

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

POLIENTES (ESP SANTANDER)

Altitude: 716 m.

Latitude: 42°48'N Longitude: 3°56'W

Temperature observation period.: 1966-1970 (5)

Rainfall observation period....: 1966-1970 (5)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	4.50	8.90	0.10	16.20	-8.50	52.0	14.33
Feb.	4.80	9.80	-0.20	17.20	-5.80	65.0	15.62
Mar.	6.20	11.40	1.10	20.00	-4.60	64.0	26.07
Apr.	8.00	14.10	2.00	25.40	-1.70	51.0	38.35
May.	12.30	18.00	6.60	26.70	0.30	46.0	70.67
Jun.	15.20	21.50	8.90	33.70	2.50	46.0	91.53
Jul.	19.40	27.20	11.60	36.20	5.50	19.0	122.04
Aug.	18.70	25.70	11.70	34.70	6.20	25.0	108.84
Sep.	15.60	22.60	8.70	30.50	3.00	50.0	76.62
Oct.	12.30	18.80	5.80	26.50	0.00	58.0	53.28
Nov.	6.80	11.30	2.20	18.00	-2.70	101.0	23.01
Dec.	3.00	6.60	-0.60	13.60	-6.70	87.0	8.56
Year	10.57	16.33	4.83	24.89	-1.04	664	648.91

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	166
Compensated thermicity index.....(Itc):	166
Simple continentality index.....(Ic):	16.4
Diurnality index.....(Id):	15.6
Annual ombrothermic index.....(Io):	5.24
Monthly estival ombrothermic index.....(Ios1):	0.98
Bimonthly estival ombrothermic index.....(Ios2):	1.15
Threemonthly estival ombrothermic index.....(Ios3):	1.69
Fourmonthly estival ombrothermic index.....(Ios4):	2.07
Annual ombro-evaporation index.....(Ioe):	0.58
Annual positive temperature.....(Tp):	1268
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	533
Positive precipitation.....(Pp):	664

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

Latitudinal Belt...: Low eutemperate

Continentality.....: Oceanic - Low Euoceanic

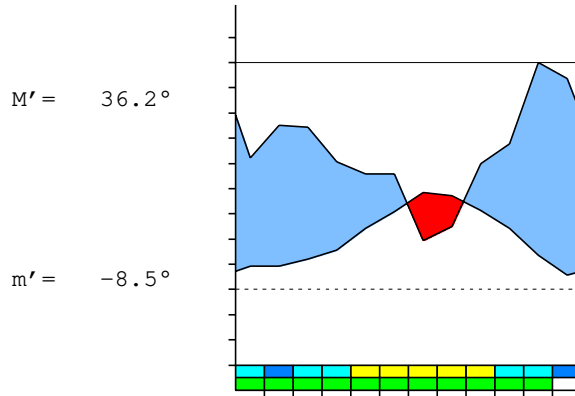
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: LOW SUPRAMEDITERRANEAN UPPER SUBHUMID

POLIENTES (ESP SANTANDER)

716 m

P= 664 42° 48'N 3° 56'W 5/5 y.
 T= 10.6° Ic= 16.4 Tp= 1268 Tn= 0
 m= -0.6° M= 6.6° Itc= 166 Io= 5.2



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 LOW SUPRAMEDITERRANEAN UPPER SUBHUMID

WATER INDEX CARD
 Altitude: 716 m.

POLIENTES (ESP SANTANDER)
 Latitude: 42° 48'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	4.5	14	52	0	100	14	0	38	34	2.6
Feb.	4.8	16	65	0	100	16	0	49	42	3.1
Mar.	6.2	26	64	0	100	26	0	38	40	1.4
Apr.	8.0	38	51	0	100	38	0	13	26	0.3
May.	12.3	71	46	-25	75	71	0	0	13	-0.3
Jun.	15.2	92	46	-46	30	92	0	0	7	-0.4
Jul.	19.4	122	19	-30	0	49	73	0	3	-0.8
Aug.	18.7	109	25	0	0	25	84	0	2	-0.7
Sep.	15.6	77	50	0	0	50	27	0	1	-0.3
Oct.	12.3	53	58	5	5	53	0	0	0	0.0
Nov.	6.8	23	101	78	83	23	0	0	0	3.3
Dec.	3.0	9	87	17	100	9	0	61	31	9.1
Year	10.6	649	664	*	*	465	184	199	199	*

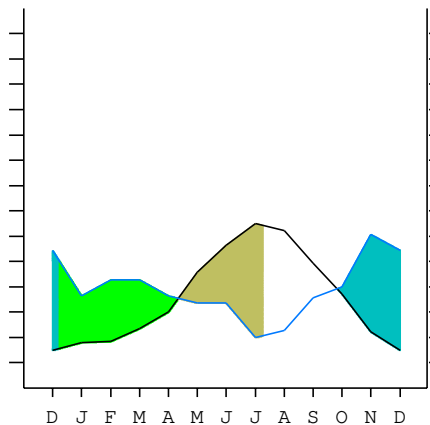
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

POLIENTES (ESP SANTANDER)

42°48'N 3°56'W 716 m 5/5 y.

T= 10.6 Ic= 16.4 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= -0.6 Tp= 1268 LOW SUPRAMEDITERRANEAN
 M= 6.6 Tn= 0 UPPER SUBHUMID
 M' = 36.2 Itc= 166
 m' = -8.5 Io= 5.2
 P= 664 mm ———
 PE= 649 mm ———

Imbibing	26 Sep.
Saturation	7 Dec.
Reserve Use	11 Apr.
Deficit	9 Jul.



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

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

Thermic types [B1.B5]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Low eutemperate
 + Thermic type: B. Temperate
 + Thermic subtype: 5. Subtemperate

Bioclimatic types [B8.4b.6a]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant ..:
 + Thermic type.....: 4. SUPRAMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : a. UPPER
 Bioclimatic Classification: Mehc.Sme.Shu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 244
 Coldest semester of the year.....(Psw): 420
 Warmest four months period of the year.....(Pcm1): 140
 Following warmest four months period.....(Pcm2): 298
 Positive precipitation dryest 3 months.....(Ppd): 90
 Positive precipitation dryest 2 months.....(Ppd2): 44
 Positive precipitation dryest 1 month.....(Ppd1): 19
 Positive precipitation warmest 3 months.....(Pps): 94
 Positive precipitation warmest 2 months.....(Pps2): 44
 Positive precipitation warmest 1 month.....(Pps1): 19
 Positive precipitation coldest 3 months.....(Ppw): 204
 Positive precipitation coldest 2 months.....(Ppw2): 139
 Positive precipitation coldest 1 month.....(Ppw1): 87

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	204	161	90	209

Seasonal rainfall rhythms: F > W > P > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 19.4
 Average coldest month [T].....(Tmin): 3.0
 Maximum temp. warmest month [M].....(Tmmax): 27.2
 Minimum temp. coldest month [m].....(Tmmin): -0.6
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.2
 Absolute Min.temp. coldest month [m'].....(Tamin): -8.5
 First warmest contrasted month [M].....(Tcmax): 27.2 (7)
 First coldest contrasted month [m].....(Tcmin): 11.6 (7)
 Estival temperature.....(Ts): 533
 Positive temperature dryest 3 months.....(Tpd): 533
 Positive temperature dryest 2 months.....(Tpd2): 381
 Positive temperature dryest 1 month.....(Tpd1): 194
 Positive temperature warmest 3 months.....(Tps): 537
 Positive temperature warmest 2 months.....(Tps2): 381
 Positive temperature warmest 1 month.....(Tps1): 194
 Positive temperature coldest 3 months.....(Tpw): 123
 Positive temperature coldest 2 months.....(Tpw2): 75
 Positive temperature coldest 1 month.....(Tpw1): 30

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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	
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)		o										o
Pregelid.....[m' <=0] (Pf)	o	o	o	o						o	o	o
Agelid.....[m' > 0] (Pf)					o	o	o	o	o			
HiperAgelid..[all>0] (Pf)					o	o	o	o	o			

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.98
 Mediterranean index of July.[PE/P].....(Im1): 6.42
 Mediterranean index of July & August.....(Im2): 5.25
 Mediterranean index of June, July & August....(Im3): 3.58

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	870	520	650	640	510	460	460	190	250	500	580	1010
Tp	30	45	48	62	80	123	152	194	187	156	123	68
Io (Iom)	29.0	11.6	13.5	10.3	6.38	3.74	3.03	0.98	1.34	3.21	4.72	14.9
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	2040 / 123			1610 / 265			900 / 533			2090 / 347		
Io (Iot)	16.59			6.075			1.689			6.023		
Semesters	December-May						June-November					
Pp(x10)/Tp	3650 / 388						2990 / 880					
Io (Iosm)	9.407						3.398					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 6640/1268=5.24 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	870	520	650	640	510	460	460	190	250	500	580	1010
Tp [T*10]	30	45	48	62	80	123	152	194	187	156	123	68
Iom [Pp/Tp]	\$\$	\$\$	\$\$	\$\$	638	374	303	98	134	321	472	\$\$
Avm [200-Iom]	***	***	***	***	***	***	***	102	66	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	2040 / 123			1610 / 265			900 / 533			2090 / 347		
Iot [Pp/Tp]	1659			608			169			602		
Avs E[Avm<200]	***			***			***			***		
Weak upper arid [1]							Weak lower semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 16.40
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	20.63
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	21.00
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.07
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T]	62.84
+ Temperate warm (100>R>60)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	32.29
+ Humid (60>Ia>30)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	89.79
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P]	1.59
+ Humid (2>DR>0)	
Aridity Index of UNEP [I=P/PE]	1.02
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	15.36
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 5. Meso-microthermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.33	0.42	0.39	0.28	0.22	0.20	0.07	0.09	0.22	0.28	0.63	0.62
T-E ratio	2.03	2.16	2.79	3.60	5.54	6.84	8.73	8.42	7.02	5.54	3.06	1.35
Precipitation-effectiveness: 37.47						Temperature-efficiency						57.06
Moisture Index [MI=100*(P-PE)/PE]												2.33
+ C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE]												28.29
+ Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE]												30.62
+ Strong surplus (20<HI)												
Potential Evapotranspiration PE												648.91
+ First mesothermic (570<PE<712)												

