

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

CASTROMONTE (ESP VALLADOLID) Altitude: 841 m.

Latitude: 41°46'N Longitude: 5°2'W

Temperature observation period.: 1943-1969 (27)

Rainfall observation period....: 1943-1969 (27)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	2.60	6.70	-1.60	13.00	-7.60	46.0	6.16
Feb.	4.80	9.90	-0.40	16.00	-6.30	41.0	13.22
Mar.	7.60	13.40	1.90	20.90	-4.00	54.0	29.43
Apr.	10.00	16.30	3.70	24.90	-1.40	45.0	45.04
May.	12.80	19.40	6.20	28.40	0.00	53.0	68.90
Jun.	19.70	29.20	10.20	35.10	3.90	33.0	118.79
Jul.	21.10	29.70	12.60	37.30	7.30	18.0	130.41
Aug.	20.60	28.60	12.70	36.60	7.70	11.0	117.67
Sep.	16.60	22.80	10.50	32.10	5.10	41.0	78.60
Oct.	12.40	18.20	6.60	25.90	0.30	41.0	49.93
Nov.	6.50	11.20	1.90	18.00	-3.70	47.0	19.29
Dec.	3.40	7.00	-0.20	12.30	-5.90	61.0	8.29
Year	11.51	17.70	5.34	25.04	-0.38	491	685.73

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	166
Compensated thermicity index.....(Itc):	169
Simple continentality index.....(Ic):	18.5
Diurnality index.....(Id):	19.0
Annual ombrothermic index.....(Io):	3.56
Monthly estival ombrothermic index.....(Ios1):	0.53
Bimonthly estival ombrothermic index.....(Ios2):	0.70
Threemonthly estival ombrothermic index.....(Ios3):	1.01
Fourmonthly estival ombrothermic index.....(Ios4):	1.55
Annual ombro-evaporation index.....(Ioe):	0.72
Annual positive temperature.....(Tp):	1381
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	614
Positive precipitation.....(Pp):	491

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

Latitudinal Belt...: Low Eutemperate

Continentality.....: Oceanic - Low Semicontinental

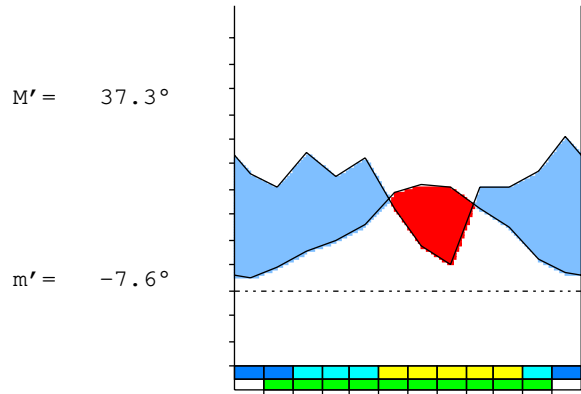
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: LOW SUPRAMEDITERRANEAN UPPER DRY

CASTROMONTE (ESP VALLADOLID)

841 m

P= 491      41° 46'N      5° 2'W      27/27 y.  
 T= 11.5 °    Ic= 18.5      Tp= 1381      Tn= 0  
 m= -1.6 °    M= 6.7 °      Itc= 169      Io= 3.6



MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 LOW SUPRAMEDITERRANEAN UPPER DRY

WATER INDEX CARD      CASTROMONTE (ESP VALLADOLID)  
 Altitude: 841 m.      Latitude: 41° 46'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	2.6	6	46	20	100	6	0	20	10	6.4
Feb.	4.8	13	41	0	100	13	0	28	19	2.1
Mar.	7.6	29	54	0	100	29	0	25	22	0.8
Apr.	10.0	45	45	0	100	45	0	0	11	0.0
May.	12.8	69	53	-16	84	69	0	0	5	-0.2
Jun.	19.7	119	33	-84	0	117	2	0	3	-0.7
Jul.	21.1	130	18	0	0	18	112	0	1	-0.8
Aug.	20.6	118	11	0	0	11	107	0	1	-0.9
Sep.	16.6	79	41	0	0	41	38	0	0	-0.4
Oct.	12.4	50	41	0	0	41	9	0	0	-0.1
Nov.	6.5	19	47	28	28	19	0	0	0	1.4
Dec.	3.4	8	61	53	80	8	0	0	0	6.3
Year	11.5	686	491	*	*	418	267	73	73	*

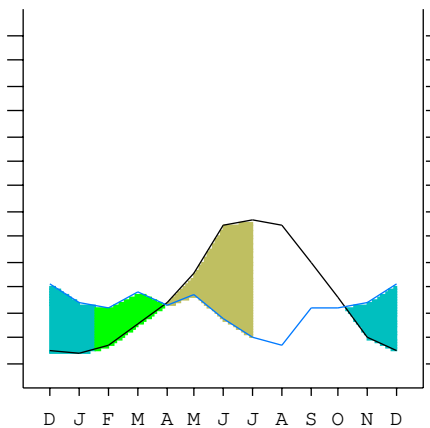
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coeficient    DF = Deficit    SP = Superavit

CASTROMONTE (ESP VALLADOLID)

41°46'N      5°2'W      841 m 27/27 y.

T= 11.5    Ic= 18.5      MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 m= -1.6    Tp= 1381      LOW SUPRAMEDITERRANEAN  
 M= 6.7    Tn= 0      UPPER DRY  
 M' = 37.3    Itc= 169  
 m' = -7.6    Io= 3.6  
 P= 491      mm      ———  
 PE= 686    mm      ———

Imbibing	8 Oct.
Saturation	15 Jan.
Reserve Use	30 Mar.
Deficit	30 Jun.



CASTROMONTE (ESP VALLADOLID)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B1a]  
 + Type .....: B. Oceanic  
 + Subtype .....: 1. Semicontinental  
 + Variant .....: a. Low  
 Thermic types [B1.B4]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 1. Low Eutemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 4. Temperate  
 Bioclimatic types [B8.4b.5a]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant .:  
 + Thermic type.....: 4. SUPRAMEDITERRANEAN  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : a. UPPER  
 Bioclimatic Classification .....Mepo.Sme.Dry.Sec

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 197  
 Coldest semester of the year.....(Psw): 294  
 Warmest four months period of the year.....(Pcm1): 103  
 Following warmest four months period.....(Pcm2): 195  
 Positive precipitation dryest 3 months.....(Ppd): 62  
 Positive precipitation dryest 2 months.....(Ppd2): 29  
 Positive precipitation dryest 1 month.....(Ppd1): 11  
 Positive precipitation warmest 3 months.....(Pps): 62  
 Positive precipitation warmest 2 months.....(Pps2): 29  
 Positive precipitation warmest 1 month.....(Pps1): 18  
 Positive precipitation coldest 3 months.....(Ppw): 148  
 Positive precipitation coldest 2 months.....(Ppw2): 107  
 Positive precipitation coldest 1 month.....(Ppw1): 46

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	148	152	62	129

Seasonal rainfall rhythms: P > W > F > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 21.1  
 Average coldest month [T].....(Tmin): 2.6  
 Maximum temp. warmest month [M].....(Tmax): 29.7  
 Minimum temp. coldest month [m].....(Tmin): -1.6  
 Absolute Max.temp. warmest month [M'].....(Tamax): 37.3  
 Absolute Min.temp. coldest month [m'].....(Tamin): -7.6  
 First warmest contrasted month [M].....(Tcmax): 29.2 (6)  
 First coldest contrasted month [m].....(Tcmin): 10.2 (6)  
 Estival temperature.....(Ts): 614  
 Positive temperature dryest 3 months.....(Tpd): 614  
 Positive temperature dryest 2 months.....(Tpd2): 417  
 Positive temperature dryest 1 month.....(Tpd1): 206  
 Positive temperature warmest 3 months.....(Tps): 614  
 Positive temperature warmest 2 months.....(Tps2): 417  
 Positive temperature warmest 1 month.....(Tps1): 211  
 Positive temperature coldest 3 months.....(Tpw): 108  
 Positive temperature coldest 2 months.....(Tpw2): 60  
 Positive temperature coldest 1 month.....(Tpw1): 26

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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	
Ultragelid...[M'<=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)	o	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): 1.40  
 Mediterranean index of July.[PE/P].....(Im1): 7.24  
 Mediterranean index of July & August.....(Im2): 8.55  
 Mediterranean index of June, July & August....(Im3): 5.92

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	610	460	410	540	450	530	330	180	110	410	410	470
Tp	34	26	48	76	100	128	197	211	206	166	124	65
Io (Iom)	17.9	17.7	8.54	7.11	4.50	4.14	1.68	0.85	0.53	2.47	3.31	7.23
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1480 / 108			1520 / 304			620 / 614			1290 / 355		
Io (Iot)	13.70			5.000			1.010			3.634		
Semesters	December-May						June-November					
Pp(x10)/Tp	3000 / 412						1910 / 969					
Io (Iosm)	7.282						1.971					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 4910/1381=3.56 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	610	460	410	540	450	530	330	180	110	410	410	470
Tp [T*10]	34	26	48	76	100	128	197	211	206	166	124	65
Iom [Pp/Tp]	\$\$	\$\$	854	711	450	414	168	85	53	247	331	723
Avm [200-Iom]	***	***	***	***	***	***	32	115	147	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1480 / 108			1520 / 304			620 / 614			1290 / 355		
Iot [Pp/Tp]	1370			500			101			363		
Avs E[Avm<200]	***			***			294			***		
Weak lower arid [1]						Weak upper arid [1]						
Strong lower semiarid [1]						Strong upper semiarid [1]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 18.50
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	26.82
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	26.04
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....	1.24
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T] .....	42.66
+ Semiarid (60>R>40)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	22.83
+ Subhumid (30>Ia>20)	
I of Emberger (1930) [Q=100*P/(Tmmax <sup>2</sup> -Tmmin <sup>2</sup> )] .....	55.83
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	2.34
+ Semiarid (3>DR>2)	
Aridity Index of UNEP [I=P/PE] .....	0.72
+ Humid (I>0.65)	
Potencial Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P].....	7.58
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate ..... A. Warm and temperate warm  
 + Region ..... 3. Termoxeroteric (Mediterranean warm)  
 + Thermic type: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.31	0.25	0.31	0.23	0.25	0.12	0.06	0.04	0.17	0.19	0.27	0.41
T-E ratio	1.17	2.16	3.42	4.50	5.76	8.87	9.50	9.27	7.47	5.58	2.93	1.53
Precipitation-effectiveness: 26.11						Temperature-efficiency .....: 62.15						
Moisture Index [MI=100*(P-PE)/PE] .....												
+ C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE] .....												
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												
+ Moderate surplus (10<HI<20)												
Potential Evapotranspiration PE .....												
+ First mesothermic (570<PE<712)												

