

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

REUS (ESP TARRAGONA)

Altitude: 117 m.

Latitude: 41°9'N Longitude: 1°7'E

Temperature observation period.: 1950-1969 (20)

Rainfall observation period....: 1950-1969 (20)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	8.80	12.00	5.60	18.20	-1.00	31.0	18.09
Feb.	9.40	13.40	5.40	19.60	0.30	29.0	20.17
Mar.	11.80	16.00	7.60	22.40	3.00	43.0	36.45
Apr.	13.60	18.10	9.00	23.80	4.80	35.0	49.66
May.	17.20	21.60	12.80	27.00	8.30	52.0	82.43
Jun.	21.10	25.50	16.80	30.40	12.80	45.0	116.45
Jul.	24.10	28.50	19.80	32.10	15.90	11.0	146.21
Aug.	24.30	28.30	20.40	30.90	16.00	38.0	138.88
Sep.	21.60	26.20	17.00	30.40	13.40	77.0	99.91
Oct.	17.40	21.20	13.60	25.70	7.70	76.0	64.53
Nov.	12.90	16.60	9.10	21.90	4.00	41.0	33.62
Dec.	9.70	13.40	6.00	18.30	0.80	40.0	20.48
Year	15.99	20.07	11.93	25.06	7.17	518	826.89

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	336
Compensated thermicity index.....(Itc):	336
Simple continentality index.....(Ic):	15.5
Diurnality index.....(Id):	9.2
Annual ombrothermic index.....(Io):	2.70
Monthly estival ombrothermic index.....(Ios1):	0.46
Bimonthly estival ombrothermic index.....(Ios2):	1.01
Threemonthly estival ombrothermic index.....(Ios3):	1.35
Fourmonthly estival ombrothermic index.....(Ios4):	1.68
Annual ombro-evaporation index.....(Ioe):	1.37
Annual positive temperature.....(Tp):	1919
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	695
Positive precipitation.....(Pp):	518

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	2	8	1	1	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Euoceanic

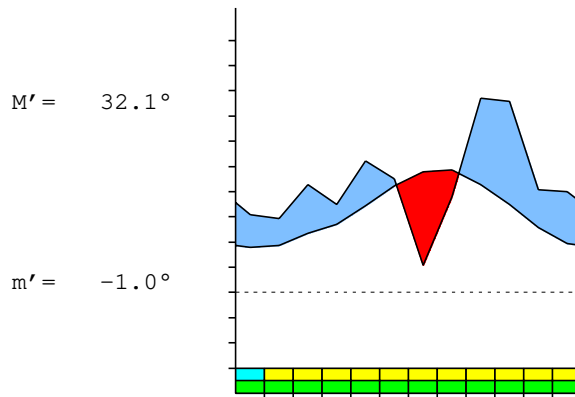
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: LOW MESOMEDITERRANEAN LOW DRY

REUS (ESP TARRAGONA)

117 m

P= 518      41° 9'N      1° 7'E      20/20 y.  
 T= 16.0°    Ic= 15.5      Tp= 1919      Tn= 0  
 m= 5.6°      M= 12.0°      Itc= 336      Io= 2.7



MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 LOW MESOMEDITERRANEAN LOW DRY

WATER INDEX CARD

REUS (ESP TARRAGONA)

Altitude: 117 m.

Latitude: 41° 9'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	8.8	18	31	13	51	18	0	0	0	0.7
Feb.	9.4	20	29	9	60	20	0	0	0	0.4
Mar.	11.8	36	43	7	67	36	0	0	0	0.1
Apr.	13.6	50	35	-15	52	50	0	0	0	-0.2
May.	17.2	82	52	-30	22	82	0	0	0	-0.3
Jun.	21.1	116	45	-22	0	67	50	0	0	-0.6
Jul.	24.1	146	11	0	0	11	135	0	0	-0.9
Aug.	24.3	139	38	0	0	38	101	0	0	-0.7
Sep.	21.6	100	77	0	0	77	23	0	0	-0.2
Oct.	17.4	65	76	11	11	65	0	0	0	0.1
Nov.	12.9	34	41	7	19	34	0	0	0	0.2
Dec.	9.7	20	40	20	38	20	0	0	0	0.9
Year	16.0	827	518	*	*	518	309	0	0	*

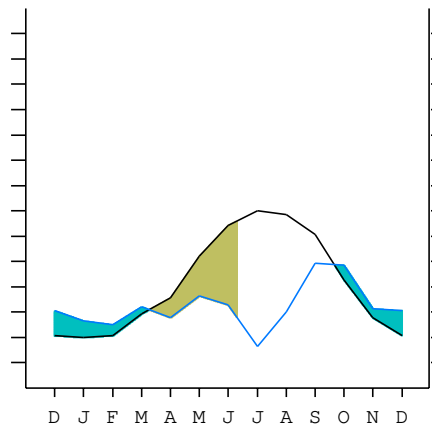
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

REUS (ESP TARRAGONA)

41°9'N    1°7'E    117 m 20/20 y.

T= 16.0    Ic= 15.5    MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 m= 5.6    Tp= 1919    LOW MESOMEDITERRANEAN  
 M= 12.0    Tn= 0    LOW DRY  
 M' = 32.1    Itc= 336  
 m' = -1.0    Io= 2.7  
 P= 518    mm    ———  
 PE= 827    mm    ———

Imbibing	20 Sep.
Saturation	10 Mar.
Reserve Use	10 Jun.
Deficit	



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

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

Thermic types [B1.A3]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 1. Low eutemperate  
 + Thermic type .....: A. Warm  
 + Thermic subtype .....: 3. Subwarm

Bioclimatic types [B8.3b.5b]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 3. MESOMEDITERRANEAN  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....: Mehc.Mme.Dry

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 299  
 Coldest semester of the year.....(Psw): 219  
 Warmest four months period of the year.....(Pcm1): 171  
 Following warmest four months period.....(Pcm2): 188  
 Positive precipitation dryest 3 months.....(Ppd): 94  
 Positive precipitation dryest 2 months.....(Ppd2): 49  
 Positive precipitation dryest 1 month.....(Ppd1): 11  
 Positive precipitation warmest 3 months.....(Pps): 126  
 Positive precipitation warmest 2 months.....(Pps2): 49  
 Positive precipitation warmest 1 month.....(Pps1): 38  
 Positive precipitation coldest 3 months.....(Ppw): 100  
 Positive precipitation coldest 2 months.....(Ppw2): 60  
 Positive precipitation coldest 1 month.....(Ppw1): 31

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	100	130	94	194

Seasonal rainfall rhythms: F > P > W > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 24.3  
 Average coldest month [T].....(Tmin): 8.8  
 Maximum temp. warmest month [M].....(Tmmax): 28.5  
 Minimum temp. coldest month [m].....(Tmmin): 5.4  
 Absolute Max.temp. warmest month [M'].....(Tamax): 32.1  
 Absolute Min.temp. coldest month [m'].....(Tamin): -1.0  
 First warmest contrasted month [M].....(Tcmax): 26.2 (9)  
 First coldest contrasted month [m].....(Tcmin): 17.0 (9)  
 Estival temperature.....(Ts): 695  
 Positive temperature dryest 3 months.....(Tpd): 695  
 Positive temperature dryest 2 months.....(Tpd2): 484  
 Positive temperature dryest 1 month.....(Tpd1): 241  
 Positive temperature warmest 3 months.....(Tps): 700  
 Positive temperature warmest 2 months.....(Tps2): 484  
 Positive temperature warmest 1 month.....(Tps1): 243  
 Positive temperature coldest 3 months.....(Tpw): 279  
 Positive temperature coldest 2 months.....(Tpw2): 182  
 Positive temperature coldest 1 month.....(Tpw1): 88

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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)	o											
Agelid.....[m' > 0] (Pf)		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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.60  
 Mediterranean index of July.[PE/P].....(Im1): 13.29  
 Mediterranean index of July & August.....(Im2): 5.82  
 Mediterranean index of June, July & August....(Im3): 4.27

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	400	310	290	430	350	520	450	110	380	770	760	410
Tp	97	88	94	118	136	172	211	241	243	216	174	129
Io (Iom)	4.12	3.52	3.09	3.64	2.57	3.02	2.13	0.46	1.56	3.56	4.37	3.18
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1000 / 279			1300 / 426			940 / 695			1940 / 519		
Io (Iot)	3.584			3.052			1.353			3.738		
Semesters	December-May						June-November					
Pp(x10)/Tp	2300 / 705						2880 / 1214					
Io (Iosm)	3.262						2.372					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5180/1919=2.70 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	400	310	290	430	350	520	450	110	380	770	760	410
Tp [T*10]	97	88	94	118	136	172	211	241	243	216	174	129
Iom [Pp/Tp]	412	352	309	364	257	302	213	46	156	356	437	318
Avm [200-Iom]	***	***	***	***	***	***	***	154	44	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1000 / 279			1300 / 426			940 / 695			1940 / 519		
Iot [Pp/Tp]	358			305			135			374		
Avs E[Avm<200]	***			***			***			***		
Strong lower arid [1]							Strong upper semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 15.50
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	19.64
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	19.83
+ Hyperoceanic (-20<CI<20)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....	1.05
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T] .....	32.39
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	19.93
+ Semiarid -mediterranean- (20>Ia>15)	
I of Emberger (1930) [Q=100*P/(Tmmax <sup>2</sup> -Tmmin <sup>2</sup> )] .....	66.15
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	3.09
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE] .....	0.63
+ Subhumid - dry (0.65>I>0.5)	
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....	11.45
+ Very low (K<60)	

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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	0.16	0.14	0.21	0.15	0.22	0.17	0.03	0.13	0.30	0.33	0.19	0.20
T-E ratio	3.96	4.23	5.31	6.12	7.74	9.50	10.85	10.93	9.72	7.83	5.80	4.36
Precipitation-effectiveness: 22.27						Temperature-efficiency .....						86.36
Moisture Index [MI=100*(P-PE)/PE] .....												-37.36
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE] .....												37.34
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												826.89
+ Second mesothermic (712<PE<855)												

