

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

COIN (ESP MALAGA)

Altitude: 209 m.

Latitude: 36°39'N Longitude: 4°45'W

Temperature observation period.: 1974-1989 (16)

Rainfall observation period....: 1951-1989 (39)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	11.70	17.10	6.30	23.30	1.50	82.7	23.43
Feb.	12.60	18.20	7.00	24.70	2.60	74.8	26.76
Mar.	14.60	20.80	8.30	27.60	4.60	76.0	43.26
Apr.	15.80	22.00	9.70	28.40	5.80	43.5	53.91
May.	18.70	25.00	12.40	32.00	8.40	25.6	83.12
Jun.	22.90	29.60	16.20	36.40	12.20	10.4	124.52
Jul.	26.20	33.50	19.00	41.30	15.00	2.1	164.64
Aug.	26.50	33.20	19.80	39.60	16.90	7.4	157.57
Sep.	24.10	30.80	17.40	36.20	14.10	14.9	115.22
Oct.	19.60	25.60	13.60	32.80	9.00	71.4	72.44
Nov.	15.50	20.80	10.20	27.10	5.30	112.3	40.12
Dec.	13.00	18.40	7.70	24.10	2.90	94.2	27.78
Year	18.43	24.58	12.30	31.13	8.19	615	932.77

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	418
Compensated thermicity index.....(Itc):	418
Simple continentality index.....(Ic):	14.8
Diurnality index.....(Id):	14.5
Annual ombrothermic index.....(Io):	2.78
Monthly estival ombrothermic index.....(Ios1):	0.08
Bimonthly estival ombrothermic index.....(Ios2):	0.18
Threemonthly estival ombrothermic index.....(Ios3):	0.26
Fourmonthly estival ombrothermic index.....(Ios4):	0.48
Annual ombro-evaporation index.....(Ioe):	0.27
Annual positive temperature.....(Tp):	2212
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	756
Positive precipitation.....(Pp):	615

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	5	2	1	4	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - High Euoceanic

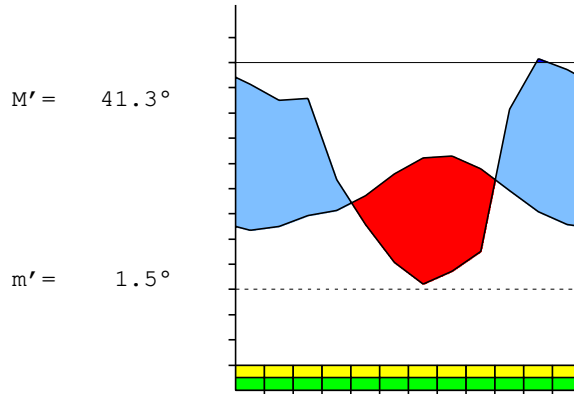
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: LOW THERMOMEDITERRANEAN LOW DRY

COIN (ESP MALAGA)

209 m

P= 615 36° 39'N 4° 45'W 16/39 y.
 T= 18.4° Ic= 14.8 Tp= 2212 Tn= 0
 m= 6.3° M= 17.1° Itc= 418 Io= 2.8



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 LOW THERMOMEDITERRANEAN LOW DRY

WATER INDEX CARD
 Altitude: 209 m.

COIN (ESP MALAGA)
 Latitude: 36° 39'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	11.7	23	83	0	100	23	0	59	39	2.5
Feb.	12.6	27	75	0	100	27	0	48	44	1.7
Mar.	14.6	43	76	0	100	43	0	33	38	0.7
Apr.	15.8	54	44	-10	90	54	0	0	19	-0.1
May.	18.7	83	26	-58	32	83	0	0	10	-0.6
Jun.	22.9	125	10	-32	0	42	82	0	5	-0.9
Jul.	26.2	165	2	0	0	2	163	0	2	-0.9
Aug.	26.5	158	7	0	0	7	150	0	1	-0.9
Sep.	24.1	115	15	0	0	15	100	0	1	-0.8
Oct.	19.6	72	71	0	0	71	1	0	0	0.0
Nov.	15.5	40	112	72	72	40	0	0	0	1.7
Dec.	13.0	28	94	28	100	28	0	39	19	2.3
Year	18.4	933	615	*	*	437	496	179	179	*

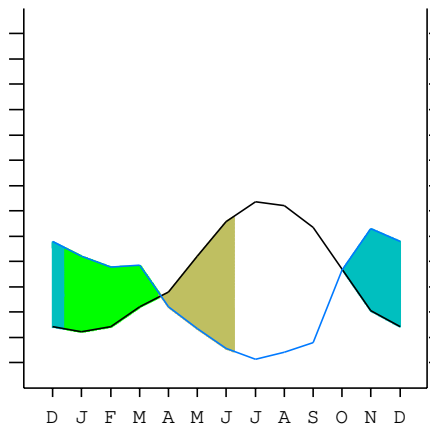
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

COIN (ESP MALAGA)

36°39'N 4°45'W 209 m 16/39 y.

T= 18.4 Ic= 14.8 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 6.3 Tp= 2212 LOW THERMOMEDITERRANEAN
 M= 17.1 Tn= 0 LOW DRY
 M' = 41.3 Itc= 418
 m' = 1.5 Io= 2.8
 P= 615 mm ———
 PE= 933 mm ———

Imbibing	1 Oct.
Saturation	13 Dec.
Reserve Use	23 Mar.
Deficit	9 Jun.



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2a]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: a. High

Thermic types [B1.A3]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Low eutemperate
 + Thermic type: A. Warm
 + Thermic subtype: 3. Subwarm

Bioclimatic types [B8.2b.5b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant ..:
 + Thermic type.....: 2. THERMOMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Mehc.Tme.Dry

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 132
 Coldest semester of the year.....(Psw): 484
 Warmest four months period of the year.....(Pcm1): 35
 Following warmest four months period.....(Pcm2): 361
 Positive precipitation dryest 3 months.....(Ppd): 20
 Positive precipitation dryest 2 months.....(Ppd2): 10
 Positive precipitation dryest 1 month.....(Ppd1): 2
 Positive precipitation warmest 3 months.....(Pps): 24
 Positive precipitation warmest 2 months.....(Pps2): 10
 Positive precipitation warmest 1 month.....(Pps1): 7
 Positive precipitation coldest 3 months.....(Ppw): 252
 Positive precipitation coldest 2 months.....(Ppw2): 158
 Positive precipitation coldest 1 month.....(Ppw1): 83

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	251	145	19	198

Seasonal rainfall rhythms: W > F > P > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 26.5
 Average coldest month [T].....(Tmin): 11.7
 Maximum temp. warmest month [M].....(Tmmax): 33.5
 Minimum temp. coldest month [m].....(Tmmin): 6.3
 Absolute Max.temp. warmest month [M'].....(Tamax): 41.3
 Absolute Min.temp. coldest month [m'].....(Tamin): 1.5
 First warmest contrasted month [M].....(Tcmax): 33.5 (7)
 First coldest contrasted month [m].....(Tcmin): 19.0 (7)
 Estival temperature.....(Ts): 756
 Positive temperature dryest 3 months.....(Tpd): 756
 Positive temperature dryest 2 months.....(Tpd2): 527
 Positive temperature dryest 1 month.....(Tpd1): 262
 Positive temperature warmest 3 months.....(Tps): 768
 Positive temperature warmest 2 months.....(Tps2): 527
 Positive temperature warmest 1 month.....(Tps1): 265
 Positive temperature coldest 3 months.....(Tpw): 373
 Positive temperature coldest 2 months.....(Tpw2): 243
 Positive temperature coldest 1 month.....(Tpw1): 117

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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)												
Pregelid.....[m' <=0] (Pf)												
Agelid.....[m' > 0] (Pf)	o	o	o	o	o	o	o	o	o	o	o	o
HiperAgelid..[all>0] (Pf)	o	o	o	o	o	o	o	o	o	o	o	o

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.52
 Mediterranean index of July.[PE/P].....(Im1): 78.40
 Mediterranean index of July & August.....(Im2): 33.92
 Mediterranean index of June, July & August....(Im3): 22.45

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	942	827	748	760	435	256	104	21	74	149	714	1123
Tp	130	117	126	146	158	187	229	262	265	241	196	155
Io (Iom)	7.25	7.07	5.94	5.21	2.75	1.37	0.45	0.08	0.28	0.62	3.64	7.25
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	2517 / 373			1451 / 491			199 / 756			1986 / 592		
Io (Iot)	6.748			2.955			0.263			3.355		
Semesters	December-May						June-November					
Pp(x10)/Tp	3968 / 864						2185 / 1348					
Io (Iosm)	4.593						1.621					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 6153/2212=2.78 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	942	827	748	760	435	256	104	21	74	149	714	1123
Tp [T*10]	130	117	126	146	158	187	229	262	265	241	196	155
Iom [Pp/Tp]	725	707	594	521	275	137	45	8	28	62	364	725
Avm [200-Iom]	***	***	***	***	***	63	155	192	172	138	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	2517 / 373			1451 / 491			199 / 756			1986 / 592		
Iot [Pp/Tp]	675			296			26			335		
Avs E[Avm<200]	***			***			519			***		
Lower ultrahyperarid [1]							Lower hyperarid [2]					
Strong lower arid [1]							Weak lower arid [1]					
Weak lower semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 14.80
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 21.75
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 20.60
 + Oceanic (20<CI<40)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 1.12
 + Subcontinental (1.1<CI<1.7)
 Rainfall Index of Lang (1925) [R=P/T]: 33.38
 + Steppic (40>R>0)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 21.64
 + Subhumid (30>Ia>20)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 56.84
 + Subhumid (90>Q>50)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 3.00
 + Semiarid (3>DR>2)
 Aridity Index of UNEP [I=P/PE]: 0.66
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 20.50
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: A. Warm and temperate warm
 + Region: 3. Termoxeroteric (Mediterranean warm)
 + Thermic type: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.43	0.37	0.36	0.19	0.09	0.03	0.00	0.02	0.05	0.29	0.54	0.47
T-E ratio	5.26	5.67	6.57	7.11	8.42	10.30	11.79	11.92	10.85	8.82	6.97	5.85
Precipitation-effectiveness: 28.35						Temperature-efficiency: 99.54						
Moisture Index [MI=100*(P-PE)/PE]: -34.04 + D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]: 53.19 + Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]: 19.15 + Moderate surplus (10<HI<20)												
Potential Evapotranspiration PE: 932.77 + Third mesothermic (855<PE<997)												

