

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

ANTEQUERA CORTIJO ROBLEDO (ESP MALAGA) Altitude: 700 m.

Latitude: 36°56'N Longitude: 4°52'W
 Temperature observation period.: 1972-1989 (18)
 Rainfall observation period....: 1972-1989 (18)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	8.40	11.50	5.40	17.30	0.70	73.0	19.10
Feb.	9.20	12.40	6.00	18.70	1.60	85.0	21.78
Mar.	10.50	14.30	6.70	21.00	2.00	56.0	32.47
Apr.	11.90	15.80	7.90	22.90	3.40	44.0	42.20
May.	15.20	19.70	10.70	26.20	5.90	30.0	68.73
Jun.	19.80	24.90	14.70	31.10	10.20	14.0	104.92
Jul.	24.00	29.50	18.40	35.10	14.10	6.0	144.20
Aug.	24.30	29.70	18.90	35.10	14.60	7.0	137.63
Sep.	21.30	26.10	16.60	31.10	12.60	16.0	98.53
Oct.	16.20	20.00	12.40	26.40	7.80	70.0	60.39
Nov.	12.30	15.50	9.00	22.20	4.30	80.0	34.35
Dec.	9.70	12.60	6.70	18.80	1.80	93.0	23.10
Year	15.23	19.33	11.12	25.49	6.58	574	787.40

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	321
Compensated thermicity index.....(Itc):	321
Simple continentality index.....(Ic):	15.9
Diurnality index.....(Id):	11.1
Annual ombrothermic index.....(Io):	3.14
Monthly estival ombrothermic index.....(Ios1):	0.25
Bimonthly estival ombrothermic index.....(Ios2):	0.27
Threemonthly estival ombrothermic index.....(Ios3):	0.40
Fourmonthly estival ombrothermic index.....(Ios4):	0.68
Annual ombro-evaporation index.....(Ioe):	0.33
Annual positive temperature.....(Tp):	1828
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	681
Positive precipitation.....(Pp):	574

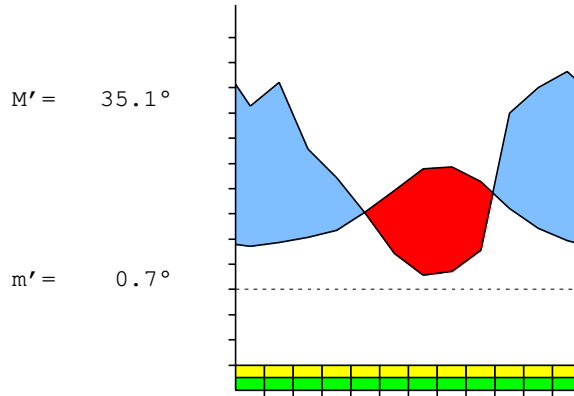
N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	6	1	1	4	0

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

ANTEQUERA CORTIJO ROBLEDO (ESP MALAGA)

700 m

P= 574 36° 56'N 4° 52'W 18/18 y.
 T= 15.2° Ic= 15.9 Tp= 1828 Tn= 0
 m= 5.4° M= 11.5° Itc= 321 Io= 3.1



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 LOW MESOMEDITERRANEAN UPPER DRY

WATER INDEX CARD

ANTEQUERA CORTIJO ROBLEDO (ESP MALAGA)

Altitude: 700 m.

Latitude: 36° 56'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	8.4	19	73	0	100	19	0	54	33	2.8
Feb.	9.2	22	85	0	100	22	0	63	48	2.9
Mar.	10.5	32	56	0	100	32	0	24	36	0.7
Apr.	11.9	42	44	0	100	42	0	2	19	0.0
May.	15.2	69	30	-39	61	69	0	0	9	-0.5
Jun.	19.8	105	14	-61	0	75	30	0	5	-0.8
Jul.	24.0	144	6	0	0	6	138	0	2	-0.9
Aug.	24.3	138	7	0	0	7	131	0	1	-0.9
Sep.	21.3	99	16	0	0	16	83	0	1	-0.8
Oct.	16.2	60	70	10	10	60	0	0	0	0.1
Nov.	12.3	34	80	46	55	34	0	0	0	1.3
Dec.	9.7	23	93	45	100	23	0	25	13	3.0
Year	15.2	787	574	*	*	406	381	168	168	*

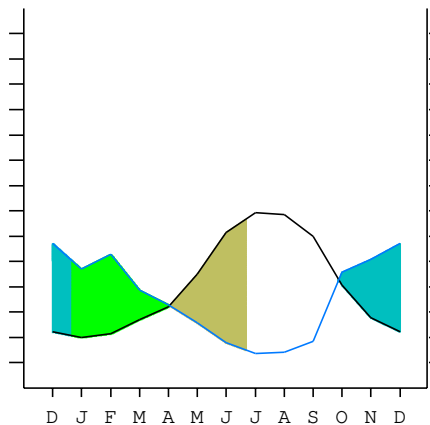
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

ANTEQUERA CORTIJO ROBLEDO (ESP MALAGA)

36°56'N 4°52'W 700 m 18/18 y.

T= 15.2 Ic= 15.9 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 5.4 Tp= 1828 LOW MESOMEDITERRANEAN
 M= 11.5 Tn= 0 UPPER DRY
 M' = 35.1 Itc= 321
 m' = 0.7 Io= 3.1
 P= 574 mm
 PE= 787 mm

Imbibing	27 Sep.
Saturation	20 Dec.
Reserve Use	2 Apr.
Deficit	21 Jun.



ANTEQUERA CORTIJO ROBLEDO (ESP MALAGA)

Latitude: 36°56'N Longitude: 4°52'W Altitude: 700 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2b]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: b. Low
 Thermic types [B1.A3]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Low eutemperate
 + Thermic type: A. Warm
 + Thermic subtype: 3. Subwarm
 Bioclimatic types [B8.3b.5a]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant ..:
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : a. UPPER
 Bioclimatic Classification: Mehc.Mme.Dry

ANTEQUERA CORTIJO ROBLEDO (ESP MALAGA)

Latitude: 36°56'N Longitude: 4°52'W Altitude: 700 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 143
 Coldest semester of the year.....(Psw): 431
 Warmest four months period of the year.....(Pcm1): 43
 Following warmest four months period.....(Pcm2): 316
 Positive precipitation dryest 3 months.....(Ppd): 27
 Positive precipitation dryest 2 months.....(Ppd2): 13
 Positive precipitation dryest 1 month.....(Ppd1): 6
 Positive precipitation warmest 3 months.....(Pps): 29
 Positive precipitation warmest 2 months.....(Pps2): 13
 Positive precipitation warmest 1 month.....(Pps1): 7
 Positive precipitation coldest 3 months.....(Ppw): 251
 Positive precipitation coldest 2 months.....(Ppw2): 158
 Positive precipitation coldest 1 month.....(Ppw1): 73

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	251	130	27	166

Seasonal rainfall rhythms: W > F > P > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 24.3
 Average coldest month [T].....(Tmin): 8.4
 Maximum temp. warmest month [M].....(Tmmax): 29.7
 Minimum temp. coldest month [m].....(Tmmin): 5.4
 Absolute Max.temp. warmest month [M'].....(Tamax): 35.1
 Absolute Min.temp. coldest month [m'].....(Tamin): 0.7
 First warmest contrasted month [M].....(Tcmax): 29.5 (7)
 First coldest contrasted month [m].....(Tcmin): 18.4 (7)
 Estival temperature.....(Ts): 681
 Positive temperature dryest 3 months.....(Tpd): 681
 Positive temperature dryest 2 months.....(Tpd2): 483
 Positive temperature dryest 1 month.....(Tpd1): 240
 Positive temperature warmest 3 months.....(Tps): 696
 Positive temperature warmest 2 months.....(Tps2): 483
 Positive temperature warmest 1 month.....(Tps1): 243
 Positive temperature coldest 3 months.....(Tpw): 273
 Positive temperature coldest 2 months.....(Tpw2): 176
 Positive temperature coldest 1 month.....(Tpw1): 84

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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): 1.37
 Mediterranean index of July.[PE/P].....(Im1): 24.03
 Mediterranean index of July & August.....(Im2): 21.68
 Mediterranean index of June, July & August....(Im3): 14.32

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	930	730	850	560	440	300	140	60	70	160	700	800
Tp	97	84	92	105	119	152	198	240	243	213	162	123
Io (Iom)	9.59	8.69	9.24	5.33	3.70	1.97	0.71	0.25	0.29	0.75	4.32	6.50
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	2510 / 273			1300 / 376			270 / 681			1660 / 498		
Io (Iot)	9.194			3.457			0.396			3.333		
Semesters	December-May						June-November					
Pp(x10)/Tp	3810 / 649						1930 / 1179					
Io (Iosm)	5.871						1.637					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5740/1828=3.14 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	930	730	850	560	440	300	140	60	70	160	700	800
Tp [T*10]	97	84	92	105	119	152	198	240	243	213	162	123
Iom [Pp/Tp]	959	869	924	533	370	197	71	25	29	75	432	650
Avm [200-Iom]	***	***	***	***	***	3	129	175	171	125	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	2510 / 273			1300 / 376			270 / 681			1660 / 498		
Iot [Pp/Tp]	919			346			40			333		
Avs E[Avm<200]	***			***			475			***		
Lower hyperarid [2]							Strong lower arid [1]					
Strong upper arid [2]							Weak upper semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 15.90
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	24.58
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	23.00
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.19
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	37.68
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	22.75
+ Subhumid (30>Ia>20)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	67.30
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P]	2.65
+ Semiarid (3>DR>2)	
Aridity Index of UNEP [I=P/PE]	0.73
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	15.07
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.42	0.48	0.29	0.21	0.12	0.05	0.02	0.02	0.05	0.31	0.40	0.52
T-E ratio	3.78	4.14	4.72	5.35	6.84	8.91	10.80	10.93	9.58	7.29	5.54	4.36
Precipitation-effectiveness: 28.86						Temperature-efficiency						82.26
Moisture Index [MI=100*(P-PE)/PE]												-27.10
+ C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE]												48.39
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												21.29
+ Strong surplus (20<HI)												
Potential Evapotranspiration PE												787.40
+ Second mesothermic (712<PE<855)												

