

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

VILLANUEVA DE ALCARDETE (ESP TOLEDO) Altitude: 725 m.

Latitude: 39°40'N Longitude: 3°1'W
 Temperature observation period.: 1952-1965 (14)
 Rainfall observation period....: 1952-1965 (14)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	5.60	11.90	-0.80	18.50	-6.50	40.0	10.86
Feb.	6.90	13.90	-0.20	21.20	-7.20	43.0	14.71
Mar.	10.40	17.40	3.40	25.60	-3.40	49.0	33.89
Apr.	12.30	20.20	4.40	27.10	-0.50	50.0	47.04
May.	17.40	25.60	9.20	31.90	3.50	44.0	88.67
Jun.	20.40	28.60	12.20	35.90	6.40	35.0	113.62
Jul.	24.80	33.80	15.90	37.90	10.70	11.0	154.99
Aug.	24.40	33.40	15.50	37.70	11.10	11.0	140.52
Sep.	20.40	28.30	12.50	33.70	7.70	40.0	94.54
Oct.	14.60	21.80	7.50	27.80	1.60	47.0	52.69
Nov.	9.10	15.50	2.70	20.80	-1.70	48.0	22.33
Dec.	6.40	12.70	0.20	17.50	-4.10	59.0	12.81
Year	14.39	21.93	6.87	27.97	1.47	477	786.67

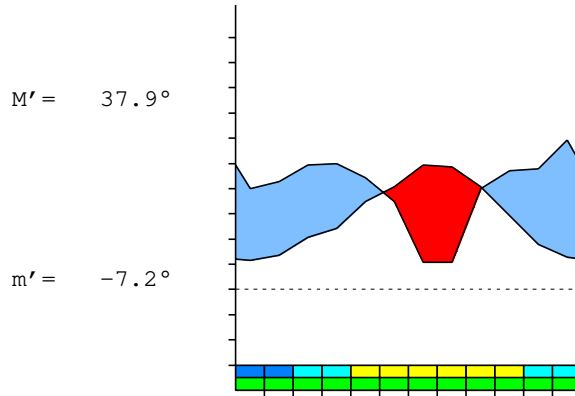
BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	255
Compensated thermicity index.....(Itc):	261
Simple continentality index.....(Ic):	19.2
Diurnality index.....(Id):	17.9
Annual ombrothermic index.....(Io):	2.76
Monthly estival ombrothermic index.....(Ios1):	0.44
Bimonthly estival ombrothermic index.....(Ios2):	0.45
Threemonthly estival ombrothermic index.....(Ios3):	0.82
Fourmonthly estival ombrothermic index.....(Ios4):	1.16
Annual ombro-evaporation index.....(Ioe):	0.65
Annual positive temperature.....(Tp):	1727
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	696
Positive precipitation.....(Pp):	477

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	6	2	2	2	0

Latitudinal Belt...: Low eutemperate
 Continentality.....: Oceanic - High Semicontinental
 Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC
 Bioclimatic Belt...: UPPER MESOMEDITERRANEAN LOW DRY

VILLANUEVA DE ALCARDETE (ESP TOLEDO) 725 m
 P= 477 39° 40'N 3° 1'W 14/14 y.
 T= 14.4° Ic= 19.2 Tp= 1727 Tn= 0
 m= -0.8° M= 11.9° Itc= 261 Io= 2.8



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 UPPER MESOMEDITERRANEAN LOW DRY

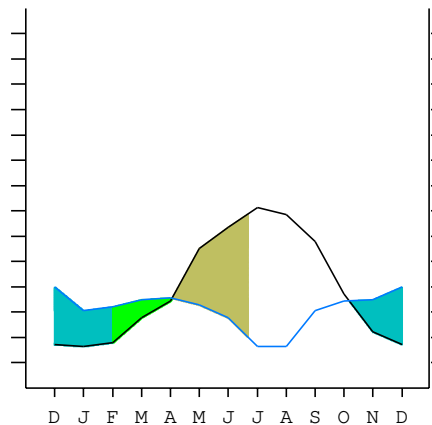
WATER INDEX CARD VILLANUEVA DE ALCARDETE (ESP TOLEDO)
 Altitude: 725 m. Latitude: 39° 40'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	5.6	11	40	28	100	11	0	1	1	2.6
Feb.	6.9	15	43	0	100	15	0	28	14	1.9
Mar.	10.4	34	49	0	100	34	0	15	15	0.4
Apr.	12.3	47	50	0	100	47	0	3	9	0.0
May.	17.4	89	44	-45	55	89	0	0	4	-0.5
Jun.	20.4	114	35	-55	0	90	23	0	2	-0.6
Jul.	24.8	155	11	0	0	11	144	0	1	-0.9
Aug.	24.4	141	11	0	0	11	130	0	1	-0.9
Sep.	20.4	95	40	0	0	40	55	0	0	-0.5
Oct.	14.6	53	47	0	0	47	6	0	0	-0.1
Nov.	9.1	22	48	26	26	22	0	0	0	1.1
Dec.	6.4	13	59	46	72	13	0	0	0	3.6
Year	14.4	787	477	*	*	430	357	47	47	*

R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coeficient DF = Deficit SP = Superavit

VILLANUEVA DE ALCARDETE (ESP TOLEDO)
39°40'N 3°1'W 725 m 14/14 y.
 T= 14.4 Ic= 19.2 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= -0.8 Tp= 1727 UPPER MESOMEDITERRANEAN
 M= 11.9 Tn= 0 LOW DRY
 M' = 37.9 Itc= 261
 m' = -7.2 Io= 2.8
 P= 477 mm —
 PE= 787 mm —

Imbibing	6 Oct.
Saturation	29 Jan.
Reserve Use	2 Apr.
Deficit	22 Jun.



VILLANUEVA DE ALCARDETE (ESP TOLEDO)

Latitude: 39°40'N Longitude: 3°1'W Altitude: 725 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1b]
 + Type: B. Oceanic
 + Subtype: 1. Semicontinental
 + Variant: b. High

Thermic types [B1.B4]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Low eutemperate
 + Thermic type: B. Temperate
 + Thermic subtype: 4. Temperate

Bioclimatic types [B8.3a.5b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant ..:
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Mehc.Mme.Dry

VILLANUEVA DE ALCARDETE (ESP TOLEDO)

Latitude: 39°40'N Longitude: 3°1'W Altitude: 725 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 188
 Coldest semester of the year.....(Psw): 289
 Warmest four months period of the year.....(Pcm1): 97
 Following warmest four months period.....(Pcm2): 194
 Positive precipitation dryest 3 months.....(Ppd): 57
 Positive precipitation dryest 2 months.....(Ppd2): 22
 Positive precipitation dryest 1 month.....(Ppd1): 11
 Positive precipitation warmest 3 months.....(Pps): 57
 Positive precipitation warmest 2 months.....(Pps2): 22
 Positive precipitation warmest 1 month.....(Pps1): 11
 Positive precipitation coldest 3 months.....(Ppw): 142
 Positive precipitation coldest 2 months.....(Ppw2): 99
 Positive precipitation coldest 1 month.....(Ppw1): 40

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	142	143	57	135

Seasonal rainfall rhythms: P > W > F > S

VILLANUEVA DE ALCARDETE (ESP TOLEDO)

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 24.8
 Average coldest month [T].....(Tmin): 5.6
 Maximum temp. warmest month [M].....(Tmmax): 33.8
 Minimum temp. coldest month [m].....(Tmmin): -0.8
 Absolute Max.temp. warmest month [M'].....(Tamax): 37.9
 Absolute Min.temp. coldest month [m'].....(Tamin): -7.2
 First warmest contrasted month [M].....(Tcmax): 33.8 (7)
 First coldest contrasted month [m].....(Tcmin): 15.9 (7)
 Estival temperature.....(Ts): 696
 Positive temperature dryest 3 months.....(Tpd): 696
 Positive temperature dryest 2 months.....(Tpd2): 492
 Positive temperature dryest 1 month.....(Tpd1): 248
 Positive temperature warmest 3 months.....(Tps): 696
 Positive temperature warmest 2 months.....(Tps2): 492
 Positive temperature warmest 1 month.....(Tps1): 248
 Positive temperature coldest 3 months.....(Tpw): 189
 Positive temperature coldest 2 months.....(Tpw2): 120
 Positive temperature coldest 1 month.....(Tpw1): 56

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SEASONAL PARAMETERS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Warmest semester...(Sms)					o	o	o	o	o	o		
Dryest semester....(Smd)					o	o	o	o	o	o		
Warmest 4 months...(Cm1)						o	o	o	o			
Dryest 4 months....(Cmd)						o	o	o	o			
Vegetation Activity(Pav)	o	o	o	o	o	o	o	o	o	o	o	o
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)	o	o										
Pregelid.....[m' <=0] (Pf)	o	o	o	o							o	o
Agelid.....[m' > 0] (Pf)					o	o	o	o	o	o		
HiperAgelid..[all>0] (Pf)					o	o	o	o	o	o		

VILLANUEVA DE ALCARDETE (ESP TOLEDO)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.65
 Mediterranean index of July.[PE/P].....(Im1): 14.09
 Mediterranean index of July & August.....(Im2): 13.43
 Mediterranean index of June, July & August....(Im3): 7.18

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	590	400	430	490	500	440	350	110	110	400	470	480
Tp	64	56	69	104	123	174	204	248	244	204	146	91
Io (Iom)	9.22	7.14	6.23	4.71	4.07	2.53	1.72	0.44	0.45	1.96	3.22	5.27
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1420 / 189			1430 / 401			570 / 696			1350 / 441		
Io (Iot)	7.513			3.566			0.819			3.061		
Semesters	December-May						June-November					
Pp(x10)/Tp	2850 / 590						1920 / 1137					
Io (Iosm)	4.831						1.689					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 4770/1727=2.76 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	590	400	430	490	500	440	350	110	110	400	470	480
Tp [T*10]	64	56	69	104	123	174	204	248	244	204	146	91
Iom [Pp/Tp]	922	714	623	471	407	253	172	44	45	196	322	527
Avm [200-Iom]	***	***	***	***	***	***	28	156	155	4	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1420 / 189			1430 / 401			570 / 696			1350 / 441		
Iot [Pp/Tp]	751			357			82			306		
Avs E[Avm<200]	***			***			339			***		
Strong lower arid [2]						Weak upper arid [1]						
Weak upper semiarid [2]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 19.20
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	30.73
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	28.82
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.35
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	33.14
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	19.56
+ Semiarid -mediterranean- (20>Ia>15)	
I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)]	41.78
+ Semiarid (50>Q>30)	
I of Dantin & Revenga (1940) [DR=100*T/P]	3.02
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE]	0.61
+ Subhumid - dry (0.65>I>0.5)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P].....	7.30
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.24	0.24	0.25	0.24	0.18	0.13	0.03	0.03	0.15	0.21	0.25	0.35
T-E ratio	2.52	3.11	4.68	5.54	7.83	9.18	11.16	10.98	9.18	6.57	4.10	2.88
Precipitation-effectiveness: 23.04						Temperature-efficiency						77.71
Moisture Index [MI=100*(P-PE)/PE]	-39.36											
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]	45.38											
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]	6.01											
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE	786.67											
+ Second mesothermic (712<PE<855)												

