

Phytosociological Research Center

www.globalbioclimatics.org

Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

QUIPAR -EMB.- (ESP MURCIA)

Altitude: 312 m.

Latitude: 38°13'N Longitude: 1°35'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.	7.50	12.40	2.60	18.90	-3.80	21.0	13.27
Feb.	8.90	14.20	3.60	21.40	-3.30	22.0	17.56
Mar.	12.00	17.70	6.20	25.90	-0.40	21.0	35.86
Apr.	14.80	20.80	8.90	28.30	3.70	42.0	54.78
May.	18.60	24.80	12.40	31.80	6.60	34.0	90.49
Jun.	22.50	29.00	16.00	35.80	11.00	23.0	126.25
Jul.	26.00	33.00	18.90	39.30	14.50	3.0	162.90
Aug.	26.10	33.10	19.10	38.70	14.60	9.0	153.47
Sep.	22.40	28.80	16.00	34.60	10.60	27.0	105.09
Oct.	16.90	22.10	11.70	29.30	5.20	49.0	59.97
Nov.	11.40	16.30	6.60	22.60	-0.60	19.0	26.79
Dec.	8.00	12.60	3.40	18.70	-3.80	31.0	14.46
Year	16.26	22.07	10.45	28.78	4.53	301	860.89

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	313
Compensated thermicity index.....(Itc):	316
Simple continentality index.....(Ic):	18.6
Diurnality index.....(Id):	14.1
Annual ombrothermic index.....(Io):	1.54
Monthly estival ombrothermic index.....(Ios1):	0.12
Bimonthly estival ombrothermic index.....(Ios2):	0.23
Threemonthly estival ombrothermic index.....(Ios3):	0.47
Fourmonthly estival ombrothermic index.....(Ios4):	0.74
Annual ombro-evaporation index.....(Ioe):	0.93
Annual positive temperature.....(Tp):	1951
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	746
Positive precipitation.....(Pp):	301

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

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Semicontinental

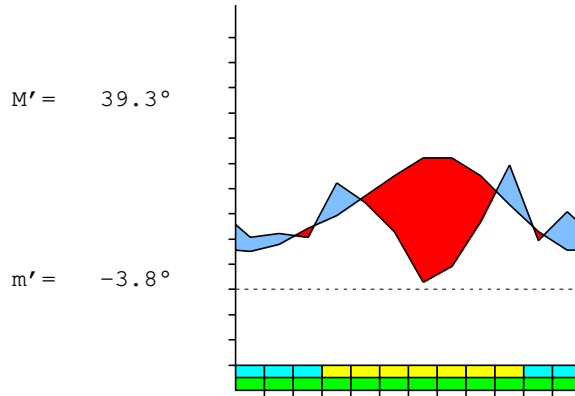
Bioclimate.....: MEDITERRANEAN XERIC-OCEANIC

Bioclimatic Belt...: LOW MESOMEDITERRANEAN UPPER SEMIARID

QUIPAR -EMB.- (ESP MURCIA)

312 m

P= 301 38° 13'N 1° 35'W 28/28 y.
 T= 16.3° Ic= 18.6 Tp= 1951 Tn= 0
 m= 2.6° M= 12.4° Itc= 316 Io= 1.5



MEDITERRANEAN XERIC-OCEANIC
 LOW MESOMEDITERRANEAN UPPER SEMIARID

WATER INDEX CARD

QUIPAR -EMB.- (ESP MURCIA)

Altitude: 312 m.

Latitude: 38° 13'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	7.5	13	21	8	24	13	0	0	0	0.5
Feb.	8.9	18	22	4	29	18	0	0	0	0.2
Mar.	12.0	36	21	-15	14	36	0	0	0	-0.4
Apr.	14.8	55	42	-13	1	55	0	0	0	-0.2
May.	18.6	90	34	-1	0	35	55	0	0	-0.6
Jun.	22.5	126	23	0	0	23	103	0	0	-0.8
Jul.	26.0	163	3	0	0	3	160	0	0	-0.9
Aug.	26.1	153	9	0	0	9	144	0	0	-0.9
Sep.	22.4	105	27	0	0	27	78	0	0	-0.7
Oct.	16.9	60	49	0	0	49	11	0	0	-0.1
Nov.	11.4	27	19	0	0	19	8	0	0	-0.2
Dec.	8.0	14	31	17	17	14	0	0	0	1.1
Year	16.3	861	301	*	*	301	560	0	0	*

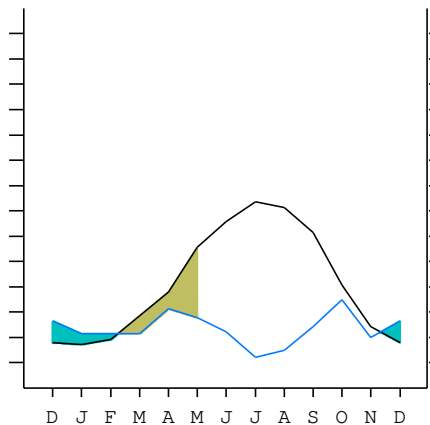
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

QUIPAR -EMB.- (ESP MURCIA)

38°13'N 1°35'W 312 m 28/28 y.

T= 16.3 Ic= 18.6 MEDITERRANEAN XERIC-OCEANIC
 m= 2.6 Tp= 1951 LOW MESOMEDITERRANEAN
 M= 12.4 Tn= 0 UPPER SEMIARID
 M' = 39.3 Itc= 316
 m' = -3.8 Io= 1.5
 P= 301 mm
 PE= 861 mm

Imbibing	10 Nov.
Saturation	7 Feb.
Reserve Use	1 May.
Deficit	



QUIPAR -EMB.- (ESP MURCIA)

Latitude: 38°13'N Longitude: 1°35'W Altitude: 312 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1a]

- + Type: B. Oceanic
- + Subtype: 1. Semicontinental
- + Variant: a. Low

Thermic types [B1.A3]

- + Latitudinal zone: B. Temperate
- + Latitudinal belt: 1. Low eutemperate
- + Thermic type: A. Warm
- + Thermic subtype: 3. Subwarm

Bioclimatic types [B6.3b.4a]

- + Macrobioclimate: B. MEDITERRANEAN
- + Bioclimate: 6. XERIC-OCEANIC
- + Bioclimatic variant ..:
- + Thermic type.....: 3. MESOMEDITERRANEAN
- + Thermic subtype.....: b. LOW
- + Ombrothermic type ...: 4. SEMIARID
- + Ombrothermic subtype : a. UPPER

Bioclimatic Classification: MepDC.Mme.Sar

QUIPAR -EMB.- (ESP MURCIA)

Latitude: 38°13'N Longitude: 1°35'W Altitude: 312 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 145

Coldest semester of the year.....(Psw): 156

Warmest four months period of the year.....(Pcm1): 62

Following warmest four months period.....(Pcm2): 120

Positive precipitation dryest 3 months.....(Ppd): 35

Positive precipitation dryest 2 months.....(Ppd2): 12

Positive precipitation dryest 1 month.....(Ppd1): 3

Positive precipitation warmest 3 months.....(Pps): 35

Positive precipitation warmest 2 months.....(Pps2): 12

Positive precipitation warmest 1 month.....(Pps1): 9

Positive precipitation coldest 3 months.....(Ppw): 74

Positive precipitation coldest 2 months.....(Ppw2): 52

Positive precipitation coldest 1 month.....(Ppw1): 21

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	74	97	35	95

Seasonal rainfall rhythms: P > F > W > S

QUIPAR -EMB.- (ESP MURCIA)

Latitude: 38°13'N Longitude: 1°35'W Altitude: 312 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 26.1

Average coldest month [T].....(Tmin): 7.5

Maximum temp. warmest month [M].....(Tmmax): 33.1

Minimum temp. coldest month [m].....(Tmmin): 2.6

Absolute Max.temp. warmest month [M'].....(Tamax): 39.3

Absolute Min.temp. coldest month [m'].....(Tamin): -3.8

First warmest contrasted month [M].....(Tcmax): 33.0 (7)

First coldest contrasted month [m].....(Tcmin): 18.9 (7)

Estival temperature.....(Ts): 746

Positive temperature dryest 3 months.....(Tpd): 746

Positive temperature dryest 2 months.....(Tpd2): 521

Positive temperature dryest 1 month.....(Tpd1): 260

Positive temperature warmest 3 months.....(Tps): 746

Positive temperature warmest 2 months.....(Tps2): 521

Positive temperature warmest 1 month.....(Tps1): 261

Positive temperature coldest 3 months.....(Tpw): 244

Positive temperature coldest 2 months.....(Tpw2): 155

Positive temperature coldest 1 month.....(Tpw1): 75

QUIPAR -EMB.- (ESP MURCIA)

Latitude: 38°13'N Longitude: 1°35'W Altitude: 312 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)	o	o	o								o	o
Agelid.....[m' > 0] (Pf)				o	o	o	o	o	o	o		
HiperAgelid..[all>0] (Pf)				o	o	o	o	o	o	o		

QUIPAR -EMB.- (ESP MURCIA)

Latitude: 38°13'N Longitude: 1°35'W Altitude: 312 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 2.86
 Mediterranean index of July.[PE/P].....(Im1): 54.30
 Mediterranean index of July & August.....(Im2): 26.36
 Mediterranean index of June, July & August....(Im3): 12.65

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	310	210	220	210	420	340	230	30	90	270	490	190
Tp	80	75	89	120	148	186	225	260	261	224	169	114
Io (Iom)	3.88	2.80	2.47	1.75	2.84	1.83	1.02	0.12	0.34	1.21	2.90	1.67
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	740 / 244			970 / 454			350 / 746			950 / 507		
Io (Iot)	3.033			2.137			0.469			1.874		
Semesters	December-May						June-November					
Pp(x10)/Tp	1710 / 698						1300 / 1253					
Io (Iosm)	2.450						1.038					

QUIPAR -EMB.- (ESP MURCIA)

Latitude: 38°13'N Longitude: 1°35'W Altitude: 312 m

Aridity Value Index (AVI)

[10xPP/TP=IO]: 3010/1951=1.54 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	310	210	220	210	420	340	230	30	90	270	490	190
Tp [T*10]	80	75	89	120	148	186	225	260	261	224	169	114
Iom [Pp/Tp]	388	280	247	175	284	183	102	12	34	121	290	167
Avm [200-Iom]	***	***	***	25	***	17	98	188	166	79	***	33
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	740 / 244			970 / 454			350 / 746			950 / 507		
Iot [Pp/Tp]	303			214			47			187		
Avs E[Avm<200]	***			***			452			***		
Upper ultrahyperarid [1]							Upper hyperarid [1]					
Strong lower arid [1]							Strong lower semiarid [1]					
Weak lower semiarid [1]							Strong upper semiarid [1]					
Weak upper semiarid [2]												

QUIPAR -EMB.- (ESP MURCIA)

Latitude: 38°13'N Longitude: 1°35'W Altitude: 312 m

BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 18.60
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	30.71
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	28.40
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.35
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	18.51
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	11.46
+ Arid -steppic- (15>Ia>5)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	27.64
+ Arid (30>Q>0)	
I of Dantin & Revenga (1940) [DR=100*T/P]	5.40
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE]	0.35
+ Semiarid (0.5>Im>0.2)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	7.98
+ Very low (K<60)	

QUIPAR -EMB.- (ESP MURCIA)

Latitude: 38°13'N Longitude: 1°35'W Altitude: 312 m

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	0.11	0.11	0.09	0.18	0.13	0.08	0.01	0.02	0.09	0.20	0.08	0.16
T-E ratio	3.38	4.00	5.40	6.66	8.37	10.13	11.70	11.75	10.08	7.60	5.13	3.60
Precipitation-effectiveness: 12.72						Temperature-efficiency						87.79
Moisture Index [MI=100*(P-PE)/PE]												-65.04
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]												65.03
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE												860.89
+ Third mesothermic (855<PE<997)												

