

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

ALHAMA LOS QUEMADOS (ESP MURCIA)

Altitude: 705 m.

Latitude: 37°52'N Longitude: 1°28'W

Temperature observation period.: 1953-1972 (20)

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

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	9.40	12.20	6.50	18.30	2.10	31.5	19.68
Feb.	10.40	13.90	6.80	20.50	2.30	31.9	23.09
Mar.	12.20	16.30	8.10	23.20	3.70	38.6	37.13
Apr.	14.30	18.90	9.80	25.40	5.40	48.9	51.94
May.	18.40	23.20	13.60	29.80	9.20	38.9	89.11
Jun.	21.40	26.60	16.10	32.20	11.90	27.4	116.11
Jul.	24.70	30.10	19.40	35.10	16.30	11.2	149.33
Aug.	24.90	29.90	19.90	35.00	17.00	13.5	141.70
Sep.	21.90	26.60	17.30	31.40	13.60	23.6	101.28
Oct.	17.10	20.80	13.40	26.40	9.30	56.6	61.41
Nov.	12.60	15.60	9.70	21.60	5.60	44.0	31.99
Dec.	9.30	11.80	6.80	17.30	2.60	36.3	18.87
Year	16.38	20.49	12.28	26.35	8.25	402	841.66

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	350
Compensated thermicity index.....(Itc):	350
Simple continentality index.....(Ic):	15.6
Diurnality index.....(Id):	10.7
Annual ombrothermic index.....(Io):	2.05
Monthly estival ombrothermic index.....(Ios1):	0.45
Bimonthly estival ombrothermic index.....(Ios2):	0.50
Threemonthly estival ombrothermic index.....(Ios3):	0.73
Fourmonthly estival ombrothermic index.....(Ios4):	1.02
Annual ombro-evaporation index.....(Ioe):	0.74
Annual positive temperature.....(Tp):	1966
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	710
Positive precipitation.....(Pp):	402

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	0	8	2	2	0

Latitudinal Belt...: Low eutemperate

Continentality.....: Oceanic - Low Euoceanic

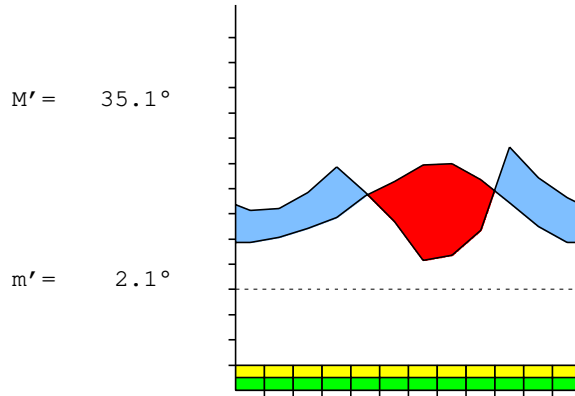
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: LOW MESOMEDITERRANEAN LOW DRY

ALHAMA LOS QUEMADOS (ESP MURCIA)

705 m

P= 402      37° 52'N      1° 28'W      20/39 y.  
 T= 16.4°    Ic= 15.6      Tp= 1966      Tn= 0  
 m= 6.8°      M= 11.8°      Itc= 350      Io= 2.0



MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 LOW MESOMEDITERRANEAN LOW DRY

WATER INDEX CARD ALHAMA LOS QUEMADOS (ESP MURCIA)

Altitude: 705 m.      Latitude: 37° 52'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	9.4	20	32	12	41	20	0	0	0	0.6
Feb.	10.4	23	32	9	50	23	0	0	0	0.3
Mar.	12.2	37	39	1	52	37	0	0	0	0.0
Apr.	14.3	52	49	-3	49	52	0	0	0	0.0
May.	18.4	89	39	-49	0	87	2	0	0	-0.5
Jun.	21.4	116	27	0	0	27	89	0	0	-0.7
Jul.	24.7	149	11	0	0	11	138	0	0	-0.9
Aug.	24.9	142	14	0	0	14	128	0	0	-0.9
Sep.	21.9	101	24	0	0	24	78	0	0	-0.7
Oct.	17.1	61	57	0	0	57	5	0	0	0.0
Nov.	12.6	32	44	12	12	32	0	0	0	0.3
Dec.	9.3	19	36	17	29	19	0	0	0	0.9
Year	16.4	842	402	*	*	402	439	0	0	*

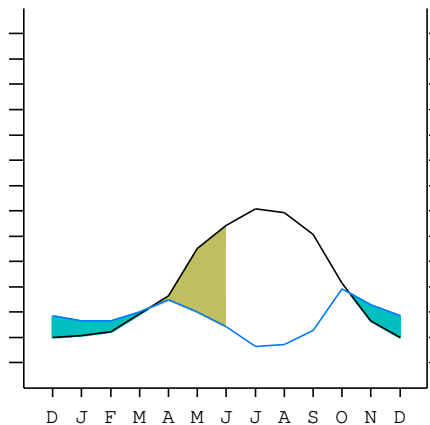
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

ALHAMA LOS QUEMADOS (ESP MURCIA)

37°52'N    1°28'W    705 m 20/39 y.

T= 16.4    Ic= 15.6    MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 m= 6.8    Tp= 1966    LOW MESOMEDITERRANEAN  
 M= 11.8    Tn= 0    LOW DRY  
 M' = 35.1    Itc= 350  
 m' = 2.1    Io= 2.0  
 P= 402    mm    ———  
 PE= 842    mm    ———

Imbibing	9 Oct.
Saturation	10 Mar.
Reserve Use	29 May.
Deficit	



ALHAMA LOS QUEMADOS (ESP MURCIA)

Latitude: 37°52'N Longitude: 1°28'W Altitude: 705 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.5b]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 3. MESOMEDITERRANEAN  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....: Mehc.Mme.Dry

ALHAMA LOS QUEMADOS (ESP MURCIA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 171  
 Coldest semester of the year.....(Psw): 231  
 Warmest four months period of the year.....(Pcm1): 76  
 Following warmest four months period.....(Pcm2): 168  
 Positive precipitation dryest 3 months.....(Ppd): 48  
 Positive precipitation dryest 2 months.....(Ppd2): 25  
 Positive precipitation dryest 1 month.....(Ppd1): 11  
 Positive precipitation warmest 3 months.....(Pps): 48  
 Positive precipitation warmest 2 months.....(Pps2): 25  
 Positive precipitation warmest 1 month.....(Pps1): 14  
 Positive precipitation coldest 3 months.....(Ppw): 100  
 Positive precipitation coldest 2 months.....(Ppw2): 68  
 Positive precipitation coldest 1 month.....(Ppw1): 36

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	99	126	52	124

Seasonal rainfall rhythms: P > F > W > S

ALHAMA LOS QUEMADOS (ESP MURCIA)

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 24.9  
 Average coldest month [T].....(Tmin): 9.3  
 Maximum temp. warmest month [M].....(Tmmax): 30.1  
 Minimum temp. coldest month [m].....(Tmmin): 6.5  
 Absolute Max.temp. warmest month [M'].....(Tamax): 35.1  
 Absolute Min.temp. coldest month [m'].....(Tamin): 2.1  
 First warmest contrasted month [M].....(Tcmax): 30.1 (7)  
 First coldest contrasted month [m].....(Tcmin): 19.4 (7)  
 Estival temperature.....(Ts): 710  
 Positive temperature dryest 3 months.....(Tpd): 715  
 Positive temperature dryest 2 months.....(Tpd2): 496  
 Positive temperature dryest 1 month.....(Tpd1): 247  
 Positive temperature warmest 3 months.....(Tps): 715  
 Positive temperature warmest 2 months.....(Tps2): 496  
 Positive temperature warmest 1 month.....(Tps1): 249  
 Positive temperature coldest 3 months.....(Tpw): 291  
 Positive temperature coldest 2 months.....(Tpw2): 187  
 Positive temperature coldest 1 month.....(Tpw1): 93

ALHAMA LOS QUEMADOS (ESP MURCIA)

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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

ALHAMA LOS QUEMADOS (ESP MURCIA)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 2.09  
 Mediterranean index of July.[PE/P].....(Im1): 13.33  
 Mediterranean index of July & August.....(Im2): 11.78  
 Mediterranean index of June, July & August....(Im3): 7.81

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	363	315	319	386	489	389	274	112	135	236	566	440
Tp	93	94	104	122	143	184	214	247	249	219	171	126
Io (Iom)	3.90	3.35	3.07	3.16	3.42	2.11	1.28	0.45	0.54	1.08	3.31	3.49
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	997 / 291			1264 / 449			521 / 710			1242 / 516		
Io (Iot)	3.426			2.815			0.734			2.407		
Semesters	December-May						June-November					
Pp(x10)/Tp	2261 / 740						1763 / 1226					
Io (Iosm)	3.055						1.438					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 4024/1966=2.05 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	363	315	319	386	489	389	274	112	135	236	566	440
Tp [T*10]	93	94	104	122	143	184	214	247	249	219	171	126
Iom [Pp/Tp]	390	335	307	316	342	211	128	45	54	108	331	349
Avm [200-Iom]	***	***	***	***	***	***	72	155	146	92	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	997 / 291			1264 / 449			521 / 710			1242 / 516		
Iot [Pp/Tp]	343			282			73			241		
Avs E[Avm<200]	***			***			372			***		
Strong lower arid [1]							Weak lower arid [1]					
Strong upper arid [1]							Strong lower semiarid [1]					
Weak lower semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 15.60
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	22.80
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	21.76
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....	1.15
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T] .....	24.56
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	15.25
+ Semiarid -mediterranean- (20>Ia>15)	
I of Emberger (1930) [Q=100*P/(Tmmax <sup>2</sup> -Tmmmin <sup>2</sup> )] .....	46.59
+ Semiarid (50>Q>30)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	4.07
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE] .....	0.48
+ Semiarid (0.5>Im>0.2)	
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....	7.96
+ 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	0.16	0.15	0.18	0.22	0.15	0.10	0.03	0.04	0.08	0.24	0.21	0.19
T-E ratio	4.23	4.68	5.49	6.44	8.28	9.63	11.12	11.20	9.85	7.70	5.67	4.19
Precipitation-effectiveness: 17.43						Temperature-efficiency .....						88.47
Moisture Index [MI=100*(P-PE)/PE] .....												-52.19
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE] .....												52.18
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												841.66
+ Second mesothermic (712<PE<855)												

