

# Phytosociological Research Center

www.globalbioclimatics.org

## Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

ABANILLA (ESP MURCIA)

Altitude: 222 m.

Latitude: 38°12'N Longitude: 1°2'W

Temperature observation period.: 1942-1969 (28)

Rainfall observation period....: 1942-1969 (28)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPi
Jan.	12.50	16.30	8.80	22.50	3.90	19.0	23.08
Feb.	13.10	17.30	9.00	23.10	3.80	17.0	25.20
Mar.	15.50	20.10	10.90	26.70	6.40	19.0	44.25
Apr.	17.40	22.30	12.50	28.60	8.40	40.0	60.48
May.	20.60	25.90	15.30	32.50	10.10	27.0	96.96
Jun.	24.10	29.60	18.70	35.60	13.20	22.0	136.62
Jul.	27.50	33.10	21.90	38.60	17.20	4.0	179.38
Aug.	28.00	33.60	22.50	38.30	18.80	10.0	172.58
Sep.	25.20	30.20	20.30	35.50	15.90	36.0	126.03
Oct.	20.80	25.10	16.40	30.60	11.50	54.0	77.25
Nov.	16.50	20.40	12.60	26.10	7.50	23.0	41.24
Dec.	13.80	17.60	10.00	21.50	5.30	32.0	27.83
Year	19.58	24.29	14.91	29.97	10.17	303	1010.9

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	447
Compensated thermicity index.....(Itc):	447
Simple continentality index.....(Ic):	15.5
Diurnality index.....(Id):	11.2
Annual ombrothermic index.....(Io):	1.29
Monthly estival ombrothermic index.....(Ios1):	0.15
Bimonthly estival ombrothermic index.....(Ios2):	0.25
Three monthly estival ombrothermic index.....(Ios3):	0.45
Four monthly estival ombrothermic index.....(Ios4):	0.63
Annual ombro-evaporation index.....(Ioe):	1.02
Annual positive temperature.....(Tp):	2350
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	796
Positive precipitation.....(Pp):	303

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

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Euoceanic

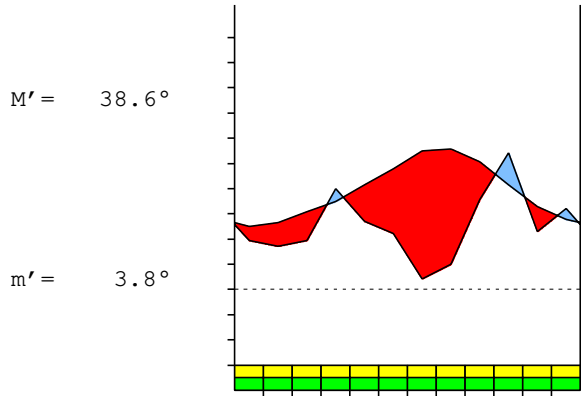
Bioclimate.....: MEDITERRANEAN XERIC-OCEANIC

Bioclimatic Belt...: LOW THERMOMEDITERRANEAN LOW SEMIARID

ABANILLA (ESP MURCIA)

222 m

P= 303      38° 12'N      1° 2'W      28/28 y.  
 T= 19.6°    Ic= 15.5      Tp= 2350      Tn= 0  
 m= 8.8°      M= 16.3°      Itc= 447      Io= 1.3



MEDITERRANEAN XERIC-OCEANIC  
 LOW THERMOMEDITERRANEAN LOW SEMIARID

WATER INDEX CARD      ABANILLA (ESP MURCIA)  
 Altitude: 222 m.      Latitude: 38° 12'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	12.5	23	19	-4	0	23	0	0	0	-0.1
Feb.	13.1	25	17	0	0	17	8	0	0	-0.3
Mar.	15.5	44	19	0	0	19	25	0	0	-0.5
Apr.	17.4	60	40	0	0	40	20	0	0	-0.3
May.	20.6	97	27	0	0	27	70	0	0	-0.7
Jun.	24.1	137	22	0	0	22	115	0	0	-0.8
Jul.	27.5	179	4	0	0	4	175	0	0	-0.9
Aug.	28.0	173	10	0	0	10	163	0	0	-0.9
Sep.	25.2	126	36	0	0	36	90	0	0	-0.7
Oct.	20.8	77	54	0	0	54	23	0	0	-0.3
Nov.	16.5	41	23	0	0	23	18	0	0	-0.4
Dec.	13.8	28	32	4	4	28	0	0	0	0.1
Year	19.6	1011	303	*	*	303	708	0	0	*

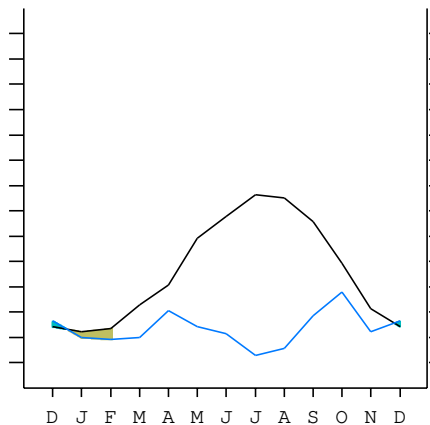
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

ABANILLA (ESP MURCIA)

38°12'N      1°2'W      222 m 28/28 y.

T= 19.6      Ic= 15.5      MEDITERRANEAN XERIC-OCEANIC  
 m= 8.8      Tp= 2350      LOW THERMOMEDITERRANEAN  
 M= 16.3      Tn= 0      LOW SEMIARID  
 M' = 38.6    Itc= 447  
 m' = 3.8      Io= 1.3  
 P= 303      mm      ———  
 PE= 1011    mm      ———

Imbibing	25 Nov.
Saturation	16 Dec.
Reserve Use	1 Feb.
Deficit	



ABANILLA (ESP MURCIA)

Latitude: 38°12'N Longitude: 1°2'W Altitude: 222 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2b]  
 + Type .....: B. Oceanic  
 + Subtype .....: 2. Euoceanic  
 + Variant .....: b. Low

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

Bioclimatic types [B6.2b.4b]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 6. XERIC-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 2. THERMOMEDITERRANEAN  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 4. SEMIARID  
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification .....: MepDC.Tme.Sar

ABANILLA (ESP MURCIA)

Latitude: 38°12'N Longitude: 1°2'W Altitude: 222 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 153  
 Coldest semester of the year.....(Psw): 150  
 Warmest four months period of the year.....(Pcm1): 72  
 Following warmest four months period.....(Pcm2): 128  
 Positive precipitation dryest 3 months.....(Ppd): 36  
 Positive precipitation dryest 2 months.....(Ppd2): 14  
 Positive precipitation dryest 1 month.....(Ppd1): 4  
 Positive precipitation warmest 3 months.....(Pps): 50  
 Positive precipitation warmest 2 months.....(Pps2): 14  
 Positive precipitation warmest 1 month.....(Pps1): 10  
 Positive precipitation coldest 3 months.....(Ppw): 68  
 Positive precipitation coldest 2 months.....(Ppw2): 36  
 Positive precipitation coldest 1 month.....(Ppw1): 19

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	68	86	36	113

Seasonal rainfall rhythms: F > P > W > S

ABANILLA (ESP MURCIA)

Latitude: 38°12'N Longitude: 1°2'W Altitude: 222 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 28.0  
 Average coldest month [T].....(Tmin): 12.5  
 Maximum temp. warmest month [M].....(Tmmax): 33.6  
 Minimum temp. coldest month [m].....(Tmmin): 8.8  
 Absolute Max.temp. warmest month [M'].....(Tamax): 38.6  
 Absolute Min.temp. coldest month [m'].....(Tamin): 3.8  
 First warmest contrasted month [M].....(Tcmax): 33.1 (7)  
 First coldest contrasted month [m].....(Tcmin): 21.9 (7)  
 Estival temperature.....(Ts): 796  
 Positive temperature dryest 3 months.....(Tpd): 796  
 Positive temperature dryest 2 months.....(Tpd2): 555  
 Positive temperature dryest 1 month.....(Tpd1): 275  
 Positive temperature warmest 3 months.....(Tps): 807  
 Positive temperature warmest 2 months.....(Tps2): 555  
 Positive temperature warmest 1 month.....(Tps1): 280  
 Positive temperature coldest 3 months.....(Tpw): 394  
 Positive temperature coldest 2 months.....(Tpw2): 256  
 Positive temperature coldest 1 month.....(Tpw1): 125

ABANILLA (ESP MURCIA)

Latitude: 38°12'N Longitude: 1°2'W Altitude: 222 m

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

ABANILLA (ESP MURCIA)

Latitude: 38°12'N Longitude: 1°2'W Altitude: 222 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 3.34  
 Mediterranean index of July.[PE/P].....(Im1): 44.85  
 Mediterranean index of July & August.....(Im2): 25.14  
 Mediterranean index of June, July & August....(Im3): 13.57

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	320	190	170	190	400	270	220	40	100	360	540	230
Tp	138	125	131	155	174	206	241	275	280	252	208	165
Io (Iom)	2.32	1.52	1.30	1.23	2.30	1.31	0.91	0.15	0.36	1.43	2.60	1.39
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	680 / 394			860 / 535			360 / 796			1130 / 625		
Io (Iot)	1.726			1.607			0.452			1.808		
Semesters	December-May						June-November					
Pp(x10)/Tp	1540 / 929						1490 / 1421					
Io (Iosm)	1.658						1.049					

ABANILLA (ESP MURCIA)

Latitude: 38°12'N Longitude: 1°2'W Altitude: 222 m

Aridity Value Index (AVI)

[10xPP/TP=IO]: 3030/2350=1.29 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	320	190	170	190	400	270	220	40	100	360	540	230
Tp [T*10]	138	125	131	155	174	206	241	275	280	252	208	165
Iom [Pp/Tp]	232	152	130	123	230	131	91	15	36	143	260	139
Avm [200-Iom]	***	48	70	77	***	69	109	185	164	57	***	61
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	680 / 394			860 / 535			360 / 796			1130 / 625		
Iot [Pp/Tp]	173			161			45			181		
Avs E[Avm<200]	***			***			458			***		
Upper ultrahyperarid [1]							Upper hyperarid [1]					
Strong lower arid [1]							Weak upper arid [1]					
Weak lower semiarid [5]							Strong upper semiarid [1]					

ABANILLA (ESP MURCIA)

Latitude: 38°12'N Longitude: 1°2'W Altitude: 222 m

BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 15.50
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	22.21
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	21.35
+ 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] .....	15.47
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	10.24
+ Arid -steppic- (15>Ia>5)	
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....	28.82
+ Arid (30>Q>0)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	6.46
+ Extremely arid (DR>6)	
Aridity Index of UNEP [I=P/PE] .....	0.30
+ Semiarid (0.5>Im>0.2)	
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....	9.62
+ Very low (K<60)	

ABANILLA (ESP MURCIA)

Latitude: 38°12'N Longitude: 1°2'W Altitude: 222 m

BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....

- + Climate .....
- + Region .....
- + Thermic type: 2. Macrothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.08	0.07	0.07	0.16	0.10	0.07	0.01	0.03	0.12	0.21	0.09	0.14
T-E ratio	5.63	5.90	6.97	7.83	9.27	10.85	12.38	12.60	11.34	9.36	7.43	6.21
Precipitation-effectiveness: 11.42						Temperature-efficiency .....						105.75
Moisture Index [MI=100*(P-PE)/PE] .....												-70.03
+ E.Dry (-110<MI<-66.7)												
Index of dryness [DI=100*d/PE] .....												70.03
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												1010.90
+ Forth mesothermic (997<PE<1440)												

