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Research Article

Flora and Phytosociological of Plant in Al-Dawaimah of Palestine

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Abstract: Al-Dawaimah is an ancient Canaanite Palestinian village, occupied in 1948 by Israel, and belongs to inframediterranean to thermomediterranean thermotype and arid, semi-arid, and dry ombrotype. The study presents, a region rich in many plant vascular, and it is part of the Palestinian coast, North Africa, the Negev and the Sinai desert, in addition to the mountainous hills of Palestine located west of the Hebron, Jordan River and the Dead Sea. The objective is to identify and update the flora and vegetation in the area of Al-Dawaimah and its neighboring areas in west Hebron of Palestine. Methodology: More than 270 plant specimens have been taken from Al-Dawaimah and surroundings areas, using Braun-Blanquet, Van der Maarel and Salvador River Martinez methods to study the flora, and phytosociological plants, and 214 x 10 plants plots distributed in area were studied. Result and discussion: Three different plant communities were identified, in different environments between arid, dry- subhumid ombrotype and infra-thermomediterranean thermotype, and different soils as (carbon substrates as brown ruinsenas and terra rossa lands, limestone and others), where more than 214 species of plants have been found, of which 45 (20.02%) are endemic species, and in Raunkiaer's life system, trees represent were, (86; 40.18% trees), (34; 15.88% shrubs), (51; 23.83% chamaephytes), (10; 4.67% geophytes), (16; 7.47% phanerophytes), and (12; 6.54% hemicryptophytes). Conclusion: In Al-Dawaimah area, syntaxonomical performance of these associations are: *Quercetalia ilicis* Br.-Bl. ex Molinier 1934. *Rhamno lycioidis-Quercion cocciferae* Rivas Goday ex Rivas-Martinez 1975. 1. *Rhamnus palaestinae- Quercetum calliprini* ass. nova., *Pistacio lentisci -Rhamnetalia alaterni* Rivas-Martínez 1975. 2. *Ceratonio siliquae -Pistacetum lentisci* ass. nova., *Junipero phoeniceae- Pinon acutisquamae* A.V. Pérez et Cabezudo in A.V. Pérez et al. 1988 corr. Rivas-Martinez. et al. 2002. *Pinetalia halepensis* Biondi et al. 2014. 3. *Junipero phoeniceae- Pinetum halepensis* ass. nova.

Keywords: Palestine, Al-Dawaimah, Vegetation, Flora, Phytosociology, Communities, Plants.

Abbreviations: PCA- Main component analysis, ASL - Association, ASL1- Association one, ASL2- Association two, ass. nova- Association nova, E- Endemic, N- Native , Sh- Shrub, Cham- Chamaephytes, Geo- geophytes, Phan- phanerophytes, Herb- herbaceous, Hem- Hemicryptophytes. GI- Group one, GII- Group two, GIII- Group three.

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1. Introduction

Palestine is a territory of Mediterranean Basin, located in western of Asia with a peculiar ecology, and different ecosystems (Ighbareyeh et al., 2014, 2015), that shows a unique biodiversity and mild climate in winter and hot dry summer (Ighbareyeh et al., 2014c, 2015a), and is in transition from the Mediterranean forests in the northern part and some areas and various mountain heights, through the bathas and grassy plants in most parts, to various shrubs in the plains in all middle, the southern and northern highlands, and desert areas that support the contracted vegetation in the south as in the desert Negev, to develop the tropical savannah vegetation in its various warm areas, where more than 2.867, 2946 and 2.890 species, 150 of which are endemic or very rare species (Ighbareyeh et al., 2014, 2015, 2017a). The distribution Palestinian flora includes many updated data on the nomenclature, distribution and habitat (Zohary, 1966, 1972; Dothan, 1978, 1986; Danin and Feinbrun-Dothan, 1991; Danin & Orshan, 1999 and Danin, 2000).

Palestine flora reports 149 endemic species (6% of the total plants), 43% of which are common, 27.5% are rare and 25.6% are very rare (Zohary, 1972), in a recent study, about 155 endemic species were found (Ighbareyeh et al., 2014). In addition, more than 2,750 plant species were estimated, including 138 families (Danin, 1991, 1999; Ighbareyeh et al., 2014). Many researchers have studied bioclimate, flora, plant communities, vegetation, and ecology in Palestine for the last seventh years (Ighbareyeh et al., 2016, 2017a,b,c, 2018a,b,c,e,d; Jehad et al., 2019; Jehad et al., 2021; Ighbareyeh J.M.H., 2021; Ighbareyeh et al., 2021; Ighbareyeh et al., 2022), and several botanical studies have been conducted in some countries near Palestine as Turkey by Bekat (1987), Ocakverdi & Çetik (1987), Ocakverdi & Ünal (1991), Tatli et al. (1994), Serin & Eyce (1994), Küçüködük & Ketenoğlu (1996), Mutlu & Erik (2003), Kargıoğlu (2007), Özhatay et al. (2009), Tsiourlis et al. (2009), Tel et al. (2010), Özhatay et al. (2011), Aytaç & Türkmen (2011), Korkmaz et al. (2011), Altınözlü (2012). This study focused in most of the territories occupied in 1967 by Israel, such as Hebron, Jenin, Nablus, Ramallah, Tulkarem, Bethlehem, Jericho and others (Ighbareyeh et al., 2014a,b,c).

The aim of this research is to identify and updated the flora and vegetation in the area of Al-Dawaimah and its neighboring areas in west Hebron of Palestine.

2. Methodology

2.1. study area

Al-Dawaimah (Dawaimah) is a displaced Palestinian Canaanite village, 24 kilometers away from Hebron city, its rises about 350 meters above sea level, with a coordinates (31°32′10″N 34°54′43″E), surrounded by the lands of the villages of Idna, Dura, Al-Qubaiba, Beit Jibrin and Arab al-Jebarat (Figure 1). The Canaanites called it the "spit", "high"; the reason for the name of the village Al-Dawaimah attributed to the rainy Arabs who came from Najd in the Hijaz in an area called Dumat al-Jandal and stayed or its settled (Government of Palestine, 2018). In the fact, it is worth noting that Al-Dawaimah fell under the Israeli occupation on 29 October 1948, and the Amatsya colony, founded in 1955, was built on the ruins of Al-Dawaimah, and atrocities were massacred against the Palestinian population (George Post, 1948; Anis Sayegh, 1968; Mustafa Al-Dabbagh, 1974; Walid Al-Khaldi, 1997). Moreover, Al-Dawaimah climate tends to be somewhat desert, because it is affected by the Negev desert, where the temperature in summer reaches 35 degrees Celsius and moderate in winter, the average amount of rain is between 300-450 mm annually, and therefore the climate of Al-Dawaimah is generally considered temperate.

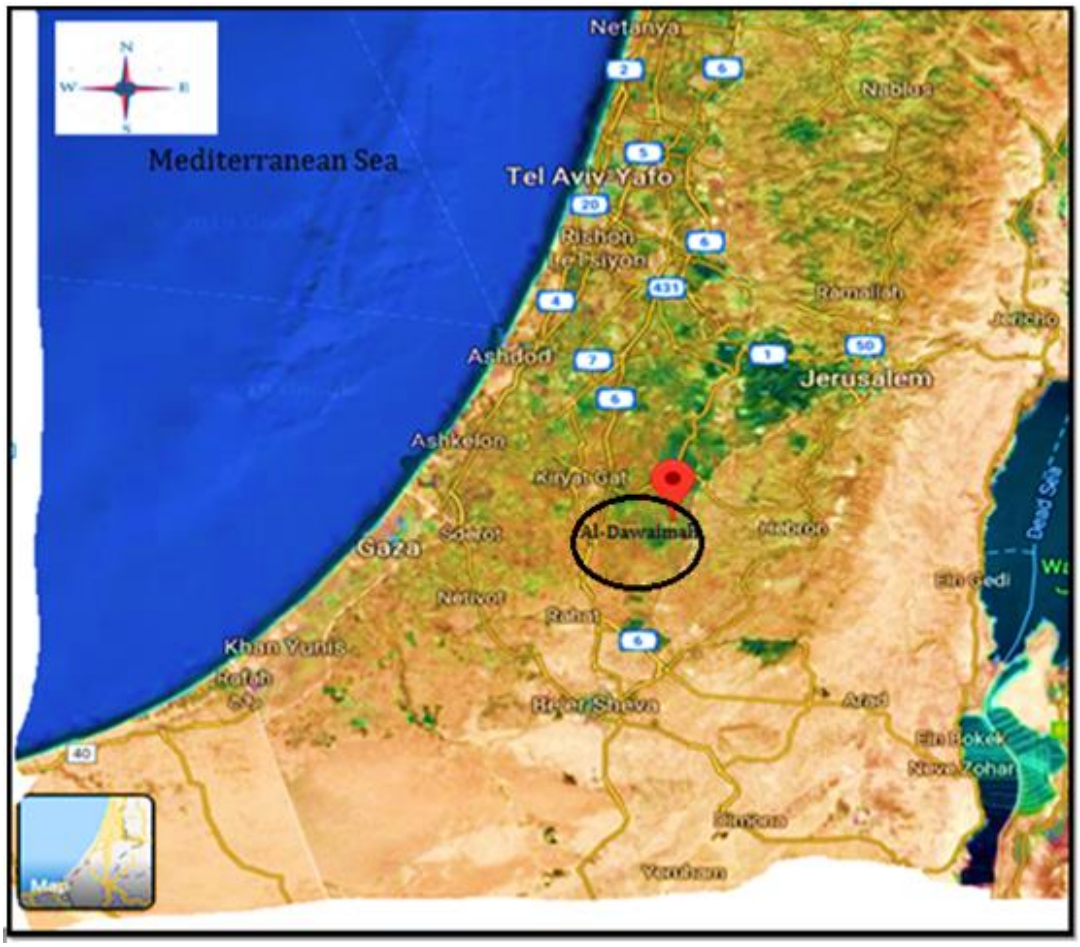

Figure 1. Area study (Al-Dawaimah), referred to as the red mark in the map.

270 samples of woody plant communities were chosen as statistically significant, inventories or groups were made by methodology of Braun-Blanquet (1952, 1964, 1979), Braun-Blanquet & Bolos (1958) and Van der Maarel (1979), and flora of Palestine, Syria, Lebanon, Jordan, and Sinai were used in the study. Although there are botanical studies in the area, especially Idna, Beit Jibrin and Wadi al-Quff (Ighbareyeh et al., 2014, 2017a and 2019), a statistical treatment was carried out in the 270 wooden plant inventories. Cluster analysis (Ward's method cluster) was applied, and the main component analysis (PCA), were used to founded different groups of plant communities, which have used the XLASTAT program, in addition, vegetation has been interpreted according to several methodological works in the world such as Rivas-Martínez (2004, 2005), Biondi (2011) and Pott (2011). Furthermore, to realize the groups and its statistical processing, we formed a matrix of 207 x 10 columns relevant for converting Braun-Blanquet plants, biological and phytosociological indexes (+=2, 1=3, 2=4, 3=5, 4=6, 5=7) to convert these ones of Van der Maarel (1979), (5: covering more than 3/4 of the area, 4: any number of individuals covering 1/2 - 3/4 of the area, 3: any number of individuals covering 1/4 -1/2 of the area, 2: very numerous or covering at least 5% of the area, 1: plentiful but of small cover value, and + is a cover very small), and we used Euclidean Spaces (Solomentsev, 2001) and principal component analysis of ingredients to avoid any shortage of plant data and to analyze it accurately. Due to the lack of large amount of meteorological data, we selected a sampling area in the western Hebron area, where inventories of 270 woody plants were taken at the Al-Dawaimah site (which has been under occupation since 1948). Forests and shrub steppe and a little of herbaceous plants were observed or sampled to obtain the thermicities, and ombrotype indicators.

2.2. Targeting and collection of the plants data

We have taken 270 specimens of many different plants from the village of Al-Dawaimah and some of the nearby areas between October 2020 to October 2021, data were used to create an Excel table with 214 rows (plants) and 10 columns (relèves), and from this table, we created the Ward's method cluster to measure distance, and similarity, by the procedure known as full correlation method. We subsequently applied principal component analysis (PCA) having previously generated two matrices of correlation and covariance values, and the names of some of the places where samples were collected are: (Montar al-Jawaza, Khallet al-Jawza, Wadi al-Qashab, Khirbat Dehna, Khallet al-Masri, Khallet al-Katil, Marah Abu Ja'ed, Marah Abu Naaj, Shieb Rabah, Shekaf, Ashbour, Wadi al-Naqiya, Al-bus, Tayyib Tasam, Wadi al-Baydah, Marah Bishr, Adra, the Bedouin Shieb, Wadi al-Arab, Tawazat, Ganan al-Taseh, Al-kashklia, Khallet Musa, Al-gontara, Amm al-Jamajim, Wadi ashomer, Rasim Zureik, Khallet Tatar, Jorin Salama, Abu Al-amad (Khirbet Umm al-Ghanayem), Khallet al-najajreh, Wadi & Khallet Al-Khresa, Khallet Jobran, Khallet Abu Jaber, Ain-Ismael Ayesh, Yarde and Ghatasha (Table 1) and (Figure 2, and Figure 3).

Table 1. Sampling of study area.

Inventories	Coordinates	Site	Altitude	Biogeographic unit
Inv.1	31.536806, 34.912500	Wadi al-Naqiya, Al-bus, Tayyib Tasam, Wadi al-Baydah	360	Mediterranean basin territories
Inv. 2	31.552171, 34.940309	Khallet al-Masri, Khallet al-Katil, Marah Abu Ja'ed, Marah Abu Naaj, Shieb Rabah	370	Mediterranean basin territories
Inv. 3	31.533701, 34.939193	Marah Bishr, Adra, the Bedouin	310	Mediterranean basin territories
Inv. 4	31.546213, 34.430097	Ganan al-Taseh & Al-kashklia, Wadi al-Qashab, Shieb, Shekaf, Ashbour & Al-Dawaimah center	390	Mediterranean basin territories
Inv. 5	31.546806, 34.902520	Wadi al-Arab & Tawazat	320	Mediterranean basin territories
Inv. 6	31.553122, 34.866323	Rasim Zureik, Khallet Tatar, Jorin Salama, Abu Al-amad Khirbet Umm al-Ghanayem)	350	Mediterranean basin territories
Inv. 7	31.559193, 34.935159	Khallet Musa, Al-gontara, Amm al-Jamajim, Wadi ashomer	355	Mediterranean basin territories
Inv. 8	31.556121, 34.903574	Montar al-Jawaza, Khallet al-Jawza, Khirbat Dehna	370	Mediterranean basin territories
Inv. 9	31.571771, 34.934129	Khallet al-Najajreh, Wadi & Khallet Al-Khresa, Khallet Jobran, Khallet Abu Jaber	305	Mediterranean basin territories
Inv. 10	31.566213, 34.910097	Ain-Ismael Ayesh, Yarde and Ghatasha, Wadi Al-rgate	300	Mediterranean basin territories

Inv.: Inventores.

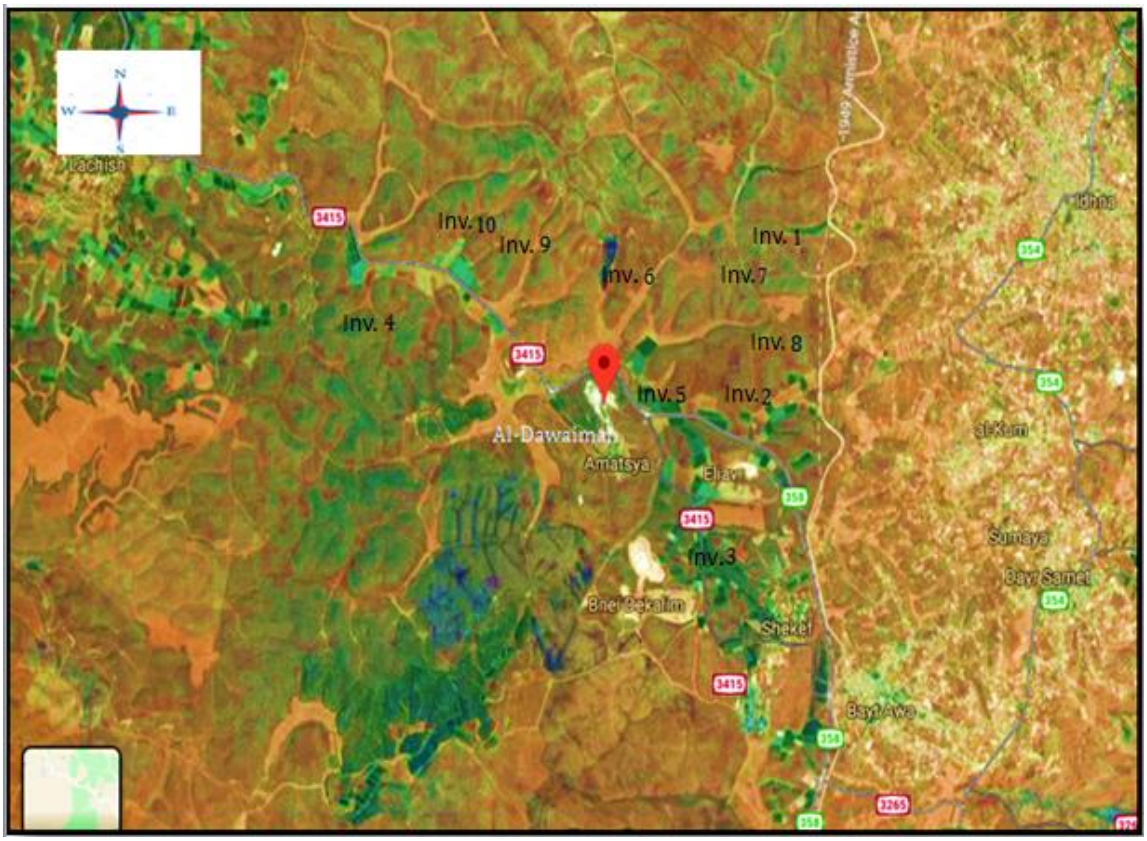

Figure 2. The region from which the samples (inventories 1-10) were taken by satellite, referred to as the red mark (Al-Dawaimah) and called the Amatsya colony today.

Figure 3. It is part of the plants studied in the center of Al-Dawaimah, specifically in the northwestern region.

3. Result and Disscusion

3.1. Analysis of vegetation

Furthermore, the flora in Palestine can be divided into several distinct groups as (Mediterranean basin as Maquis, Oak and Woodlands; Irani-Turanian, also on the Asian plains of the Syrian desert, Anatolia and the Gobi Desert; Saharo-Arabian as sand, Sinai and Arabian deserts; Sudano- Zambezi, as sub-tropical savannah species in Africa; Euro - Siberia; various plants that grow in more than one area of Palestine and neighboring countries; and plant species coming from the Americas, South Africa and Australia) (Danin, 2004; Ighbareyeh et al., 2014c, 2018a).

In statistical processing, we obtained two large groups (A and B) in cluster (Figure 4); group A consist of two association or communities (ASL1 and ASL2); the association 1 (ASL1) which is included forests, oak, woodlands, shrub-lands and steppe copes affected by climatophilous, and association 2 (ASL2), presenting different pants of forests as *Quercus* spp., Maquis, woodlands, scrubland and shrub affected by climatophilous, whilst, group B consists of one association named (ASL3) is included the forests of *Pinus halepensis* Miller, *Juniperus phoenicea* L. and *Cupressus sempervirens* L. species (Torres et al, 1999; Biondi et al., 2014; Rachid Meddour et al., 2017; Pesaresi et al., 2017).

3.1.1. The associations of *Ceratonio siliquae-Pistacetum lentisci* ass. nova

Community or association one, mixed Maquis and open forests of *Pistacia lentiscus* L. and *Ceratonia siliqua* L. represented in cluster (ASL1-1, 2, 6, 7, 8). *Pistacia* species (*Pistacia palaestina* Boiss., *Pistacia khinjuk* Stocks, *Pistacia saportae* Burnat., *Pistacia atlantica* Desf., *Pistacia terebinthus* L., *Pistacia vera* L., *Pistacia khinjuk* Stocks) *Schinus molle* L., *Rhus coriaria* L., in addition to dominated by the sclerophyllous evergreen of *Quercus* genus (*Q. calliprinos* Webb. (*Quercus palaestina* k. or *Quercus coccifera* L.)., *Quercus look* Kotschy, *Quercus libani* G. Olivier, *Quercus inthaburensis* Decne., *Quercus rotundifolia* Lam., *Quercus infectoria* Olivier, *Quercus boissieri* Reut., *Quercus cerris* L.), and *Rhamnus spp*. as *Rhamnus lycioides* L., *Acer obtusifolium* Sm., *Acer syriscum* Boiss., *Acer monspessulanum* L., *Polygonum palaestinum* Zohary, with overlapping elements or common plant species such as *Cersis siliquastrum* L., *Poinciana gillesii* Hook., *Acacia salicina* Lindl., *Acacia cyanophylla* Lindl., *Sophora japonica* L., *Calicotome villosa* (Poir.) Link, *Retama raetam* (Forssk.) Webb. & Berthel., *Genista monspessulana* (L.) O. Bolós & Vigo, *Acacia dealbata* Link, *Retama rhodorhizoides* (Webb & Berthel.), *Acacia radiana* Savi., *Ficus retusa* L., *Ficus sycomorus* L., with others species found in extreme conditions as dry, although it can cope in sub-humid and thermophilous region in the thermo-Mediterranean thermotype and rocky ambience, loam, sand, hard limestone with rendzinas and terra rossa soil. We suggest that the group represents a group of Mediterranean region plants with different heights of the land (Mediterranean woodland, shrub-land, scrublands and landscapes), which are found in most parts or regions of the Mediterranean region and its associated is *Ceratonio siliquae-Pistacetum lentisci* (Table 2: ASL1-1, 2, 6, 7, 8).

Table 2. Association one: *Ceratonio siliquae-Pistacetum lentisci* ass. nova

Species							
Releve of inventories	**1**	**2**	**6**	**7**	**8**	**P**	**S**
Surface in m2 1 = 10	**350**	**300**	**270**		**400**	**R**	**T**
Cover rate %	**75**	**75**	**80**		**70**	**E**	**A**
Altitude in m.	**300**	**350**	**340**		**370**	**S**	**T**
Average height of veg. (m.)	**3**	**5**	**6**		**7**	**E**	**U**
Slope %	**20**	**25**	**15**		**10**	**N**	**S**
Orientation	**E**	**N**	**N**	**E**	**W**	**C**	

Order number	**2**	**1**	**6**	**7**	**8**	**E**	
Characteristic of association and higher units							
Ceratonia siliqua L.	3	3	2	2	1	IV	N
Pistacia lentiscus L.	4	3	2	2	2	V	N
Pistacia palaestina Boiss.	2	2	1	1	1	V	E
Pistacia khinjuk Stocks		2	1	1		III	N
Pistacia saportae Burnat.			1		1	II	N
Pistacia atlantica Desf.	1		1	1		II	N
Pistacia terebinthus L.			1	1		II	N
Pistacia vera L.		1				I	N
Schinus molle L.		1	1			II	N
Rhus coriaria L.				1	1	II	N
Schinus terebinthifolius Raddi				1	1	II	N
Companions							
Quercus calliprinos Webb. (*Quercus coccifera* L.) or (*Quercus palaestina* Kotschy)	4	2	2	1	1	V	N
Quercus look Kotschy				+	1	I	E
Quercus libani G.Olivier				+	1	I	N
Quercus inthaburensis Decne.				1	1	II	N
Quercus infectoria Olivier				2	1	II	N
Quercus boissieri Reut.				2	1	II	N
Quercus cerris L.				1	1	II	N
Rhamnus punctata Boiss.	1	1	1			III	N
Rhamnus palaestinus Boiss. or *Rhamnus lycioides* L.	2		1		1	III	E
Rhamnus alaternus L.	1					I	N
Zizyphus Spina-christi L. Desf.							N
Zizyphus Lotus (L.) Lam.							N
Paliurus spina-christi Miller		1				I	N
Ziziphus jujuba Miller						I	N
Searsia tripartita (Ucria) Moffett							N
Sageretia thea (Osbeck) M.C.Johnst.							N
Pinus halepensis Miller		1				I	N
Pinus Pinea L.			1			I	N
Pinus canariensis C. Smith							N
Pinus brutia Tenore					1	I	N
Cupressus sempervirens L.					2	I	N
Cupressus sempervirens L. var .horizontalis Miller							N
Cupressus arizonica Greene							N
Thuja occidentalis L.							N
Juniperus oxycedrus L.		1				I	N
Juniperus phoenicea L.		1				I	N
Juniperus excelsa M. Bieb.							N
Juniperus drupacea Labill.			1			I	N
Mespilus germanica L.			1			I	N
Crataegus azarolus L.							N

Prunus dulcis (Mill.) D. A. Webb. (*Amygdalus ramonensis* Danin)							E
(Crataegus oriana (L.) DC.)							N
Sarcopoterium spinosum (L.) Spach			1	1	1	III	N
Pyrus syriac Boiss.				1		I	E
Crataegus monogyna Jacq.							N
Malus communis Desf.					1	I	N
Pyracantha coccinea M. Roem.			1			I	N
Prunus spinosa L.			1			I	N
Spartium junceum L.			1			I	N
Cersis siliquastrum L.		2	1	1		III	N
*Poinciana gillesii*Hook.				1		I	N
Acacia salicina Lindl.		1	1	1		III	N
Acacia cyanophylla Lindl.		1	1		1	III	N
Sophora japonica L.		1	1		1	III	N
Calicotome villosa (Poir.) Link				1	1	II	N
Retama raetam (Forssk.) Webb. & Berthel.		1	2	1		III	N
Genista monspessulana (L.) O.Bolós & Vigo		1		1		III	N
Acacia dealbata Link		1	1	1		III	N
Retama rhodorhizoides (Webb. & Berthel.)		1	1	1		III	N
Acacia radiana Savi.		1	1	1		III	N
Ficus retusa L.	1	2	1			III	N
Ficus sycomorus L.	1					I	N
Ficus cariaca L.				1		I	N
Ficus benjamina L.							N
Morus alba L.			1			I	N
Morus nigara L.			1			I	N
Olea europaea L.			2	1	1	III	N
Phillyria media L.				1		I	N
Olea oleaster Hoffmanns. & Link						I	N
Salix alba L.							N
Populus alba L.				1		I	N
Populus nigra L.							N
Populus euphratica Oliv.			1			I	N
Tamarix articulate Vahl.			1			I	N
Tamarix aphylla L.							N
Tamarix jordanis Boiss.							E
Tamarix palestina Bertol.							E
Tamarix nilotica (Ehrenb.) Bunge							N
Tamarix negevensis Zohary							E
Tamarix parviflora DC.							N
Tamarix tetragyna Ehrenb.							N
Tamarix gennessarensis Zohary							E
Reaumuria negevensis Zohary & Danin							E
Acer obtusifolium Sm. (*Acer syriscum* Boiss.)	1		1	1		III	E

Acer monspessulanum L.						N
Polygonum palaestinum Zohary						E
Persicaria lanigera (R.Br.) Sojak						N
Atraphaxis spinosa L.						N
Rheum palaestinum Feinbrun						E
Anagyris foetida L.						N
Lycium shawii Roem. & Schult.						N
Lycium barbarum L.						N
Lycium europaeum L.			1		I	N
Phlomis pungens Willd.			1		I	N
Phlomis brachyodon (Boiss.) Zohary			1		I	E
Phlomis chrysophylla Boiss.			1		I	N
Brachychiton populneus (Schott & Endl.) R.Br.		1			I	N
Jacaranda mimosaefolia D. Don		1			I	N
Capparis spinosa L.		1			I	N
Celtis australis L.		1			I	N
Casuarina equesitifolia L.						N
Juglans regia L.						N
Atriplex halimus L.						N
Arbutus andrachne L.		1	1		II	E
Balanites aegyptiaca (L.) Delile			1		I	N
Laurus nobilis L.		1			I	N
Pteridium aquilinum (L.) Kuhn			1		I	N
Paeonia mascula (L.) Mill.			1		I	N
Melia azedarach L.	1				I	N
Azolla filiculoides Lam.	1				I	N
Iris mesopotamica Dykes	1				I	E
Leptadenia pyrotechnica (Forssk.) Decne.				1	I	N
Styrex officinalis L.		1			I	N
Salvia fruticosa Miller		1			I	N
Salvia officinalis L.		1			I	N
Salvia aegyptiaca L.		1			I	N
Salvia palaestina Benth.			1		I	E
Salvia aethiopis L.						N
Micromeria fruticosa (L.) Druce.			1		I	N
Micromeria cremnophila Boiss.			1		I	N
Micromeria danaensis Danin			1		I	E
Micromeria serbaliana Danin & Hedge						N
Micromeria sinaica Benth.		1			I	E
Achillea aegyptiaca L.		1			I	N
Achillea arabica Kotschy		1			I	N
Achillea millefolium L.		1			I	N
Achillea aleppica DC.			1		I	N
Artemisia abrotanum L.			1		I	N
Artemisia absinthium L.			1		I	N

Artemisia sieberi Besser.				1		I	N
Hedera helix L.				1		I	N
Lonicera etrusca Santi		1				I	N
Opuntia ficus indica (L.) Mill.		1				I	N
Opuntia robusta J.C. Wendl.		1				I	N
Opuntia ficus-barbarica A. Berger		1				I	N
Asparagus horridus L.			1			I	N
Asparagus acutifolius L.		1				I	N
Asparagus setaceus Gessop			1			I	N
Asparagus palaestinus Baker			1			I	E
Asparagus aphyllus L.			1			I	N
Noaea mucronata (Forssk.) Asch. & Schweinf.			1			I	N
Argyrolobium crotalarioides Jaub. & Spach			1			I	E
Astracantha bethlehemitica (Boiss.) Podlech			1			I	E
Acantholimon libanoticum Boiss.			1			I	N
Verbascum galilaeum Boiss.			1	1		II	E
Verbascum galilardotii Boiss.				1	1	II	E
Verbascum berytheum Boiss.				1	1	II	E
Verbascum eremobium Murb.				1	1	II	E
Verbascum tiberiadis Boiss.					1	I	E
Verbascum transjordanicum Murb.				1	1	II	E
Zygophyllum dumosum Boiss.				1	1	I	E
Phlomis viscosa Poiret					1	I	E
Phlomis platystegia Post					1	I	E
Iris palaestina Boiss.		1	1	1		III	E
Iris vartanii Foster					1	I	E
Iris atrofusca Baker					1	I	E
Leopoldia bicolor (Boiss.) Eig. et Feinbrun					1	I	E
Vigna luteola (Jacq.) Benth.			1		1	II	N
Clematis flammula L.			1		1	II	N
Clematis cirrhosa L.			1		1	II	N
Vitex agnus-castus L.							N
Globularia arabica Jaub. & Spach							N
Hibiscus micranthus L.							N
Cynanchum acutum L.		1		1		II	N
Echium angustifolium Mill.			1			I	N
Heliotropium maris-mortui Zohary							E
Podonosma orientalis (L.) Feinbrun			1			I	N
Echinops philistaeus Feinbrun & Zohary	1	1	1			III	E
Iphiona maris-mortui Feinbrun	1					I	E
Heliotropium bacciferum Forssk.	1	1				II	N
Heliotropium arbainense Fresen.			1			I	N
Galium canum Req. ex DC.	1	1				II	N
Galium elongatum C. Presl.	1	1				II	N
Galium humifusum M. Bieb.	1	1				II	N

Crepis hierosolymitana Boiss.		1				I	E
Fagonia bruguieri DC.					1	I	N
Fagonia mollis Delile				1	1	II	N
Fagonia orientalis C. Presl.				1	1	II	N
Fagonia arabica L.					1	I	N
Nitraria retusa (Forssk.) Ascherson			1		1	II	N
Euphorbia hierosolymitana Boiss.	1	1				II	E
Ailanthus altissima (Miller) Swingle			1	1		II	N
Rubia tinctorum L.				1		I	N
Moringa peregrina (Forssk.) Fiori		1				I	N
Grewia villosa Willd.		1				I	N
Alkanna orientalis (L.) Boiss.		1	1			II	N
Alkanna strigosa Boiss. & Hohen.		1	1			II	N
Alkanna galilaea Boiss.			1			I	E
Ononis natrix L.							N
Artemisia arborescens L.	1	1				II	N
Artemisia sieberi Besser		1	1			II	N
Anvillea garcinii (Burm.f.) DC.		1				I	N
Pluchea dioscoridis (L.) DC.		1				I	N
Artemisia monosperma Delile		1				I	N
Nerium oleander L.			1			I	N
Parkinsonia aculeata L.			1			I	N
Ochradenus baccatus Delile			1			I	N
Smilax asperan L.			1			I	N
Satureja sinaica (Benth.) Briq.			1		1	II	E
Satureja thymbra L.		1	1		1	II	E
Salvia judaica Boiss.			1		1	II	E
Suaeda palaestina Eig. & Zohary, *Reaumuria hirtella* Jaub. & Spach			1		1	II	E
Teucrium lamiifolium sensu Boiss.					1	I	E
Salvia eigii Zohary				1	1	II	E
Origanum ramonense Danin				1	1	II	E
Majorana syriacum (L.) Kostel, *Origanum syriaca* L.		1	1	1	1	III	E

The percentage of plant species found in sampling and community studies: V = 100%, IV = 60.1% - 80%, III = 40.1% - 60%, II = 20.1% - 40% and I = 0.1% - 20%. N: Native and E: Endemic. Association (ASL), GI: Group one, G II: Group two, GIII: Group three, ASL 1: *Ceratonio siliquae -Pistacetum lentisci* ass. nova.

3.1.2. The association of Rhamnus palaestinae- Quercetum calliprini ass. nova

The second community represented (ASL2- 5, 9, 10) in the cluster and consists of forests or Maquis and oak plants as *Quercus calliprinos* Webb. (*Quercus palaestina* Kotschy or *Quercus coccifera* L.), *Quercus look* Kotschy, *Quercus libani* G. Olivier, *Quercus inthaburensis* Decne., *Quercus infectoria* Olivier, *Quercus boissieri* Reut., *Quercus cerris* L. and the deciduous as *Pistacia palaestina* L. on limestone with terra rossa soil are still common in the north of Palestine, Jordan, Lebanon and Syria countries, and mesophytic companions by *Rhamnus*_subsp. As *Rhamnus lycioides* L. or *Rhamnus palaestinus* Boiss., *Rhamnus punctata* Boiss., *Rhamnus alaternus* L., *Zizyphus Spina-christi* L. Desf., *Zizyphus*

Lotus (L.) Lam., *Paliurus spina-christi* Miller. *Ziziphus jujuba* Miller, *Acer obtusifolium* Sm. or *Acer syriscum* Boiss., *Arbutus andrachne* L., *Laurus nobilis* L., *Crataegus azarolus* L., & many herbaceous and geophytes species. Otherwise, community represent (temperate forests, Maquis, steppe, grasslands, savannahs, and shrublands) (Akman et al., 1984, 1985; Quézel et al. 1992), and the climate temperate and ranges from semi-arid to semi-humid (dry and extremes temperate plants of West Asia, and Eurasian steppes), which are found in the Mediterranean region, this assures us that the plant association is *Rhamnus palaestinae-Quercetum calliprini* (Table 3. ASL2- 5, 9, 10).

Table 3. Association two ASL2: *Rhamnus palaestinae- Quercetum calliprini* ass. nova.

Species					
Releve of inventories	**9**	**10**	**5**	**P**	**S**
Surface in m2 1 = 10	**250**	**300**	**370**	**R**	**T**
Cover rate %	**65**	**70**	**75**	**E**	**A**
Altitude in m.	**300**	**310**	**320**	**S**	**T**
Average height of veg. (m.)	**3**	**7**	**8**	**E**	**U**
Slope %	**20**	**30**	**10**	**N**	**S**
Orientation	**E**	**W**	**S**	**C**	
Order number	**9**	**10**	**5**	**E**	
Characteristic of association and higher units					
Rhamnus palaestinus Boiss. (*Rhamnus lycioides* L.)	3	3	2	IV	E
Quercus calliprinos Webb. (*Quercus coccifera* L.)	4	3	2	IV	N
(*Quercus look* Kotschy)		+	1	I	E
Quercus libani G.Olivier		+	1	I	N
Quercus inthaburensis Decne.		2	1	II	N
Quercus infectoria Olivier	1		1	II	N
Quercus boissieri Reut.	1	2	1	III	N
Quercus cerris L.	1		1	II	N
Compainios					
Pistacia lentiscus L.	3	3	1	V	N
Pistacia saportae Burnat.	2	1	1	III	N
Pistacia palaestina Boiss.	2	1	1	III	N
Rhamnus punctata Boiss	2	2	1	III	N
Rhamnus alaternus L.		1	1	II	N
Zizyphus Spina-christi L. Desf.		1	1	II	N
Zizyphus Lotus (L.) Lam.	1	1		II	N
Paliurus spina-christi Miller	1	1		II	N
Ziziphus jujuba Miller		1	1	II	N
Searsia tripartita (Ucria) Moffett		1		I	N
Sageretia thea (Osbeck) M.C.Johnst.		1		I	N
Pistacia khinjuk Stocks	2	1	1	III	N
Pistacia atlantica Desf.	2	1	1	III	N
Pistacia terebinthus L.		1	1	II	N
Pistacia vera L.		1		I	N

Schinus molle L.		1	1	II	N
Rhus coriaria L.		1	1	II	N
Schinus terebinthifolius Raddi		1	1	II	N
Pinus halepensis Miller	1		1	II	N
Pinus Pinea L.			1	I	N
Pinus canariensis C. Smith		1		I	N
Pinus brutia Tenore					N
Cupressus sempervirens L.		1		I	N
Cupressus sempervirens L. var .horizontalis Miller		1		I	N
Cupressus arizonica Greene			1	I	N
Thuja occidentalis L.					N
Juniperus oxycedrus L.		1		I	N
Juniperus phoenicea L.		1		I	N
Juniperus excelsa M.Bieb.		2		I	N
Juniperus drupacea Labill.		1		I	N
Mespilus germanica L.		1		I	N
Crataegus azarolus L.			1	I	N
Prunus dulcis (Mill.) D.A.Webb., (*Prunus amygdalus* (L.) Batsch)	1	1		II	E
Crataegus oriana (L.) DC	1			I	N
Sarcopoterium spinosum (L.) Spach	1	1	1	III	N
Pyrus syriac Boiss.		1		I	E
Crataegus monogyna Jacq.		1		I	N
Malus communis Desf.		1		I	N
Pyracantha coccinea M. Roem.		1		I	N
Prunus spinosa L.		1		I	N
Ceratonia siliqua L	2	1	1	III	N
Spartium junceum L.			1	I	N
Cersis siliquastrum L.		1		I	N
*Poinciana gillesii*Hook.		1		I	N
Acacia salicina Lindl.					N
Acacia cyanophylla Lindl.		1		I	N
Sophora japonica L.					N
Calicotome villosa (Poir.) Link					N
Retama raetam (Forssk.) Webb. & Berthel.			1	I	N
Genista monspessulana (L.) O.Bolós & Vigo			1	I	N
Acacia dealbata Link			1	I	N
Retama rhodorhizoides (Webb. & Berthel.)					N
Acacia radiana Savi.			1	I	N
Ficus retusa L.			1	I	N
Ficus sycomorus L.					N
Ficus cariaca L.		2	1	II	N
Ficus benjamina L.		1	1	I	N
Morus alba L.		1		I	N

Morus nigara L.			1	I	N
Olea europaea L.		1		I	N
Phillyria media L.		1		I	N
Olea oleaster Hoffmanns. & Link		1		I	N
Salix alba L.			1	I	N
Populus alba L.			1	I	N
Populus nigra L.			1	I	N
Populus euphratica Oliv.		1		I	N
Tamarix articulate Vahl.			1	I	N
Tamarix aphylla L.					N
Tamarix jordanis Boiss.					E
Tamarix palestina Bertol.					E
Tamarix nilotica (Ehrenb.) Bunge			1	I	N
Tamarix negevensis Zohary					E
Tamarix parviflora DC.					N
Tamarix tetragyna Ehrenb.					N
Tamarix gennessarensis Zohary					E
Reaumuria negevensis Zohary & Danin					E
Acer obtusifolium Sm. *Acer syriscum* Boiss.		1	1	II	E
Acer monspessulanum L.			1	I	N
Polygonum palaestinum Zohary	1	1	1	II	E
Persicaria lanigera (R.Br.) Sojak			1	I	N
Atraphaxis spinosa L.			1	I	N
Rheum palaestinum Feinbrun			1	I	E
Anagyris foetida L.					N
Lycium shawii Roem. & Schult.					N
Lycium barbarum L.		1		I	N
Lycium europaeum L.					N
Phlomis pungens Willd					N
Phlomis brachyodon (Boiss.) Zohary					N
Phlomis chrysophylla Boiss.					N
Brachychiton populneus (Schott & Endl.) R.Br.		1		I	N
Jacaranda mimosaefolia D. Don		1		I	N
Capparis spinosa L.		1		I	N
Celtis australis L.					N
Casuarina equesitifolia L.		1		I	N
Juglans regia L.		1		I	N
Atriplex halimus L.		1		I	N
Arbutus andrachne L.	1	1		II	E
Balanites aegyptiaca (L.) Delile					N
Laurus nobilis L.		1		I	N
Pteridium aquilinum (L.) Kuhn					N
Paeonia mascula (L.) Mill.					N
Melia azedarach L.					N
Azolla filiculoides Lam.					N

Iris mesopotamica Dykes					E
Leptadenia pyrotechnica (Forssk.) Decne.					N
Styrex officinalis L.		1		I	N
Salvia fruticosa Mill.			1	I	N
Salvia officinalis L.			1	I	N
Salvia aegyptiaca L.			1	I	N
Salvia palaestina Benth.			1	I	E
Salvia aethiopis L.					N
Micromeria fruticosa (L.) Druce.					N
Micromeria cremnophila Boiss.		1		I	N
Micromeria danaensis Danin					E
Micromeria serbaliana Danin & Hedge			1	I	N
Micromeria sinaica Benth.					E
Achillea aegyptiaca L.					N
Achillea arabica Kotschy					N
Achillea millefolium L.					N
Achillea aleppica DC.					N
Artemisia abrotanum L.		1		I	N
Artemisia absinthium L.		1		I	N
Artemisia sieberi Besser.		1		I	N
Hedera helix L.			1	I	N
Lonicera etrusca Santi			1	I	N
Opuntia ficus indica (L.) Mill.			1	I	N
Opuntia robusta J.C. Wendl.			1	I	N
Opuntia ficus-barbarica A. Berger			1	I	N
Asparagus horridus L.			1	I	N
Asparagus acutifolius L.			1	I	N
Asparagus setaceus Gessop			1	I	N
Asparagus palaestinus Baker			1	I	E
Asparagus aphyllus L.			1	I	N
Noaea mucronata (Forssk.) Asch. & Schweinf.			1	I	N
Argyrolobium crotalarioides Jaub. & Spach					N
Astracantha bethlehemitica (Boiss.) Podlech					N
Acantholimon libanoticum Boiss.	I	1		I	N
Verbascum galilaeum Boiss.			1	I	E
Verbascum galilardotii Boiss.		1		I	E
Verbascum berytheum Boiss.		1		I	E
Verbascum eremobium Murb.		1		I	E
Verbascum tiberiadis Boiss.				I	E
Verbascum transjordanicum Murb.		1		I	E
Zygophyllum dumosum Boiss.		1		I	E
Phlomis viscosa Poiret					E
Phlomis platystegia Post					E
Iris palaestina Boiss.		1	1	II	E

Iris vartanii Foster					E
Iris atrofusca Baker					E
Leopoldia bicolor (Boiss.) Eig. et. Feinbrun					E
Vigna luteola (Jacq.) Benth.			1	I	N
Clematis flammula L.			1	I	N
Clematis cirrhosa L.			1	I	N
Vitex agnus-castus L.					N
Globularia arabica Jaub. & Spach					N
Hibiscus micranthus L.					N
Cynanchum acutum L.		1		I	N
Echium angustifolium Mill.			1	I	N
Heliotropium maris-mortui Zohary					E
Podonosma orientalis (L.) Feinbrun			1	I	N
Echinops philistaeus Feinbrun & Zohary					E
Iphiona maris-mortui Feinbrun					E
Heliotropium bacciferum Forssk.	1	1			N
Heliotropium arbainense Fresen.			1	I	N
Galium canum Req. ex DC.	1	1		II	N
Galium elongatum C. Presl.	1	1		II	N
Galium humifusum M. Bieb.	1	1		II	N
Crepis hierosolymitana Boiss.		1		I	E
Fagonia bruguieri DC.					N
Fagonia mollis Delile		1		I	N
Fagonia orientalis C. Presl.		1		I	N
Fagonia arabica L.					N
Nitraria retusa (Forssk.) Ascherson			1	I	N
Euphorbia hierosolymitana Boiss.					E
Ailanthus altissima (Miller) Swingle			1	I	N
Rubia tinctorum L.				I	N
Moringa peregrina (Forssk.) Fiori		1		I	N
Grewia villosa Willd.		1		I	N
Alkanna orientalis (L.) Boiss.		1	1	II	N
Alkanna strigosa Boiss. & Hohen.		1	1	II	N
Alkanna galilaea Boiss.					E
Ononis natrix L.					N
Artemisia arborescens L.	1	1		II	N
Artemisia sieberi Besser		1	1	II	N
Anvillea garcinii (Burm.f.) DC.		1		I	N
Pluchea dioscoridis (L.) DC.		1		I	N
Artemisia monosperma Delile		1		I	N
Nerium oleander L.			1	I	N
Parkinsonia aculeata L.			1	I	N
Ochradenus baccatus Delile			1	I	N
Smilax asperan L.					N
Satureja sinaica (Benth.) Briq.	1	1	1	III	E

Satureja thymbra L.	1	1	1	III	E
Salvia judaica Boiss.		1	1	II	E
Suaeda palaestina Eig. & Zohary, (*Reaumuria hirtella* Jaub. & Spach)	1		1	II	E
Teucrium lamiifolium sensu Boiss.		1	1	II	E
Salvia eigii Zohary	1			I	E
Origanum ramonense Danin					E
Majorana syriacum (L.) Kostel, (*Origanum syriaca* L.)		1	1	II	E

The percentage of plant species found in sampling and community studies: V = 100%, IV = 60.1% - 80%, III = 40.1% - 60%, II = 20.1% - 40% and I = 0.1% - 20%. N: Native and E: Endemic. Association (ASL), GI: Group one, G II: Group two, GIII: Group three, ASL 2: *Rhamano palestinae- Quercetum calliprini* ass. nova.

3.1.3. The association of Junipero phoeniceae-Pinetum halepensis ass. nova

The last community has been represented group B (ASL3), which is covered of the inventories (3, 4) in cluster, and contained Pine forest as *Pinus halepensis* Miller, *Pinus brutia* Tenore, *Pinus Pinea* L., *Pinus canariensis* C. Smith, *Pinus nigra* J. F. Arnold, *Juniperus species as Juniperus phoenicea* L. and *Cupressus* species. Events, forests growing in thermomediterranean, and dry to sub-humid environments in (Tiera Rosa, rocky or sandy ground soil) with neutral pH, which is dominated by the presence of *Juniperus phoenicea* L., *Juniperus oxycedrus* L., *Juniperus excelsa* M. Bieb., *Juniperus drupacea* Labill., *Crataegus azarolus* L., *Cupressus sempervirens* L., *Cupressus sempervirens* L. var. horizontalis Miller, *Cupressus arizonica* Greene, *Thuja occidentalis* L., and *Arbutus andrachne* L., this in turn reinforces our, that this group represents the Asian plant group and the eastern Mediterranean region, the association ***Junipero phoeniceae-Pinetum halepensis*** (Table 4: ASL3_3, 4).

Table 4. Association three: *Junipero phoeniceae-Pinetum halepensis* ass. nova.

Species				
Releve of inventories	**3**	**4**	**P**	**S**
Surface in m2 1 = 10	**530**	**600**	**R**	**T**
Cover rate %	**75**	**65**	**E**	**A**
Altitude in m.	**300**	**310**	**S**	**T**
Average height of veg. (m.)	**9**	**11**	**E**	**U**
Slope %	**5**	**20**	**N**	**S**
Orientation	**E**	**W**	**C**	
Order number	**4**	**3**	**E**	
Characteristic of association and higher units				
Juniperus phoenicea L.	4	3	IV	N
Pinus halepensis Miller	4	4	V	N
Pinus Pinea L.	1	3	III	N
Pinus canariensis C. Smith	1		I	N
Pinus brutia Tenore	1	1	II	N
Juniperus oxycedrus L.	3	2	IV	N
Companions				
Cupressus sempervirens L.	2	3	IV	N
Rhamnus palaestinus Boiss. (*Rhamnus lycioides* L.)	2	1	III	E

Cupressus sempervirens L. var .horizontalis Miller		1	I	N
Cupressus arizonica Greene		1	I	N
Thuja occidentalis L.		2	I	N
Juniperus excelsa M.Bieb.	2	2	III	N
Juniperus drupacea Labill.	2	2	III	N
Quercus look Kotschy	+		I	E
Quercus libani G.Olivier	1		I	N
Quercus calliprinos Webb. (*Quercus palestina K.*) (*Quercus coccifera* L.)	2	2	V	N
Quercus inthaburensis Decne.	1		I	N
Quercus infectoria Olivier	1		I	N
Quercus boissieri Reut.		1	I	N
Quercus cerris L.				N
Pistacia palaestina Boiss.	2	2	III	E
Pistacia khinjuk Stocks	1		I	N
Pistacia lentiscus L.	2	2	III	N
Pistacia saportae Burnat.		1	I	N
Pistacia atlantica Desf.	2	2	III	N
Pistacia terebinthus L.	1		I	N
Pistacia vera L.				N
Schinus molle L.				N
Rhus coriaria L.				N
Schinus terebinthifolius Raddi				N
Rhamnus punctata Boiss		1	I	N
Rhamnus alaternus L.		1	I	N
Zizyphus Spina-christi L. Desf.				N
Zizyphus Lotus (L.) Lam.				N
Paliurus spina-christi Miller				N
Ziziphus jujuba Miller		1	I	N
Searsia tripartita (Ucria) Moffett				N
Sageretia thea (Osbeck) M.C.Johnst.				N
Arbutus andrachne L.				E
Mespilus germanica L.				N
Crataegus azarolus L.		1	I	N
Prunus dulcis (Mill.) D.A.Webb, (*Prunus amygdalus* (L.) Batsch)	1	1	II	E
Crataegus oriana (L.) DC.				N
Sarcopoterium spinosum (L.) Spach	1	1	II	N
Pyrus syriac Boiss.				E
Crataegus monogyna Jacq.				N
Malus communis Desf.		1	I	N
Pyracantha coccinea M. Roem.	1		I	N
Prunus spinosa L.	1		I	N
Ceratonia siliqua L	2	2	III	N
Spartium junceum L.				N

Cersis siliquastrum L.				N
*Poinciana gillesii*Hook.	1		I	N
Acacia salicina Lindl.	1		I	N
Acacia cyanophylla Lindl.	1		I	N
Sophora japonica L.				N
Calicotome villosa (Poir.) Link		2	I	N
Retama raetam (Forssk.) Webb. & Berthel.	1		I	N
Genista monspessulana (L.) O.Bolós & Vigo	1		I	N
Acacia dealbata Link		1	I	N
Retama rhodorhizoides (Webb. & Berthel.)		1	I	N
Acacia radiana Savi.		1	I	N
Ficus retusa L.		1	I	N
Ficus sycomorus L.				N
Ficus cariaca L.	2	1	II	N
Ficus benjamina L.	1		I	N
Morus alba L.	1		I	N
Morus nigara L.	1		I	N
Olea europaea L.	1	2	II	N
Phillyria media L.		1	I	N
Olea oleaster Hoffmanns. & Link				N
Salix alba L.				N
Populus alba L.				N
Populus nigra L.				N
Populus euphratica Oliv.				N
Tamarix articulate Vahl.	1		I	N
Tamarix aphylla L.	1		I	N
Tamarix jordanis Boiss.		1	I	E
Tamarix palestina Bertol.	1		I	E
Tamarix nilotica (Ehrenb.) Bunge		1	I	N
Tamarix negevensis Zohary	1		I	E
Tamarix parviflora DC.		1	I	N
Tamarix tetragyna Ehrenb.		1	I	N
Tamarix gennessarensis Zohary		1	I	E
Reaumuria negevensis Zohary & Danin		1	I	E
Acer obtusifolium Sm. (*Acer syriscum* Boiss.)		1	I	E
Acer monspessulanum L.		2	I	N
Polygonum palaestinum Zohary				E
Persicaria lanigera (R.Br.) Sojak				N
Atraphaxis spinosa L.				N
Rheum palaestinum Feinbrun	1		I	E
Anagyris foetida L.	1		I	N
Lycium shawii Roem. & Schult.	2		I	N
Lycium barbarum L.		1	I	N

Lycium europaeum L.				N
Phlomis pungens Willd.				N
Phlomis brachyodon (Boiss.) Zohary				N
Phlomis chrysophylla Boiss.				N
Brachychiton populneus (Schott & Endl.) R.Br.	1		I	N
Jacaranda mimosaefolia D. Don	1		I	N
Capparis spinosa L.				N
Celtis australis L.				N
Casuarina equesitifolia L.	1		I	N
Juglans regia L.				N
Atriplex halimus L.	2		I	N
Balanites aegyptiaca (L.) Delile	1		I	N
Laurus nobilis L.		1	I	N
Pteridium aquilinum (L.) Kuhn				N
Paeonia mascula (L.) Mill.				N
Melia azedarach L.				N
Azolla filiculoides Lam.				N
Iris mesopotamica Dykes				E
Leptadenia pyrotechnica (Forssk.) Decne.				N
Styrex officinalis L.				N
Salvia fruticosa Mill.		1	I	N
Salvia officinalis L.		1	I	N
Salvia aegyptiaca L.				N
Salvia palaestina Benth.				E
Salvia aethiopis L.		1	I	N
Micromeria fruticosa (L.) Druce.				N
Micromeria cremnophila Boiss.				N
Micromeria danaensis Danin				E
Micromeria serbaliana Danin & Hedge				E
Micromeria sinaica Benth.				E
Achillea aegyptiaca L.	1		I	N
Achillea arabica Kotschy				N
Achillea millefolium L.				N
Achillea aleppica DC.				N
Artemisia abrotanum L.	1		I	N
Artemisia absinthium L.	1		I	N
Artemisia sieberi Besser.			I	N
Hedera helix L.	1		I	N
Lonicera etrusca Santi	1		I	N
Opuntia ficus indica (L.) Mill.	1		I	N
*Opuntia robusta J.*C. Wendl.	1		I	N
Opuntia ficus-barbarica A. Berger	1		I	N
Asparagus horridus L.	1		I	N
Asparagus acutifolius L.	1		I	N

Asparagus setaceus Gessop	1		I	N
Asparagus palaestinus Baker			I	E
Asparagus aphyllus L.	1		I	N
Noaea mucronata (Forssk.) Asch. & Schweinf.	1		I	N
Argyrolobium crotalarioides Jaub. & Spach				N
Astracantha bethlehemitica (Boiss.) Podlech				N
Acantholimon libanoticum Boiss.	1		I	N
Verbascum galilaeum Boiss.		1	I	E
Verbascum galilardotii Boiss.				E
Verbascum berytheum Boiss.				E
Verbascum eremobium Murb.				E
Verbascum tiberiadis Boiss.				E
Verbascum transjordanicum Murb.	1		I	E
Zygophyllum dumosum Boiss.		1	I	E
Phlomis viscosa Poiret				N
Phlomis platystegia Post				E
Iris palaestina Boiss.	1	1	II	E
Iris vartanii Foster				E
Iris atrofusca Baker				E
Leopoldia bicolor (Boiss.) Eig. Et. Feinbrun				E
Vigna luteola (Jacq.) Benth.		1	I	N
Clematis flammula L.		1	I	N
Clematis cirrhosa L.		1	I	N
Vitex agnus-castus L.				N
Globularia arabica Jaub. & Spach				N
Hibiscus micranthus L.				N
Cynanchum acutum L.		1	I	N
Echium angustifolium Mill.			1	N
Heliotropium maris-mortui Zohary				E
Podonosma orientalis (L.) Feinbrun			1	N
Echinops philistaeus Feinbrun & Zohary	1	1	II	E
Iphiona maris-mortui Feinbrun	1			E
Heliotropium bacciferum Forssk.	1	1	II	N
Heliotropium arbainense Fresen.			1	N
Galium canum Req. ex DC.	1	1	II	N
Galium elongatum C. Presl.	1	1	II	N
Galium humifusum M. Bieb.	1	1	II	N
Crepis hierosolymitana Boiss.		1	I	E
Fagonia bruguieri DC.				N
Fagonia mollis Delile				N
Fagonia orientalis C. Presl.				N
Fagonia arabica L.				N
Nitraria retusa (Forssk.) Ascherson			1	N
Euphorbia hierosolymitana Boiss.	1	1	II	E
Ailanthus altissima (Miller) Swingle		1	I	N

Rubia tinctorum L.				N
Moringa peregrina (Forssk.) Fiori		1	I	N
Grewia villosa Willd.		1	I	N
Alkanna orientalis (L.) Boiss.	1	1	II	N
Alkanna strigosa Boiss. & Hohen.	1	1	II	N
Alkanna galilaea Boiss.	1	1	II	E
Ononis natrix L.				N
Artemisia arborescens L.	1	1	II	N
Artemisia sieberi Besser	1	1	I	N
Anvillea garcinii (Burm.f.) DC.		1	I	N
Pluchea dioscoridis (L.) DC.		1	I	N
Artemisia monosperma Delile		1	I	N
Nerium oleander L.	1		I	N
Parkinsonia aculeata L.	1		I	N
Ochradenus baccatus Delile	1		I	N
Smilax asperan L.	1		I	N
Satureja sinaica (Benth.) Briq.	1		I	E
Satureja thymbra L.	1	1	II	E
Salvia judaica Boiss.	1	1	II	E
Suaeda palaestina Eig. & Zohary (*Reaumuria hirtella* Jaub. & Spach)	1	1	II	E
Teucrium lamiifolium sensu Boiss.				E
Salvia eigii Zohary				E
Origanum ramonense Danin				E
Majorana syriacum (L.) Kostel (*Origanum syriaca* L.)	1	1	II	E

The percentage of plant species found in sampling and community studies: V = 100%, IV = 60.1% - 80%, III = 40.1% - 60%, II = 20.1% - 40% and I = 0.1% - 20%. N: Native and E: Endemic. Association (ASL), GI: Group one, G II: Group two, GIII: Group three, ASL 3: *Iunipero phoeniceae- Pinetum halepensis* ass. nova.

3.3.4. Community Plant Analysis

In our analysis, the focus of our study was on plants, shrubs, steppe and very a few of herbaceous plants, among other things, according to Raunkiaer's life system, trees were the most representative layer of the spectrum of floristic, as, (86; 40.18% trees), (34; 15.88% shrubs), (51; 23.83% chamaephytes), (10; 4.67% geophytes), (16; 7.47% phanerophytes), (12; 6.54% hemicryptophytes) and (3; 1.40% perennial, helophyte and annual). After the principal component analysis, it was found that there is a separation between two groups of plants (group A and group B); (Group A: community 1 and 2) as shown in the cluster (Figure 4 and Figure 5). As a rule, the first community was included inventories (1, 2, 6, 7, 8) of the cluster and principal component analysis taken in the Al-Dawaimah and neighbouring the mountains in dry, and adapted in sub-humid ombrotype and the thermo-Mediterranean thermotype, with a various soils as rocky, loam, hard limestone, rendzinas and terra rossa. else, inventories one was mixed or existed species with most group plants as *Quercus* and *Pistacia* species. This community includes the following endemic species: *Acer obtusifolium* Sm., *Quercus look* Kotschy, accompanied by *Quercus* species as (*Quercus calliprinos* Webb. or *Quercus coccifera* L. or *Quercus palaestina* Kotschy), *Quercus look* Kotschy, *Quercus libani* G. Olivier and *Rhamnus* species as *Rhamnus lycioides* L., and distributions of life forms association are: (86; 40.18% trees), (34; 15.88% shrubs),

(51; 23.83% chamaephytes), (10; 4.67% geophytes), (16; 7.47% phanerophytes), (12; 6.54% hemicryptophytes) and (3; 1.40% perennial, helophyte and annual)., with a slope of (10-25%) & a plant coverage of 75%, elevation between (300-370) m on the Sea level, and vegetation height of (3-7m) (Table 2). Furthermore, second community was contained inventories (5, 9, 10) of the cluster and principal component analysis, and sampled from (Wadi al-Arabe & Tawazat, Khallet al-Najajreh, Wadi & Khallet Al-Khresa, Khallet Jobran, Khallet Abu Jaber, Ain-Ismael Ayesh, Yarde, Ghatashaand Wadi Al-ragate) in arid, dry, and adapted in sub-humid ombrotype and the infra-Mediterranean to thermo-Mediterranean thermotype, with a hard limestone, rendzinas and terra rossa and neutral pH, and inventor 5 was mixed species in most group plants as *Quercus* and *Pistacia* and others species. Nevertheless, this community includes the following endemic species:, *Rhamnus palaestinus* Boiss., *Acer obtusifolium* Sm., *Quercus look* Kotschy and *Pistacio palestineae* Boiss, while the distribution of life forms association are: (66; 44.89% trees), (22; 13.60% shrubs), (28; 19.04% chamaephytes) (7; 4.76% chamaephytes shrubs), (4; 2.72% phanerophytes), (7; 4.76% phanerophytes shrubs), (10; 6.80% hemicryptophytes), (5; 3.40% geophytes), with a slope of (10-30%) and a plant coverage rate of (70%), elevation between (300-320 m), and vegetation height of (3-8m) (Table 3).

The last community represents (Inventories 3 and 4) as shown in the cluster, this its includes plant varieties studied in the Al-Dawaimah region and the nearby and surrounding mountains as (Marah Bishr, Adra, the Bedouin Shieb, Ganan Al-Taseh & Al-kashklia, Wadi al-Qashab & Dawaimah centre, Wadi Al-Arab & Tawazat), the plants of this group represent the different types of coniferous forest plants that adapt in many regions of the Mediterranean basin, they are located within a dry, hot summer and temperate winter region, although these plants are located in humid and subhumid areas of ombrotype and thermosmediterranean environmental on Tiera Rosa, rocky or sandy ground soil), and accompanied species by *Juniperus* species as *Juniperus oxycedrus L.*, *Juniperus excelsa* M., and *Arbutus andrachne* L. This community includes the following endemic species: *Cupressus sempervirens* L., *Pinus halepensis* Miller, *Rhus coriaria* L., *Pistacia palaestina* Boiss. and others, and distribution of life forms association are: (64; 50% trees, (13; 7.84% shrubs, (26; 20.31% chamaephytes, (7; 5.46% chamaephytes shrubs), (4; 3.12%) geophytes, (3; 2.34% phanerophytes), (7; 4.76% phanerophytes shrubs), (6; 4.68% hemicryptophytes), with a slope of (5-20%) and a plant cover average of (70%), elevation between (310-390 m), and vegetation height of (9-11m) (Table 4).

Moreover, in this study, more than 800 species of plants were recorded, distributed among forest trees, Maquis, shrub steppe, scrubland and some of herbaceous to study flora, or know the vegetation cover that includes this region, knowing that they are forest areas that contain many different plants that have adapted in this region during the period after 1948. Consequently, it is an area of dense vegetation with different plants, where more than 45 endemic species have been spotted, therefore it is an important vital region for its unique biological diversity, given that it is considered an intermediate region between the Palestinian coast from the west, Hebron Mountains, dead Sea and the Jordan River from the east, the mountains of Syria and Lebanon from the north, the Sinai desert, the Negev, and the Red Sea in the south.

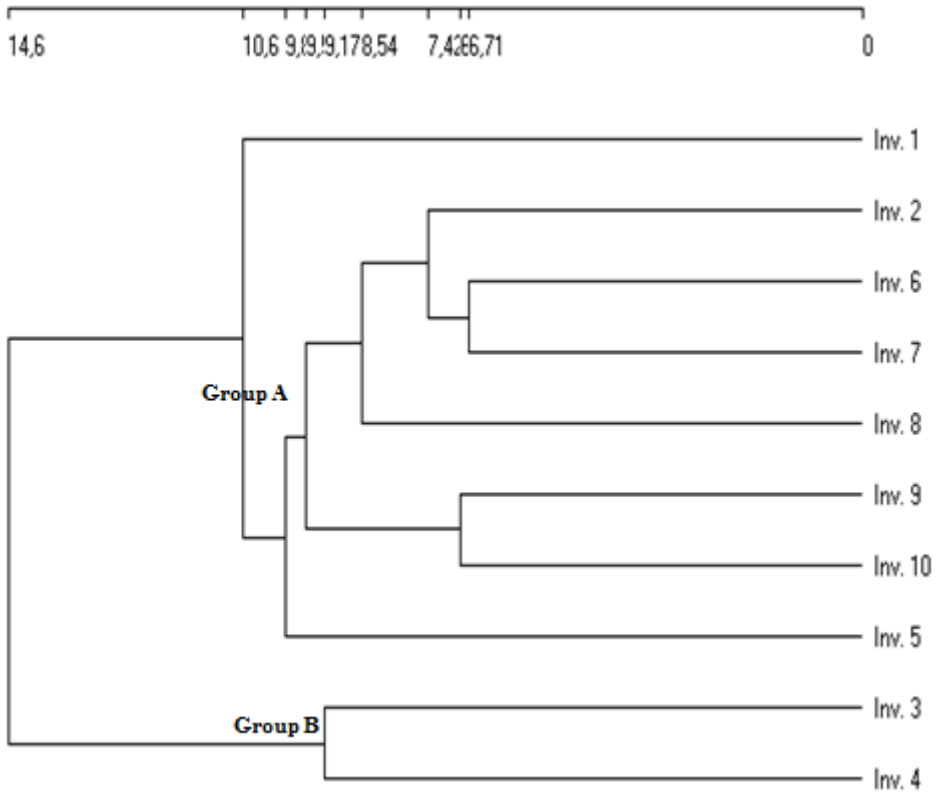

Figure 4. Ward's method cluster to analysis.

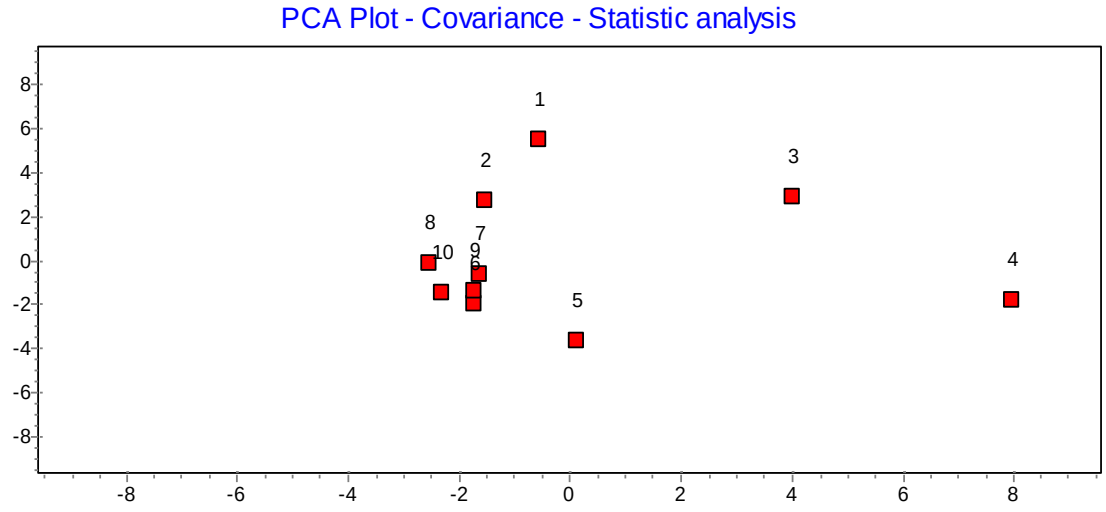

Figure 5. The principal component analysis.

Table 5. Synthetic or artificial representation of associations.

Species	AS L 1	AS L 2	AS L 3	Status	Life form	Family
Ceratonia siliqua L.	IV	III	III	N	T	Fabaceae
Pistacia lentiscus L.	V	III	III	N	T	Anacardiaceae
Pistacia palaestina Boiss.	IV	IV	III	E	T	Anacardiaceae
Pistacia khinjuk Stocks	III	III	I	N	T	Anacardiaceae

Pistacia saportae Burnat.	II	III	I	N	T	Anacardiaceae
Pistacia atlantica Desf.	II	III	III	N	T	Anacardiaceae
Pistacia terebinthus L.	II	II		N	T	Anacardiaceae
Pistacia vera L.	II	II	I	N	T	Anacardiaceae
Schinus molle L.	II	II		N	T	Anacardiaceae
Rhus coriaria L.	I	II		N	T	Anacardiaceae
Schinus terebinthifolius Raddi		II		N	T	Anacardiaceae
Quercus calliprinos Webb. (*Quercus coccifera* L.) (*Quercus palaestina* K.)	V	V	II	N	T	Fagaceae
Quercus look Kotschy	I	I	I	E	T	Fagaceae
Quercus libani G.Olivier	I	I	I	N	T	Fagaceae
Quercus inthaburensis Decne.	II	II	I	N	T	Fagaceae
Quercus rotundifolia Lam.	II	II	I	N	T	Fagaceae
Quercus infectoria Olivier	II	II	I	N	T	Fagaceae
Quercus boissieri Reut.	II	III	I	N	T	Fagaceae
Quercus cerris L.	II	II	I	N	T	Fagaceae
Rhamnus punctata Boiss	III	IV		N	Phan	Rhamnaceae
Rhamnus palaestinus Boiss. (*Rhamnus lycioides* L.)	III	IV	II	E	Phan	Rhamnaceae
Rhamnus alaternus L.	I	II	I	N	T	Rhamnaceae
Zizyphus Spina-christi L. Desf.		II		N	T	Rhamnaceae
Zizyphus Lotus (L.) Lam.		II		N	Sh	Rhamnaceae
Paliurus spina-christi Miller	I	II	I	N	Sh	Rhamnaceae
Ziziphus jujuba Miller	I	II	I	N	Sh	Rhamnaceae
Searsia tripartita (Ucria) Moffett		I		N	Phan	Rhamnaceae
Sageretia thea (Osbeck) M.C.Johnst.		I		N	Phan	Rhamnaceae
Pinus halepensis Miller	I	II	V	N	T	Pinaceae
Pinus Pinea L.	I	I	III	N	T	Pinaceae
Pinus canariensis C. Smith		I	II	N	T	Pinaceae
Pinus brutia Tenore	I		II	N	T	Pinaceae
Pinus nigra J.F. Arnold	I		I	N	T	Cupressaceae
Cupressus sempervirens L.			IV	E	T	Cupressaceae
Cupressus sempervirens L. var .horizontalis Miller			I	N	T	Cupressaceae
Cupressus arizonica Greene		I	I	N	T	Cupressaceae
Thuja occidentalis L.			I	N	T	Cupressaceae
Juniperus oxycedrus L.	I	I	IV	N	T	Cupressaceae
Juniperus phoenicea L.	I	I	IV	N	T	Cupressaceae
Juniperus excelsa M.Bieb.		I	III	N	T	Cupressaceae
Juniperus drupacea Labill.	I	I	III	N	T	Cupressaceae
Mespilus germanica L.	I	I	I	N	Sh	Rosaceae
Crataegus azarolus L.		I		N	T	Rosaceae
Amygdalus communis L. *Prunus dulcis* (Mill.) D. A. Webb.			I	I I E	T	Rosaceae
Crataegus oriana (L.) DC		I		N	Cham	Rosaceae
Sarcopoterium spinosum (L.) Spach	III	III	II	N	Cham	Rosaceae
Pyrus syriac Boiss.	I	I		E	T	Rosaceae

Crataegus monogyna Jacq.		I	I	N	T	Rosaceae
Malus communis Desf.	I	I	I	N	Sh	Rosaceae
Pyracantha coccinea M. Roem.	I	I	I	N	Sh	Rosaceae
Prunus spinosa L.	I	I	I	N	Sh	Rosaceae
Spartium junceum L.	I	I	III	N	Sh	Fabaceae
Cersis siliquastrum L.	III	I		N	T	Fabaceae
*Poinciana gillesii*Hook.	III	I	I	N	Sh	Fabaceae
Acacia salicina Lindl.	III		II	N	T	Fabaceae
Acacia cyanophylla Lindl.	III	I	I	N	T	Fabaceae
Sophora japonica L.	III		I	N	Sh	Fabaceae
Calicotome villosa (Poir.) Link	II			N	Sh	Fabaceae
Retama raetam (Forssk.) Webb & Berthel.	III	I	I	N	T	Fabaceae
Genista monspessulana (L.) O.Bolós & Vigo	III	I	I	N	T	Fabaceae
Acacia dealbata Link	III	I	I	N	T	Fabaceae
Retama rhodorhizoides (Webb & Berthel.)	III		I	N	T	Fabaceae
Acacia radiana Savi.	III	I	I	N	T	Fabaceae
Ficus retusa L.	III	I	I	N	T	Mimosaceae
Ficus sycomorus L.	III	I	I	N	T	Mimosaceae
Ficus cariaca L.	I			N	T	Mimosaceae
Ficus benjamina L.		II	I	N	T	Mimosaceae
Morus alba L.	I	I	I	N	T	Mimosaceae
Morus nigara L.	I	I	I	N	T	Mimosaceae
Olea europaea L.	III	I	I	N	T	Oleaceae
Phillyria media L.	I	I	I	N	T	Oleaceae
Olea oleaster Hoffmanns. & Link	I	I	I	N	T	Oleaceae
Salix alba L.		I		N	T	Salicaceae
Populus alba L.	I	I		N	T	Salicaceae
Populus nigra L.	I	I		N	T	Salicaceae
Populus euphratica Oliv.		I		N	T	Salicaceae
Tamarix articulate Vahl.	I	I		N	T	Tamaricaceae
Tamarix aphylla L.			I	N	T	Tamaricaceae
Tamarix jordanis Boiss.			I	E	T	Tamaricaceae
Tamarix palestina Bertol.			I	E	T	Tamaricaceae
Tamarix nilotica (Ehrenb.) Bunge		I	I	N	T	Tamaricaceae
Tamarix negevensis Zohary			I	E	T	Tamaricaceae
Tamarix parviflora DC.			I	N	T	Tamaricaceae
Tamarix tetragyna Ehrenb.			I	N	T	Tamaricaceae
Tamarix gennessarensis Zohary			I	E	T	Tamaricaceae
Reaumuria negevensis Zohary & Danin				I E	T	Tamaricaceae
Acer obtusifolium Sm. or *Acer syriscum* Boiss.	III	II	I	E	Phan	Aceracea
Acer monspessulanum L.		I	I	N	Phan	Aceracea
Polygonum palaestinum Zohary		II		E	Hem	Polygonaceae
Persicaria lanigera (R.Br.) Sojak		I		N	Hem	Polygonaceae

Atraphaxis spinosa L.		I		N	Cham	Polygonaceae
Rheum palaestinum Feinbrun		I		E	Hem	Polygonaceae
Hypecoum pendulum L.			I	N	Annual	Papaveraceae
Anagyris foetida L.			I	N	Phan	Papaveraceae
Lycium shawii Roem. & Schult.			I	N	Sh	Solanaceae
Lycium barbarum L.		I		N	Sh	Solanaceae
Lycium europaeum L.	I			N	Sh	Solanaceae
Phlomis pungens Willd	I			N	Sh	Lamiaceae
Phlomis brachyodon (Boiss.) Zohary	I			E	Sh	Lamiaceae
Phlomis chrysophylla Boiss.	I			N	Cham	Lamiaceae
Brachychiton populneus (Schott & Endl.) R.Br.	I	I	I	N	T	Malvaceae
Jacaranda mimosaefolia D. Don	I	I	I	N	T	Bignoniaceae
Capparis spinosa L.	I	I	I	N	Sh	Capparaceae
Celtis australis L.	I			N	T	Ulmaceae
Casuarina equesitifolia L.		I	I	N	T	Casuarenaceae
Juglans regia L.		I		N	T	Juglandaceae
Atriplex halimus L.		I		N	Sh	Amaranthaceae
Arbutus andrachne L.	II	II	IV	E	T	Ericaceae
Balanites aegyptiaca (L.) Delile	I			N	T	Zygophyllaceae
Laurus nobilis L.	I	I		N	T	Lauraceae
Pteridium aquilinum (L.) Kuhn	I			N	Hem	Hypolepidaceae
Paeonia mascula (L.) Mill.	I			N	Geo	Paeoniaceae
Melia azedarach L.	I			N	T	Meliaceae
Azolla filiculoides Lam.	I			N	Helophyte	Azollaceae
Iris mesopotamica Dykes	I			N	Geo	Iridaceae
Leptadenia pyrotechnica (Forssk.) Decne.	I			N	Phan	Asclepiadaceae
Styrex officinalis L.	I	I		N	Sh	Styracaceae
Salvia fruticosa Mill.	I	I	I	N	Cham	Lamiaceae
Salvia officinalis L.	I	I	I	N	Cham	Lamiaceae
Salvia aegyptiaca L.		I		N	Cham	Lamiaceae
Salvia palaestina Benth.	I	I		E	Cham	Lamiaceae
Salvia aethiopis L.			I	N	Cham	Lamiaceae
Micromeria fruticosa (L.) Druce.	I			N	Cham	Lamiaceae
Micromeria cremnophila Boiss.	I	I		N	Cham	Lamiaceae
Micromeria danaensis Danin	I			E	Cham	Lamiaceae
Micromeria serbaliana Danin & Hedge		I		E	Cham	Lamiaceae
Micromeria sinaica Benth.	I			E	Cham	Lamiaceae
Achillea aegyptiaca L.	I	I	I	N	Cham	Asteraceae
Achillea arabica Kotschy	I			N	Hem	Asteraceae
Achillea millefolium L.	I			N	Cham	Asteraceae
Achillea aleppica DC.	I			N	Cham	Asteraceae
Artemisia abrotanum L.	I	I	I	N	Cham	Asteraceae

Artemisia absinthium L.	I	I	I	N	Cham	Asteraceae
Artemisia sieberi Besser.	I	I		N	Cham	Asteraceae
Hedera helix L.	I	II		N	T	Araliaceae
Lonicera etrusca Santi	I			N	T	Caprifoliaceae
Opuntia ficus indica (L.) Miller	I			N	T	Cactaceae
Opuntia robusta J.C. Wendl.	I			N	T	Cactaceae
Opuntia ficus-barbarica A. Berger	I			N	T	Cactaceae
Asparagus horridus L.	I			N	Geo	Liliaceae
Asparagus acutifolius L.	I			N	Geo	Liliaceae
Asparagus setaceus Gessop	I			N	Geo	Liliaceae
Asparagus palaestinus Baker		I		E	Geo	Liliaceae
Asparagus aphyllus L.	I	I		N	Sh	Asparagaceae
Noaea mucronata (Forssk.) Asch. & Schweinf.	I	I		N	Cham	Chenopodiaceae
Argyrolobium crotalarioides Jaub. & Spach	I	I		N	Cham	Leguminosae
Astragalus bethlehemiticus Boiss.	I	I		N	Cham	Leguminosae
Acantholimon libanoticum Boiss.	I	I		N	Cham	plumbaginaceae
Verbascum galilaeum Boiss.	II	I	I	E	Hem	Scrophulariaceae
Verbascum galilardotii Boiss.	II	I		E	Hem	Scrophulariaceae
Verbascum berytheum Boiss.	II	I		E	Hem	Scrophulariaceae
Verbascum eremobium Murb.	II	I		E	Hem	Scrophulariaceae
Verbascum tiberiadis Boiss.	I	I		E	Hem	Scrophulariaceae
Verbascum transjordanicum Murb.	II	I	I	E	Hem	Scrophulariaceae
Zygophyllum dumosum Boiss.	I	I	I	E	Cham	Zygophyllaceae
Phlomis viscosa Poiret	I			N	Cham	Labiatae/Lamiaceae
Phlomis platystegia Post	I			E	Cham	Labiatae/Lamiaceae
Iris palaestina Boiss.	III	II	II	E	Geo	Iridaceae
Iris vartanii Foster	I			E	Geo	Iridaceae
Iris atrofusca Baker	I			E	Geo	Iridaceae
Leopoldia bicolor (Boiss.) Eig et Feinbrun	I			E	Geo	Liliaceae
Vigna luteola (Jacq.) Benth.	II	I	I	N	Cham	Papilionaceae
Clematis flammula L.	II	I	I	N	V,Phan	Anunculaceae
Clematis cirrhosa L.	II	I	I	N	V,Phan	Anunculaceae
Vitex agnus-castus L.				N	Cham	Verbenaceae
Globularia arabica Jaub. & Spach				N	Cham	Plantaginaceae
Hibiscus micranthus L.				N	Cham	Malvaceae
Cynanchum acutum L.	II	I	I	N	Phan., sh, climber	Apocynaceae

Echium angustifolium Mill.	I	I	1	N	Cham	Boraginaceae
Heliotropium maris-mortui Zohary				E	Sh	Boraginaceae
Podonosma orientalis (L.) Feinbrun	I	I	1	N	Cham	Boraginaceae
Echinops philistaeus Feinbrun & Zohary	III		II	E	Cham	Compositae
Iphiona maris-mortui Feinbrun	I			E	Cham	Compositae
Heliotropium bacciferum Forssk.	II		II	N	Sh, Cham	Boraginaceae
Heliotropium arbainense Fresen.	I	I	1	N	Sh, Cham	Boraginaceae
Galium canum Req. ex DC.	II	II	II	N	Sh, Cham	Rubiaceae
Galium elongatum C. Presl.	II	II	II	N	Hem	Rubiaceae
Galium humifusum M. Bieb.	II	II	II	N	Hem	Rubiaceae
Crepis hierosolymitana Boiss.	I	I	I	E	Cham	Compositae
Fagonia bruguieri DC.	I			N	Sh	Zygophyllaceae
Fagonia mollis Delile	II	I		N	Sh	Zygophyllaceae
Fagonia orientalis C. Presl.	II	I		N	Sh	Zygophyllaceae
Fagonia arabica L.	I			N	Sh	Zygophyllaceae
Nitraria retusa (Forssk.) Ascherson	II	I	1	N	Phan,Sh	Zygophyllaceae
Euphorbia hierosolymitana Boiss.	II		II	E	Sh	Euphorbiaceae
Ailanthus altissima (Miller) Swingle	II	I	I	N	Tree	Simarubaceae
Rubia tinctorum L.	I	I		N	Phan, sh,climber	Rubiaceae
Moringa peregrina (Forssk.) Fiori	I	I	I	N	T	Moringaceae
Grewia villosa Willd.	I	I	I	N	Sh	Tiliaceae
Alkanna orientalis (L.) Boiss.	II	II	II	N	Cham	Boraginaceae
Alkanna strigosa Boiss. & Hohen.	II	II	II	N	Cham	Boraginaceae
Alkanna galilaea Boiss.	I		II	E	Cham	Boraginaceae
Ononis natrix L.				N	Cham	Fabaceae
Artemisia arborescens L.	II	II	II	N	Cham	Compositae
Artemisia sieberi Besser	II	II	I	N	Cham	Compositae
Anvillea garcinii (Burm.f.) DC.	I	I	I	N	Cham	Compositae
Pluchea dioscoridis (L.) DC.	I	I	I	N	Phan, Sh	Compositae
Artemisia monosperma Delile	I	I	I	N	Cham	Compositae
Nerium oleander L.	I	I	I	N	Phan, Sh	Apocynaceae
Parkinsonia aculeata L.	I	I	I	N	Phan, Sh	Caesalpiniaceae
Ochradenus baccatus Delile	I	I	I	N	Phan, Sh	Resedaceae
Smilax asperan L.	I		I	N	Phan, Sh	Liliaceae
Satureja sinaica (Benth.) Briq.	II	III	I	E	Cham, s-sh	Labiatae / Lamiaceae
Satureja thymbra L.	II	III	II	E	Cham, s-sh	Labiatae / Lamiaceae
Salvia judaica Boiss.	II	II	II	E	Hem	Labiatae / Lamiaceae
Suaeda palaestina Eig. & Zohary (*Reaumuria hirtella* Jaub. & Spach)	II	II	II	E	Perennial shrublet	Tamaricaceae
Teucrium lamiifolium sensu Boiss.	I	II		E	Sh	Labiatae / Lamiaceae

Salvia eigii Zohary	II	I		E	Cham	Labiatae / Lamiaceae
Origanum ramonense Danin	II			E	Cham	Labiatae / Lamiaceae
Majorana syriacum (L.) Kostel (*Origanum syriaca* L.)	III	II	II	E	Cham	Labiatae / Lamiaceae

The percentage of plant species found in sampling and community studies: V = 100%, IV = 60.1% - 80%, III = 40.1% - 60%, II = 20.1% - 40% and I = 0.1% - 20%. N: Native and E: Endemic, Sh: Shrubs, Cham: Chamaephytes, Geo: geophytes, Phan: phanerophytes, Herb: herbaceous, Hem: Hemhemicryptophytes. Association (ASL), GI: Group one, G II: Group two, GIII: Group three, ASL 1: *Ceratonio siliquae-Pistacetum lentisci* ass. nova., ASL 2: *Rhamnus palaestinea- Quercetum calliprini* ass. nova. and ASL 3: *Junipero phoeniceae- Pinnetum halepensis* ass. nova.

Moreover, the high proportion of *Ceratonia siliqua* L., *Pistacia palaestina* Boiss., *Pistacia lentiscus* L., and *Rhamnus lycioides* (*Rhamnus palaestina* Boiss.), *Rhamnus alaternus* L., allows us to include the communities in dry-xeric shrublands form the terrestrial biome, that covering 19% of earth's land surface area in the world in the order *Pistachio lentisci - Rhamnetalia alaterni* (Rivas-Martínez, S., 1975), and in the alliance, *Oleo sylvestris-Ceratonion siliquae* Br.-Bl. ex Guinochet & Drouineau 1944, whist we include the forests growing in dry to sub-humid environments as *Quercus spp*. in the order *Rhamno lycioidis-Quercion cocciferae* Rivas Goday *ex* Rivas-Martinez 1975 (Rivas-Martínez, S., 1975), and class *Quercetalia ilicis* Br.-Bl. ex Molinier (Rivas-Martínez, S. et al., 2002; Molinier, R., 1934, 1968). Nevertheless, in the community, we obtained high frequency of *Pinus spp*. as *Pinus halepensis* Miller, & *Juniperus oxycedrus* L., *Juniperus excelsa* M. Bieb., *Juniperus drupacea* Labill., *Cupressus sempervirens* L., *Cupressus arizonica* Greene, *Arbutus andrachne* L. species in dry, subhumid and humid region in order *Pinetalia halepensis* Biondi et al. (2014) and class *Junipero phoeniceae-Pinon acutisquamae* A.V. Pérez et Cabezudo in A.V. Pérez et al. 1988 corr. Rivas-Mart. et al. 2002 nom. invers. Propos (Rivas-Mart. et al. 2002).

Syntaxonomical performance of these associations is shown:

Quercetalia ilicis Br.-Bl. ex Molinier (Rivas-Martínez S. et al. 2002; Molinier, R. 1934, 1968).

Rhamno lycioidis-Quercion cocciferae Rivas Goday *ex* Rivas-Martinez 1975

1. Rhamnus palaestinae- Quercetum calliprini ass. nova.

Pistachio lentisci -Rhamnetalia alaterni Rivas-Martínez 1975

2. Ceratonio siliquae -Pistacetum lentisci ass. nova.

Juniperon phoeniceae-Pinon acutisquamae A.V. Pérez et Cabezudo in A.V. Pérez et al. 1988 corr. Rivas-Mart. et al. 2002.

Pinetalia halepensis Biondi et al. 2014

3. Junipero phoeniceae- Pino halepensis ass. nova.

And eight new botanical societies have been described by Ighbareyeh (Ighbareyeh et al., 2014, 2014c):

*Pistacio palaestinae-Quercetum lokii**

Capparido sinaicae-Ceratonietum siliquae

*Cerasus microcarpae-Quercetum ithaburensis**

*Pyro siriacae-Abietetum cilicicae**

Abio ciliciae-Ceratonietum siliquae

Periploco aphylli-Pinetum halepensis

Cytisopsis pseudocytiso-Tamaricetum tetragynae

Crataego sinaicae-Tamaricetum jordanii.

In another study carried out by Ighbareyeh in 2018 (Ighbareyeh et al., 2018a), three new plant groups were described:

Pino halepensis -Quercetum lookii*

Pistacio palestinae -Ceratonietum siliquae*

Quercus libanii -Tamaricetum palestineae*

* Represents the plant communities that grow and adapt in the areas where olives are grown.

Also, three associations idenetified in 2020 by Jehad M. H. Ighbareyeh, Asma, A. A. Suliemieh, A. Cano-Ortiz & E.Cano:

Pistacio lentisci-Quercetum lokii Ighbareyeb

Ceratonio siliquae-Quercetum callipinii

Pino halepensis-Curessetum sempervirentis

with three alliance as Pistacio-Quercion lokii, Ceratonia siliquae -Quercion calliprinae and Pino halepensis-Cupression sempervirenti.

4. Conclusion

Al-Dawaimah has been located in an infra-thermomediterranean thermotype, and dry of ombrotype. Al-Dawaimah area represents a unique model of plants, forests (Forests, Maquis, oak, steppe, shrublands, scrubland and many herbaceous species), a dense vegetation and biodiversity, which have 800 species, of which 45 are endemic species. Flora analysis detect that 20.02% of species are endemic, of 214 species of plants as forests, Maquis, steppes and high shrub lands which has been studies in the study area. In the other side, the 10 analysed grids clearly divided into three different groups, each of them, represent natural vegetation scope, and three new plant groups were specified are:

Ceratonion siliquae -Pistacetum lentisci*ass. nova

Rhamnus palaestinae- Quercetum calliprini* ass. nova

Junipero phoeniceae-Pinetum halepensis ass. nova.

*Represents the plant communities that grow and adapt in the areas where olives are grown.

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