

# Phytosociological Research Center

www.globalbioclimatics.org

## Worldwide Bioclimatic Classification System

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### AGUILAS (ESP MURCIA)

Altitude: 4 m.

Latitude: 37° 24'N Longitude: 1° 35'W

Temperature observation period.: 1965-1970 (6)

Rainfall observation period....: 1965-1970 (6)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	13.10	17.40	8.90	21.80	6.00	20.0	27.44
Feb.	13.20	17.60	8.90	22.20	4.70	9.0	27.55
Mar.	15.10	20.00	10.20	25.50	6.00	12.0	43.95
Apr.	17.00	21.60	12.30	26.50	9.50	17.0	59.80
May.	19.40	23.90	15.00	29.30	11.80	18.0	86.89
Jun.	23.10	27.50	18.70	31.30	15.20	15.0	125.19
Jul.	26.40	30.50	22.40	34.40	19.80	0.0	167.18
Aug.	26.70	30.90	22.50	33.80	20.50	2.0	160.41
Sep.	24.20	28.90	19.60	31.50	16.80	15.0	115.30
Oct.	20.70	25.40	16.00	28.40	12.20	33.0	78.89
Nov.	16.70	21.10	12.20	24.70	8.80	22.0	44.56
Dec.	13.40	18.00	8.80	22.40	4.00	14.0	27.74
<b>Year</b>	19.08	23.57	14.62	27.65	11.28	177	964.90

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	454
Compensated thermicity index.....(Itc):	454
Simple continentality index.....(Ic):	13.6
Diurnality index.....(Id):	9.8
Annual ombrothermic index.....(Io):	0.77
Monthly estival ombrothermic index.....(Ios1):	No
Bimonthly estival ombrothermic index.....(Ios2):	0.04
Threemonthly estival ombrothermic index.....(Ios3):	0.22
Fourmonthly estival ombrothermic index.....(Ios4):	0.37
Annual ombro-evaporation index.....(Ioe):	0.18
Annual positive temperature.....(Tp):	2290
Annual negative temperature.....(Tn):	-0
Estival temperature.....(Ts):	762
Positive precipitation.....(Pp):	177

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0°
Months	0	0	5	7	0

Latitudinal Belt...: Eutemperate

Continentalty.....: Oceanic - Low Semihyperoceanic

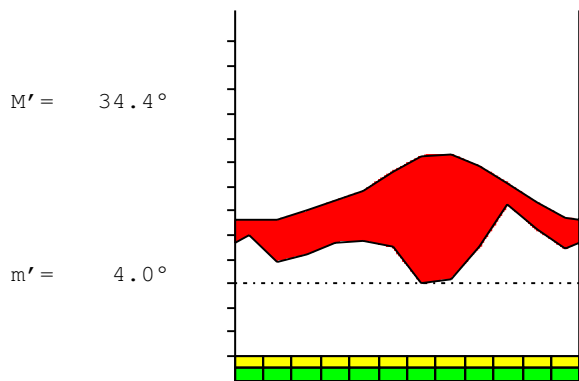
Bioclimate.....: MEDITERRANEAN DESERTIC-OCEANIC

Bioclimatic belt...: UPPER INFRAMEDITERRANEAN UPPER ARID

**AGUILAS (ESP MURCIA)**

4 m

P= 177      37° 24'N      1° 35'W      6/6 y.  
 T= 19.1 °      Ic= 13.6      Tp= 2290      Tn= -0  
 m= 8.9 °      M= 17.4 °      Itc= 454      Io= 0.8



**MEDITERRANEAN DESERTIC-OCEANIC  
 UPPER INFRAMEDITERRANEAN UPPER ARID**

**WATER INDEX CARD**

**AGUILAS (ESP MURCIA)**

Altitude: 4 m.

Latitude: 37° 24'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	13.1	27	20	0	0	20	7	0	0	-0.2
Feb.	13.2	28	9	0	0	9	18	0	0	-0.6
Mar.	15.1	44	12	0	0	12	32	0	0	-0.7
Apr.	17.0	60	17	0	0	17	43	0	0	-0.7
May.	19.4	87	18	0	0	18	69	0	0	-0.7
Jun.	23.1	125	15	0	0	15	110	0	0	-0.8
Jul.	26.4	167	0	0	0	0	167	0	0	-1.0
Aug.	26.7	160	2	0	0	2	158	0	0	-0.9
Sep.	24.2	115	15	0	0	15	100	0	0	-0.8
Oct.	20.7	79	33	0	0	33	46	0	0	-0.5
Nov.	16.7	45	22	0	0	22	22	0	0	-0.5
Dec.	13.4	28	14	0	0	14	14	0	0	-0.4
<b>Year</b>	<b>19.1</b>	<b>965</b>	<b>177</b>	<b>*</b>	<b>*</b>	<b>177</b>	<b>788</b>	<b>0</b>	<b>0</b>	<b>*</b>

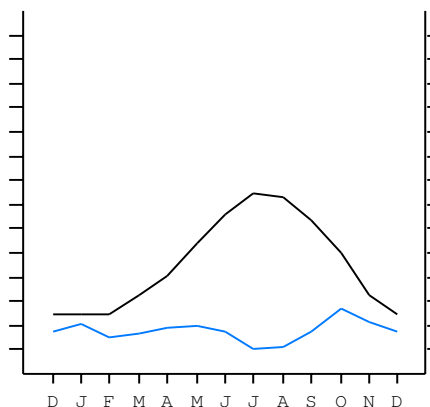
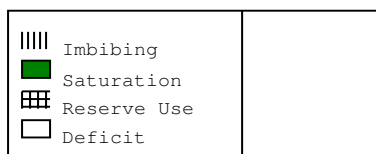
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coeficient    DF = Deficit    SP = Superavit

**AGUILAS (ESP MURCIA)**

37°24'N    1°35'W    4 m    6/6 y.

T= 19.1      Ic= 13.6  
 m= 8.9      Tp= 2290  
 M= 17.4      Tn= -0  
 M' = 34.4      Itc= 454  
 m' = 4.0      Io= 0.8  
 P= 177      mm ———  
 PE= 965      mm ———

**MEDITERRANEAN DESERTIC-OCEANIC  
 UPPER INFRAMEDITERRANEAN  
 UPPER ARID**



All over the year,  
 there is hydric deficit

**AGUILAS (ESP MURCIA)**

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**SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION**

Continental Index [B1b]  
 + Type .....: B. Oceanic  
 + Subtype .....: 1. Semihyperoceanic  
 + Variant .....: b. Low

Thermic types [B1.A2]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 1. Eutemperate  
 + Thermic type .....: A. Warm  
 + Thermic subtype .....: 2. Warm

Bioclimatic types [B4.1a.3a]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 4. DESERTIC-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 1. INFRAMEDITERRANEAN  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 3. ARID  
 + Ombrothermic subtype : a. UPPER

**Bioclimatic Classification .....: Mexc.Ime.Ari**

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**PRECIPITATION PARAMETERS**

Warmest semester of the year.....(Pss): 83  
 Coldest semester of the year.....(Psw): 94  
 Warmest four months period of the year.....(Pcm1): 32  
 Following warmest four months period.....(Pcm2): 89  
 Positive precipitation dryest 3 months.....(Ppd): 17  
 Positive precipitation dryest 2 months.....(Ppd2): 2  
 Positive precipitation dryest 1 month.....(Ppd1): 0  
 Positive precipitation warmest 3 months.....(Pps): 17  
 Positive precipitation warmest 2 months.....(Pps2): 2  
 Positive precipitation warmest 1 month.....(Pps1): 2  
 Positive precipitation coldest 3 months.....(Ppw): 43  
 Positive precipitation coldest 2 months.....(Ppw2): 29  
 Positive precipitation coldest 1 month.....(Ppw1): 20

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	43	47	17	70

**Seasonal rainfall rhythms: F > P > W > S**

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**TEMPERATURE PARAMETERS**

Average warmest month [T].....(Tmax): 26.7  
 Average coldest month [T].....(Tmin): 13.1  
 Maximum temp. warmest month [M].....(Tmmax): 30.9  
 Minimum temp. coldest month [m].....(Tmmin): 8.8  
 Absolute Max.temp. warmest month [M'].....(Tamax): 34.4  
 Absolute Min.temp. coldest month [m'].....(Tamin): 4.0  
 First warmest contrasted month [M].....(Tcmax): 20.0 (3)  
 First coldest contrasted month [m].....(Tcmin): 10.2 (3)  
 Estival temperature.....(Ts): 762  
 Positive temperature dryest 3 months.....(Tpd): 762  
 Positive temperature dryest 2 months.....(Tpd2): 531  
 Positive temperature dryest 1 month.....(Tpd1): 264  
 Positive temperature warmest 3 months.....(Tps): 773  
 Positive temperature warmest 2 months.....(Tps2): 531  
 Positive temperature warmest 1 month.....(Tps1): 267  
 Positive temperature coldest 3 months.....(Tpw): 397  
 Positive temperature coldest 2 months.....(Tpw2): 263  
 Positive temperature coldest 1 month.....(Tpwl): 131

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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): 5.45  
 Mediterranean index of July.[PE/P].....(Im1): 0.00  
 Mediterranean index of July & August.....(Im2): 163.79  
 Mediterranean index of June, July & August....(Im3): 26.63

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	140	200	90	120	170	180	150	0	20	150	330	220
Tp	134	131	132	151	170	194	231	264	267	242	207	167
<b>Io (Iom)</b>	1.04	1.53	0.68	0.79	1.00	0.93	0.65	0.00	0.07	0.62	1.59	1.32
Seasons	<b>Winter</b>			<b>Spring</b>			<b>Summer</b>			<b>Autumn</b>		
Pp(x10)/Tp	430 / 397			470 / 515			170 / 762			700 / 616		
<b>Io (Iot)</b>	1.083			0.913			0.223			1.136		
Semesters	<b>December-May</b>						<b>June-November</b>					
Pp(x10)/Tp	900 / 912						870 / 1378					
<b>Io (Iosm)</b>	0.987						0.631					

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**BIOCLIMATIC INDICES I**

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 13.60  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 17.67  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 17.41  
 + Hyperoceanic (-20<CI<20)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 1.01  
 + Oceanic (0.6<CI<1.1)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 9.28  
 + Steppic (40>R>0)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 6.09  
 + Arid -steppic- (15>Ia>5)  
 I of Emberger (1930) [Q=100\*P/(Tmmax<sup>2</sup>-Tmmin<sup>2</sup>)] .....: 20.17  
 + Arid (30>Q>0)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 10.78  
 + Extremely arid (DR>6)  
 Aridity Index of UNEP [I=P/PE] .....: 0.18  
 + Arid (0.2>Im>0.05)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 6.15  
 + Very low (K<60)

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**BIOCLIMATIC INDICES II**

Bioclimatic classification of Gaussen & Bagnouls (1957)

- + Climate ....: A. Warm and temperate warm
- + Region .....: 1. Termoeremic (Desertic warm)
- + Thermic type: 2. Macrothermic

Thorntthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.08	0.03	0.05	0.06	0.06	0.05	0.00	0.00	0.05	0.12	0.08	0.06
T-E ratio	5.90	5.94	6.80	7.65	8.73	10.40	11.88	12.02	10.89	9.32	7.52	6.03
Precipitation-effectiveness: 6.48						Temperature-efficiency ....: 103.05						
Moisture Index [MI=100*(P-PE)/PE] .....: -81.66 + E.Dry (-110<MI<-66.7) Index of dryness [DI=100*d/PE] .....: 81.65 + Strong deficit (33.3<DI) Index of humidity [HI=100*s/PE] .....: 0.00 + No surplus (0<HI<10) Potential Evapotranspiration PE .....: 964.90 + Third mesothermic (855<PE<997)												

