, Jenjat, Benj, Banj, Bunj, Bu narjuf, Buranjûf, Betina, Afelehleh, Afelezlez, Barbar, Bou rendjouf, Bou nerdjoul, Bou rendjouf, Houba'il, Hebbala, Houbbail, Sikran, Tesker, Shawkaran	Der, Gas, Oph, Den	
Solanaceae	*Solanum sodomaeum* L.	Hadja (Hdaj, Hedja)	Hedja (Lhdej, Hdej, Hdija), Lim en nçara, lîmoun n-sara, Mathesha del-hmir, Taffah el-ghoul, Taharatnit, Zece, Bou qononnou, Mghd sodom	Der, Uro	
Taxaceae	*Taxus baccata* L.*	Igen* (Igni)	Imerwil, Adgham, Eddahek, Dakhch, Takhche, Turcet, Tifueelt, Tiffueal, Siguel, Sigeh, Tamigult, Tasugelt, Takhch, Adgham, Smilaqs, Taqsus, Chawhath, Zarnab, Taxus Aadi, Rijl al jarad, Chajart al fushagh, Smilaqs	Uro, Tra	

Thymeleaceae	*Daphne gnidium* L.	Lezzaz (Alezzaz)	Lezzaz (Alezzaz*, Azzaz* Elzaz), Methnane, *Metnane*, *Mathnane*, Inif*, Init, Sebbarh Djouzet er raiane, Aleeae, Achas*, *Habba Qnidiya, Kirmdanah,* Daphne	Der, Den	
Thymeleaceae	*Daphne laureola* L.	Walidrar/ Alili w-adrar	Walidrar, Alili w-adrar, Talidrar, Al adrar, Lili w-adrar, Addufayla, Mazierounna, Mazariyun, Aselen giddawen, Ajiji	Gas	
Urticaceae	*Urtica* urens L.	Hariga, *(L-hurrga, L-hurrayqa)/* Thissarkmaz	Hariga *(L-hurrga, L-hurrayqa,* Aherraik, Hariq, Horaig Horeig, Harruc, Aherrayeqs, Aherraik, Hurriq Al-hurrayg), Leariga, Leuriga, Tikzinin, Tizmekt, Tismekt, Imezri, Tiezrit, Tazelekta, Tizmi, Tazalata, Tazenketta, Tayizint, Buqsas, Bou qsas, Tikzinin u-uccen, Tanikt, Timeqsin, Imitek, Tibaqsin, Tibeqsin, Timeeoit, Bent En-Nar, Adjdid-n-ilorman, leeooiqet, Tazegvuft, Bou zegdouf, buzegvuf, Azekdou, Harrous, Iberriqet, Anjurâ, Qurayas, Quorras, Hhorrayk, Chaar al aajuz	Der, Pne, Uro, Tra, Gas, Den	

***:** Species with a typical vernacular name, used only in the central Middle Atlas

Diseases treated: Der: Dermatological, Pne: Pulmonary, Uro: Urogenital, Tra: Traumatological, Gas: Gastric, Den: Oral-Dental, Car: Cardiac, Oph: Ophthalmological, Neu: Neurological.

On the other hand, the transcription adopted for all the vernaculars collected from the respondents is on their phonetic basis; this already constitutes a source of variability when reporting these names in writing. For its part, the written transcription of Arabic names is not the easiest because it is difficult to distinguish between several letters, such as ت from ط, ح from ه, nor ذ ,ظ ,ض, translated respectively into T, H and D; the غ which is often transcribed gh is generally pronounced R.

Finally, the diversity inherent in the number of appellations is enhanced by the existence of numerous dialect variants; for example, for *Ruta montana* (L.) L., the Berber vernacular is pronounced differently: **awermi**, **iwurmi**, **awerma**, **iwermi**, **aourmi**, for its part, *Pistacia lentiscus* L. is pronounced: **drou**, **darw**, **trou**.

The diversity of vernaculars names attributed to plants both across Morocco and the Maghreb is a result of the variability of sociocultural areas, or even that of ethnic groups within the same sociocultural area (Gnawe *et al.* 2016), and the diversity of languages and dialects (Adam 1970).

This multitude of names is transmitted from generation to generation and even transgresses the limits of zones and regions. Likewise, an additional source of vernacular diversity lies in the historical origin of certain denominations; thus, certain names are of Persian origin, such as the species *Daphne laureola* L. and *Urtica urens* L. called Mazariyun and Anjura respectively. Other names are of Greek origin such as Afsantine for *Artemisia arborescens* L. and Astukhudus for *Lavandula pedunculata* (Mill.) Cav.. We also note the Latin origin as for *Peganum harmala* L. and *Sambucus nigra* L., respectively **l-harmel** and **sembouqua**, without forgetting the classic Arabic strain like **akhowan** for *Chrysanthemum parthenium* Bern., **korass** for *Urtica urens* L. The Berber strain is also common, for example, **azir** and **taymerza** and/or **tifiz** designating *Rosmarinus officinalis* L. and *Lavandula pedunculata* (Mill.) Cav. respectively.

In addition, and in order to understand and justify these names, an investigation was carried out in parallel on the origin of the popular names of plants. It turns out that far from being a simple dry nomenclature, the vernacular names of plants used represent several semantic fields (Lefèvre 2009) and are granted according to different modalities (André 1956), especiallyin particular, a particularity of the appearance of the plant in question, its typical use, or a notable aspect of its environment. At least three types of nouns can be distinguished; the first concerns descriptive names which refer to a natural property of the plant: its morphology, its color, its taste, its smell. The second groups together pragmatic names which refer to the food, industrial or therapeutic use of the plant; in the third type are grouped the metonymic names which refer to the location of the plant, or to an element of its usual environment. The frequency of descriptive and pragmatic nouns further shows that these two practices are the most dominant (Lefèvre 2009).

Thus, for the plants identified in the present study, around thirty vernacular names come from their therapeutic use; for example, the vernacular name of *Artemisia herba-alba* Asso is **chih dwida** which means chih for worms, is given to this plant in connection with its deworming properties used in the treatment of helminthiasis. The local name of *Salvia verbenaca* is **khiyata** which designates that which sutures is due to its action which facilitates healing. In the same sense, for *Salvia officinalis* L., its vernacular name is **salmiya**, that is to say that which provides salvation and prevents danger, in classical Arabic is called **chafiya** translated as healing and in Latin *Salvia* from salvare which means to save; these names are due to its medicinal virtues. Also, *Hyoscyamus albus* L. called **banj** which means anesthetic because of its strongly sedative and anesthetic properties internally and externally which were administered to the patient before any surgical intervention (extraction of projectiles, amputations, etc.).

In addition to therapeutic use, certain names provide information on other artisanal or even industrial uses, on daily uses and on others inherent to beliefs; we can cite in this context, respectively, *Rubia peregrina* L. and especially *Rubia tinctorum* L. whose vernacular name **fouwat essabagines** means dyers' madder due to its use in dyeing to obtain the red color linked to the richness of the roots in anthraquinones. *Saponaria vaccaria* (Mill.) Rauschert, called **tuf essabun** or **sabun el-fqir** means better than soap or poor people's soap, in relation to its richness in saponosides, giving it a use for degreasing wool and fabrics. As for *Ferula communis* L., its name **fassoukh** and in other regions **al mubatil** refers to the use of its gum resin in ritual or magical fumigations and in witchcraft and counter-witchcraft practices.

In addition, several names refer to various plant characteristics (secretions, taste, smell, appearance, etc.). For example, the *Borago officinalis* L. species, which is covered in short, firm hairs that make it hard and rough to the touch, is known locally as **al hurraycha**, which means rough.

The pods of *Astragalus lusitanicus* Lam. have a long, swollen shape that resembles broad beans, which explains why this plant is called **fouila**, which means little bean. Green anise, *Pimpinella anisum* L., is called **habat hlawa** because of its sweet taste, as opposed to that of cumin, another Apiaceae with a pungent taste, which gives it the vernacular name of pungent anise. *Launaea arborescens* (Batt.) Maire, because of the latex it secretes, is called **mmu-lbeyna**, meaning the one with buttermilk.

For its part, the expected effect of a plant can also be the origin of its name; *Urtica urens* L. is commonly called **hariga** which means burning given its effect which causes skin rashes (urticaria). Also, because of the irritations caused by the latex of *Euphorbia helioscopia* L., it is given the name **tafura** which means eczema or pruritus.

In certain cases, the popular name of some of the plants listed relates to their locations; *Calamintha officinalis* Moench. Known as Nepeta derives from the Latin “Nepet or Nepetum” (today Nepi, a commune in the province of Viterbo in Lazio in Italy).

For its part, *Daphne laureola* L. is called **alili w-adrar** meaning mountain laurel; this alludes to its resemblance to oleander but specifies its location in the mountains. This distinguishes it from the oleander, *Nerium oleander* L. called **alili** and common near watercourses.

In addition, other plants provide information on legends linked to them; *Angelica archangelica* L. known as **hachichat malaeka** meaning angel herb owes this name to the legend according to which the curative virtues of the plant were shown to men by an angel. *Urginea maritima* (L.) is called **faraoun**, the Pharaoh in memory of an invasion of an Eastern people who fed on very large onions, or because it was the Egyptians who discovered its uses in antiquity.

Ultimately, there may be a link between these commonly used names and scientific names (Fennane & Rejdali 2016); thus, for species of the genus *Rubia*, this generic means red in Latin; the French name “garance” is related to “garancer” which mean to dye; Then comes its vernacular **lhamri** and **fouwat essabagin** meaning red and dye respectively. In all cases, this is related to the root rich in anthraquinone type coloring materials present in particular in *Rubia peregrenna* L. and especially *Rubia tinctorum* L. cultivated for its roots whose extracts or powder give natural dyes for wool or hair. The same connection can be established between the genus name *Urtica* "of uro, to burn", the vernacular name in Arabic dialect **harriga** "to burn, to hurt" and in classical Arabic **naba'at quras** or **al quarras** "to sting"; this is related to the burning sensation and then contact urticaria caused by the stinging hairs covering the nettles and which contain histamine, acetylcholine and serotonin which irritate the skin (Daoudi *et al.* 2015).

On the other hand, the French vernaculars, often generic, bring together numerous species, except of course for those of them which are monospecific (case in Morocco of the genera *Cedrus*, *Taxus*, *Argania*, etc.). For example, in Morocco, **zaatar,** oregano includes *Origanum vulgare* L., *Origanum compactum* L. (**zaatar tadlawi**: Tadla oregano); *Origanum elongatum* (Bonnet) Emb. & Maire (**zaatar rifi**: Oregano from the Rif), and *Origanum grosii* Pau & Font Quer.

Similarly, around ten species of perennial plants in the Lamiaceae family are called calament; coming from the Latin *Calamintha*, itself deriving from the Greek *kaláminthos*, this vernacular designates a kind of mint. However, the taxonomic investigation revealed that the calaments belong to the genera *Acinos* and *Calamintha*, since grouped in the genus *Clinopodium*.

We then note the Alpine calament: *Acinos alpinus* (L.) Moench (*Clinopodium alpinum* (L.) Kuntze), the field calament: *Acinos arvensis* (Lam.) Dandy (*Clinopodium acinos* (L.) Kuntze), the *Corsican calament*: *Acinos corsicus* (Pers.) Govaerts (*Clinopodium corsicum* (Pers.) Govaerts), the nepeta calament: *Calamintha nepeta* (L.) Kuntze (*Clinopodium nepeta* (L.) Kuntze) and the little calament: *Calamintha officinalis* (L.) Kuntze (*Clinopodium nepeta* (L.) Kuntze).

The two examples cited above (Oregano and Calament) show the use of adjectives and/or descriptors to specify and differentiate the species, both with regard to oregano opposing the species of the Rif to that of the Tadla, as well as for the calament, opposing the species of the Alps to that of Corsica or the fields.

For their part, the usual dialect vernaculars across the study area and elsewhere in Morocco show that four species of the *Urtica* genus of the Urticaceae family are grouped together at the level of the name Harriga relating to the nettle. These are

Urtica membranacea Poir., *Urtica urens* L., *Urtica pilulifera* L. and *Urtica dioica* L.. This similarity in name is a consequence of their common property, namely the presence of stinging hairs on the entire plant.

It is also the presence of hairs, in addition to the triangular shape of the leaves which gave the same vernacular **harriga** and the same English name "white nettle" to *Lamium album* L. of the Lamiaceae family, except that the plant does not sting; for its part, *Mercurialis annua* L. of the Euphorbiaceae family is also called **harriga melssa** meaning smooth nettle.

In the same sense, the vernacular name **chih** which is a generic name for several sagebrushes in the Arab world (Bellakhder 1997) corresponds in Morocco to several species of the *Artemisia* genus, such as *Artemisia herba-alba* Asso, *Artemisia mesatlantica* Maire, *Artemisia ifranensis* J.Didier, *Artemisia flahaultii Emb.& Maire*, *Artemisia negrei* Ouyahya and *Artemisia atlantica* Var. *maroccana.*

For its part, the vernacular name **jaada** designates three species belonging to three different genera of the same family Lamiaceae; These are respectively the chiffchaff germander *Teucrium polium* L., the toothed lavender *Lavandula dentata* L. and the desert horehound *Marrubium deserti* de Noe.

Finally, the similarity of vernacular names can take on greater dimensions by extending to species from different families; such is the case of the name **sikran** used to designate the Spotted Hemlock, *Conium maculatum* L. of the Apiaceae family and the Henbane *Hyoscyamus* sp. of the Solanaceae family.

Moreover, all the plants which produce delirium or drunkenness (Sekra) take this name such as *Datura*, *Hyoscyamus*, *Heliotropium*, *Withania*, *Lolium*… Another example is that of the vernacular **zaggum** carried by three species belonging to the same genus *Euphorbia* of the family Euphorbiaceae, *Euphorbia resinifera* O. Berg & C.F. Schmidt, *Euphorbia beaumierana* Hook. f. & Coss., *Euphorbia echinus* Hook.f. & Coss. and by the species *Balanites aegyptiaca* Del. of the family Zygophyllaceae; these plants are thorny and proverbial for their bitterness hence perhaps the fact that they share the same vernacular (Bellakhder 1997).

Unfortunately, this approach used to give names to plants sometimes leads consumers to fall into the error of naming and identifying plants (El Rhaffari & Zaid 2002), especially since certain plants can have common characters. For its part, the similarity of names is not without consequences; on the contrary, it could be the cause of the ineffectiveness of certain medicinal recipes, or even the toxicity of others, especially since plants are often recommended orally on the basis of their vernacular name. Therefore, to prevent therapeutic failures or potential intoxications, the use of a species in a given recipe should not rely solely on its vernacular name. It must be based on an identification carried out by specialists using precise scientific taxonomic criteria (Najem *et al.* 2021b).

Already, the chemical composition varies qualitatively and quantitatively between edaphic or climatic races of the same species (Fadil *et al.* 2014) and therefore this would surely be amplified when it comes to different species. Therefore, to avoid therapeutic failures or poisonings, the use of a species in a given recipe must not be based only on its vernacular name, but must consider an identification by specialists, carried out on the basis precise scientific taxonomic criteria.

Still, the vernaculars are not devoid of value to the extent that in certain cases they still remain precise; thus, among lavenders, *Lavandula pedunculata* (Mill.) Cav., *Lavandula* stoechas L. and *Lavandula atlantica* Braun-Blanq. are given the same vernacular name **lhalhal**, which is very well founded from a systematic point of view, given that these three taxa remain very closely related and are sometimes considered accurate subspecies of *Lavandula stoechas*. On the other hand, the species *Lavandula maroccana* Murb., *Lavandula dentata* L. and *Lavandula multifida* L., not affiliated with *Lavandula stoechas* L., each have their own vernacular name, respectively, **timzouria**, **halhal marakchiya** and **kohyla** (Bachiri *et al.* 2015).

Conclusion

The vernacular naming of plants is not without foundation; it is based on salient descriptors and characteristics of plants which come from both repeated observations and frequent use. It is also a result of the mixing of several civilizations and the cohabitation of different tribes in addition to being a junction between generations and different regions of the country. Also, this vocabulary, which over the years has survived as best it can through various sociological metamorphoses, constitutes an integral part of the national intangible heritage.

Declarations

List of abbreviations: Not applicable.

Ethics approval and consent to participate: Verbal prior informed consent was obtained from each informant during the survey.

Data Availability: The data has not been deposited in public repositories but is available from the authors.

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