

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

COLMENAR TORRIJOS (ESP MALAGA) Altitude: 780 m.

Latitude: 36°50'N Longitude: 4°22'W

Temperature observation period.: 1956-1989 (34)

Rainfall observation period....: 1967-1989 (23)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	7.60	13.20	1.90	20.70	-3.90	91.9	18.70
Feb.	9.30	15.30	3.30	22.00	-1.10	85.5	24.83
Mar.	10.00	16.00	4.00	22.80	0.10	63.2	33.45
Apr.	12.00	18.40	5.50	25.20	1.40	68.8	46.64
May.	15.30	23.00	7.70	29.60	3.50	40.5	73.77
Jun.	18.60	26.60	10.70	33.90	6.60	31.1	98.95
Jul.	22.20	30.70	13.60	36.80	10.00	0.8	130.24
Aug.	22.20	29.70	14.80	35.50	10.90	18.2	121.90
Sep.	19.60	26.60	12.50	32.70	8.60	11.9	89.45
Oct.	15.50	21.80	9.20	28.30	4.90	53.3	59.78
Nov.	10.60	16.10	5.20	23.20	1.10	133.1	30.06
Dec.	8.20	13.90	2.50	20.50	-1.60	105.5	20.17
Year	14.26	20.94	7.57	27.60	3.38	704	747.95

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	294
Compensated thermicity index.....(Itc):	294
Simple continentality index.....(Ic):	14.6
Diurnality index.....(Id):	17.1
Annual ombrothermic index.....(Io):	4.11
Monthly estival ombrothermic index.....(Ios1):	0.04
Bimonthly estival ombrothermic index.....(Ios2):	0.43
Threemonthly estival ombrothermic index.....(Ios3):	0.80
Fourmonthly estival ombrothermic index.....(Ios4):	1.16
Annual ombro-evaporation index.....(Ioe):	0.94
Annual positive temperature.....(Tp):	1711
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	630
Positive precipitation.....(Pp):	704

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	6	2	1	3	0

Latitudinal Belt....: Low Eutemperate

Continentality.....: Oceanic - High Euoceanic

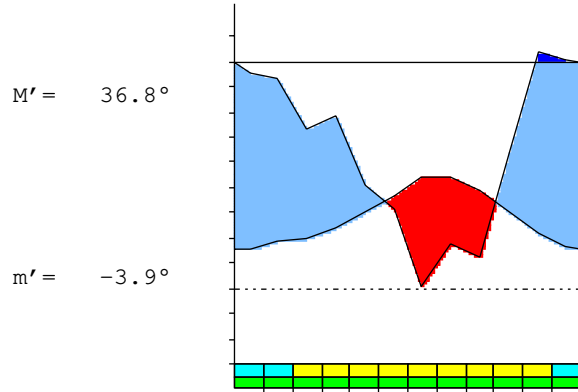
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt....: LOW MESOMEDITERRANEAN LOW SUBHUMID

COLMENAR TORRIJOS (ESP MALAGA)

780 m

P= 704 36° 50'N 4° 22'W 34/23 y.
 T= 14.3 ° Ic= 14.6 Tp= 1711 Tn= 0
 m= 1.9 ° M= 13.2 ° Itc= 294 Io= 4.1



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 LOW MESOMEDITERRANEAN LOW SUBHUMID

WATER INDEX CARD COLMENAR TORRIJOS (ESP MALAGA)
 Altitude: 780 m. Latitude: 36° 50'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	7.6	19	92	0	100	19	0	73	58	3.9
Feb.	9.3	25	86	0	100	25	0	61	60	2.4
Mar.	10.0	33	63	0	100	33	0	30	45	0.8
Apr.	12.0	47	69	0	100	47	0	22	33	0.4
May.	15.3	74	41	-33	67	74	0	0	17	-0.4
Jun.	18.6	99	31	-67	0	98	1	0	8	-0.6
Jul.	22.2	130	1	0	0	1	129	0	4	-0.9
Aug.	22.2	122	18	0	0	18	104	0	2	-0.8
Sep.	19.6	89	12	0	0	12	78	0	1	-0.8
Oct.	15.5	60	53	0	0	53	6	0	1	-0.1
Nov.	10.6	30	133	100	100	30	0	3	2	3.4
Dec.	8.2	20	106	0	100	20	0	85	44	4.2
Year	14.3	748	704	*	*	430	318	274	274	*

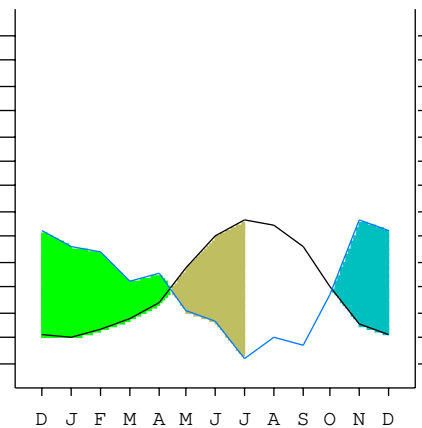
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

COLMENAR TORRIJOS (ESP MALAGA)

36°50'N 4°22'W 780 m 34/23 y.

T= 14.3 Ic= 14.6 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 1.9 Tp= 1711 LOW MESOMEDITERRANEAN
 M= 13.2 Tn= 0 LOW SUBHUMID
 M' = 36.8 Itc= 294
 m' = -3.9 Io= 4.1
 P= 704 mm ———
 PE= 748 mm ———

Imbibing	2 Oct.
Saturation	30 Nov.
Reserve Use	12 Apr.
Deficit	30 Jun.



COLMENAR TORRIJOS (ESP MALAGA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B2a]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: a. High
 Thermic types [B1.B4]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Low Eutemperate
 + Thermic type: B. Temperate
 + Thermic subtype: 4. Temperate
 Bioclimatic types [B8.3b.6b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant .:
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic ClassificationMepo.Mme.Shu.Euo

COLMENAR TORRIJOS (ESP MALAGA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 156
 Coldest semester of the year.....(Psw): 548
 Warmest four months period of the year.....(Pcm1): 62
 Following warmest four months period.....(Pcm2): 384
 Positive precipitation dryest 3 months.....(Ppd): 31
 Positive precipitation dryest 2 months.....(Ppd2): 19
 Positive precipitation dryest 1 month.....(Ppd1): 1
 Positive precipitation warmest 3 months.....(Pps): 31
 Positive precipitation warmest 2 months.....(Pps2): 19
 Positive precipitation warmest 1 month.....(Pps1): 1
 Positive precipitation coldest 3 months.....(Ppw): 283
 Positive precipitation coldest 2 months.....(Ppw2): 197
 Positive precipitation coldest 1 month.....(Ppw1): 92

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	282	172	50	198

Seasonal rainfall rhythms: W > F > P > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 22.2
 Average coldest month [T].....(Tmin): 7.6
 Maximum temp. warmest month [M].....(Tmmax): 30.7
 Minimum temp. coldest month [m].....(Tmmin): 1.9
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.8
 Absolute Min.temp. coldest month [m'].....(Tamin): -3.9
 First warmest contrasted month [M].....(Tcmax): 30.7 (7)
 First coldest contrasted month [m].....(Tcmin): 13.6 (7)
 Estival temperature.....(Ts): 630
 Positive temperature dryest 3 months.....(Tpd): 640
 Positive temperature dryest 2 months.....(Tpd2): 444
 Positive temperature dryest 1 month.....(Tpd1): 222
 Positive temperature warmest 3 months.....(Tps): 640
 Positive temperature warmest 2 months.....(Tps2): 444
 Positive temperature warmest 1 month.....(Tps1): 222
 Positive temperature coldest 3 months.....(Tpw): 251
 Positive temperature coldest 2 months.....(Tpw2): 158
 Positive temperature coldest 1 month.....(Tpw1): 76

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.06
 Mediterranean index of July.[PE/P].....(Im1): 162.80
 Mediterranean index of July & August.....(Im2): 13.27
 Mediterranean index of June, July & August....(Im3): 7.01

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1055	919	855	632	688	405	311	8	182	119	533	1331
Tp	82	76	93	100	120	153	186	222	222	196	155	106
Io (Iom)	12.9	12.1	9.19	6.32	5.73	2.65	1.67	0.04	0.82	0.61	3.44	12.6
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	2829 / 251			1725 / 373			501 / 630			1983 / 457		
Io (Iot)	11.27			4.625			0.795			4.339		
Semesters	December-May						June-November					
Pp(x10)/Tp	4554 / 624						2484 / 1087					
Io (Iosm)	7.298						2.285					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 7038/1711=4.11 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1055	919	855	632	688	405	311	8	182	119	533	1331
Tp [T*10]	82	76	93	100	120	153	186	222	222	196	155	106
Iom [Pp/Tp]	\$\$	\$\$	919	632	573	265	167	4	82	61	344	\$\$
Avm [200-Iom]	***	***	***	***	***	***	33	196	118	139	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	2829 / 251			1725 / 373			501 / 630			1983 / 457		
Iot [Pp/Tp]	1127			462			80			434		
Avs E[Avm<200]	***			***			347			***		
Lower ultrahyperarid [1]							Weak lower arid [1]					
Weak upper arid [2]							Strong upper semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 14.60
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	21.00
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	20.03
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.10
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T]	49.36
+ Semiarid (60>R>40)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	29.01
+ Subhumid (30>Ia>20)	
I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)]	74.96
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P]	2.03
+ Semiarid (3>DR>2)	
Aridity Index of UNEP [I=P/PE]	0.94
+ Humid (I>0.65)	
Potencial Erosion I of Fournier (1960) [K=Pi ² /P].....	25.17
+ 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: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.55	0.48	0.33	0.34	0.17	0.12	0.00	0.06	0.04	0.23	0.75	0.63
T-E ratio	3.42	4.19	4.50	5.40	6.89	8.37	9.99	9.99	8.82	6.97	4.77	3.69
Precipitation-effectiveness: 37.17						Temperature-efficiency: 77.00						
Moisture Index [MI=100*(P-PE)/PE]												
+ C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE]												
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												
+ Strong surplus (20<HI)												
Potential Evapotranspiration PE												
+ Second mesothermic (712<PE<855)												

