

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

MAHOMA (ESP HUELVA)

Altitude: 456 m.

Latitude: 37°52'N Longitude: 7°5'W

Temperature observation period.: 1952-1964 (13)

Rainfall observation period....: 1952-1964 (13)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	9.70	13.30	6.00	19.00	0.50	117.0	20.55
Feb.	9.60	13.90	5.20	21.70	-0.40	113.0	19.96
Mar.	11.20	15.70	6.80	22.90	2.00	145.0	31.84
Apr.	13.40	18.40	8.40	25.20	5.00	77.0	46.19
May.	18.40	25.80	11.00	33.00	6.50	69.0	88.79
Jun.	21.40	29.50	13.40	36.80	9.10	27.0	115.86
Jul.	24.70	34.50	14.90	40.60	10.60	1.0	149.22
Aug.	25.00	34.70	15.30	41.00	10.90	3.0	142.58
Sep.	21.90	30.10	13.60	36.40	9.10	10.0	101.09
Oct.	18.30	24.10	12.50	30.90	7.60	85.0	68.66
Nov.	13.70	17.80	9.50	23.80	5.70	132.0	36.64
Dec.	10.20	10.20	6.40	19.50	3.60	187.0	21.87
Year	16.46	22.33	10.25	29.23	5.85	966	843.26

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	356
Compensated thermicity index.....(Itc):	356
Simple continentality index.....(Ic):	15.4
Diurnality index.....(Id):	19.6
Annual ombrothermic index.....(Io):	4.89
Monthly estival ombrothermic index.....(Ios1):	0.04
Bimonthly estival ombrothermic index.....(Ios2):	0.08
Threemonthly estival ombrothermic index.....(Ios3):	0.44
Fourmonthly estival ombrothermic index.....(Ios4):	1.12
Annual ombro-evaporation index.....(Ioe):	0.25
Annual positive temperature.....(Tp):	1975
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	711
Positive precipitation.....(Pp):	966

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	7	1	1	3	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Euoceanic

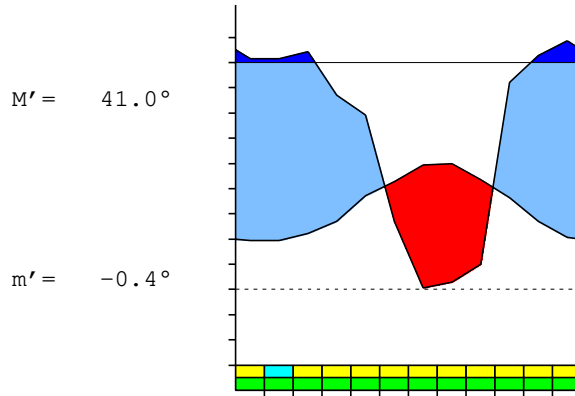
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: UPPER THERMOMEDITERRANEAN UPPER SUBHUMID

MAHOMA (ESP HUELVA)

456 m

P= 966      37° 52'N      7° 5'W      13/13 y.  
 T= 16.5°    Ic= 15.4      Tp= 1975      Tn= 0  
 m= 5.2°      M= 13.9°      Itc= 356      Io= 4.9



MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 UPPER THERMOMEDITERRANEAN UPPER SUBHUMID

WATER INDEX CARD  
 Altitude: 456 m.

MAHOMA (ESP HUELVA)  
 Latitude: 37° 52'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	9.7	21	117	0	100	21	0	96	91	4.6
Feb.	9.6	20	113	0	100	20	0	93	92	4.6
Mar.	11.2	32	145	0	100	32	0	113	103	3.5
Apr.	13.4	46	77	0	100	46	0	31	67	0.6
May.	18.4	89	69	-20	80	89	0	0	33	-0.2
Jun.	21.4	116	27	-80	0	107	9	0	17	-0.7
Jul.	24.7	149	1	0	0	1	148	0	8	-0.9
Aug.	25.0	143	3	0	0	3	140	0	4	-0.9
Sep.	21.9	101	10	0	0	10	91	0	2	-0.9
Oct.	18.3	69	85	16	16	69	0	0	1	0.2
Nov.	13.7	37	132	84	100	37	0	12	6	2.6
Dec.	10.2	22	187	0	100	22	0	165	86	7.5
Year	16.5	843	966	*	*	456	388	510	510	*

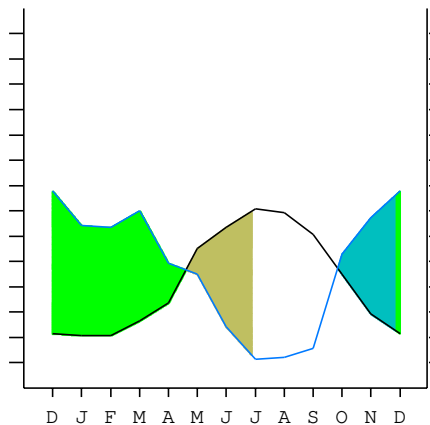
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

MAHOMA (ESP HUELVA)

37°52'N    7°5'W    456 m 13/13 y.

T= 16.5    Ic= 15.4    MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 m= 5.2    Tp= 1975    UPPER THERMOMEDITERRANEAN  
 M= 13.9    Tn= 0    UPPER SUBHUMID  
 M' = 41.0    Itc= 356  
 m' = -0.4    Io= 4.9  
 P= 966    mm    ———  
 PE= 843    mm    ———

Imbibing	26 Sep.
Saturation	27 Nov.
Reserve Use	19 Apr.
Deficit	28 Jun.



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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 [B8.2a.6a]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 2. THERMOMEDITERRANEAN  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 6. SUBHUMID  
 + Ombrothermic subtype : a. UPPER

Bioclimatic Classification .....: Mehc.Tme.Shu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 195  
 Coldest semester of the year.....(Psw): 771  
 Warmest four months period of the year.....(Pcm1): 41  
 Following warmest four months period.....(Pcm2): 521  
 Positive precipitation dryest 3 months.....(Ppd): 14  
 Positive precipitation dryest 2 months.....(Ppd2): 4  
 Positive precipitation dryest 1 month.....(Ppd1): 1  
 Positive precipitation warmest 3 months.....(Pps): 14  
 Positive precipitation warmest 2 months.....(Pps2): 4  
 Positive precipitation warmest 1 month.....(Pps1): 3  
 Positive precipitation coldest 3 months.....(Ppw): 417  
 Positive precipitation coldest 2 months.....(Ppw2): 230  
 Positive precipitation coldest 1 month.....(Ppw1): 113

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	417	291	31	227

Seasonal rainfall rhythms: W > P > F > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 25.0  
 Average coldest month [T].....(Tmin): 9.6  
 Maximum temp. warmest month [M].....(Tmmax): 34.7  
 Minimum temp. coldest month [m].....(Tmmin): 5.2  
 Absolute Max.temp. warmest month [M'].....(Tamax): 41.0  
 Absolute Min.temp. coldest month [m'].....(Tamin): -0.4  
 First warmest contrasted month [M].....(Tcmax): 34.5 (7)  
 First coldest contrasted month [m].....(Tcmin): 14.9 (7)  
 Estival temperature.....(Ts): 711  
 Positive temperature dryest 3 months.....(Tpd): 716  
 Positive temperature dryest 2 months.....(Tpd2): 497  
 Positive temperature dryest 1 month.....(Tpd1): 247  
 Positive temperature warmest 3 months.....(Tps): 716  
 Positive temperature warmest 2 months.....(Tps2): 497  
 Positive temperature warmest 1 month.....(Tps1): 250  
 Positive temperature coldest 3 months.....(Tpw): 295  
 Positive temperature coldest 2 months.....(Tpw2): 193  
 Positive temperature coldest 1 month.....(Tpw1): 96

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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										
Agelid.....[m' > 0] (Pf)	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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.87  
 Mediterranean index of July.[PE/P].....(Im1): 149.22  
 Mediterranean index of July & August.....(Im2): 72.95  
 Mediterranean index of June, July & August....(Im3): 13.15

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1870	1170	1130	1450	770	690	270	10	30	100	850	1320
Tp	102	97	96	112	134	184	214	247	250	219	183	137
Io (Iom)	18.3	12.1	11.8	12.9	5.75	3.75	1.26	0.04	0.12	0.46	4.64	9.64
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	4170 / 295			2910 / 430			310 / 711			2270 / 539		
Io (Iot)	14.14			6.767			0.436			4.212		
Semesters	December-May						June-November					
Pp(x10)/Tp	7080 / 725						2580 / 1250					
Io (Iosm)	9.766						2.064					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 9660/1975=4.89 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1870	1170	1130	1450	770	690	270	10	30	100	850	1320
Tp [T*10]	102	97	96	112	134	184	214	247	250	219	183	137
Iom [Pp/Tp]	\$\$	\$\$	\$\$	\$\$	575	375	126	4	12	46	464	964
Avm [200-Iom]	***	***	***	***	***	***	74	196	188	154	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	4170 / 295			2910 / 430			310 / 711			2270 / 539		
Iot [Pp/Tp]	1414			677			44			421		
Avs E[Avm<200]	***			***			458			***		
Lower ultrahyperarid [1]							Upper ultrahyperarid [1]					
Strong lower arid [2]							Weak lower semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 15.40
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	22.25
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	21.30
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....	1.13
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T] .....	58.69
+ Semiarid (60>R>40)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	36.51
+ Humid (60>Ia>30)	
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....	82.07
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	1.70
+ Humid (2>DR>0)	
Aridity Index of UNEP [I=P/PE] .....	1.15
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....	36.20
+ 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	0.67	0.65	0.81	0.37	0.29	0.09	0.00	0.01	0.03	0.36	0.68	1.11
T-E ratio	4.36	4.32	5.04	6.03	8.28	9.63	11.12	11.25	9.85	8.23	6.16	4.59
Precipitation-effectiveness: 50.73						Temperature-efficiency .....						88.87
Moisture Index [MI=100*(P-PE)/PE] .....	14.56											
+ C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE] .....	45.95											
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....	60.50											
+ Strong surplus (20<HI)												
Potential Evapotranspiration PE .....	843.26											
+ Second mesothermic (712<PE<855)												

