

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

RIUDECAÑAS (ESP TARRAGONA)

Altitude: 195 m.

Latitude: 41°8'N Longitude: 0°58'E

Temperature observation period.: 1941-1950 (10)

Rainfall observation period....: 1941-1950 (10)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	5.80	9.60	2.00	15.90	-3.20	31.0	14.66
Feb.	7.30	11.80	2.80	17.40	-2.40	18.0	19.95
Mar.	9.40	14.10	4.60	19.50	0.20	27.0	34.73
Apr.	11.50	16.70	6.30	21.10	3.70	72.0	49.04
May.	13.80	19.70	7.80	22.70	4.70	38.0	70.51
Jun.	18.80	24.40	13.10	29.80	9.00	24.0	107.54
Jul.	19.60	23.80	15.50	30.60	11.60	12.0	114.62
Aug.	21.20	26.50	16.00	31.10	13.00	38.0	119.30
Sep.	17.40	20.70	14.10	28.00	8.60	73.0	80.02
Oct.	14.50	19.10	9.90	23.70	3.60	47.0	57.86
Nov.	9.60	13.80	5.30	19.40	-0.40	41.0	28.44
Dec.	6.60	10.60	2.60	14.50	-2.40	44.0	16.80
Year	12.96	17.57	8.33	22.81	3.83	465	713.47

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	246
Compensated thermicity index.....(Itc):	246
Simple continentality index.....(Ic):	15.4
Diurnality index.....(Id):	11.9
Annual ombrothermic index.....(Io):	2.99
Monthly estival ombrothermic index.....(Ios1):	0.61
Bimonthly estival ombrothermic index.....(Ios2):	1.23
Threemonthly estival ombrothermic index.....(Ios3):	1.24
Fourmonthly estival ombrothermic index.....(Ios4):	1.53
Annual ombro-evaporation index.....(Ioe):	1.00
Annual positive temperature.....(Tp):	1555
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	596
Positive precipitation.....(Pp):	465

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	5	4	2	1	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Euoceanic

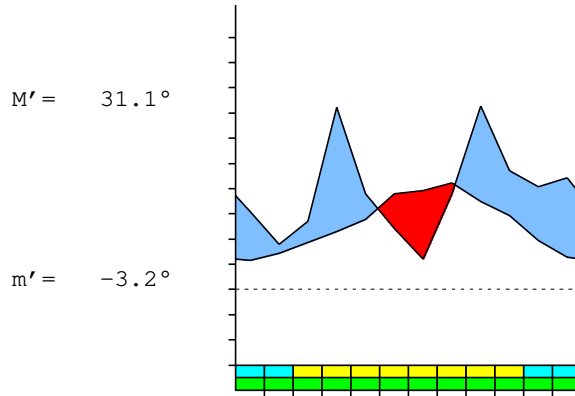
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: UPPER MESOMEDITERRANEAN UPPER DRY

RIUDECAÑAS (ESP TARRAGONA)

195 m

P= 465      41° 8'N      0° 58'E      10/10 y.  
 T= 13.0°    Ic= 15.4      Tp= 1555      Tn= 0  
 m= 2.0°      M= 9.6°      Itc= 246      Io= 3.0



MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 UPPER MESOMEDITERRANEAN UPPER DRY

WATER INDEX CARD      RIUDECAÑAS (ESP TARRAGONA)  
 Altitude: 195 m.      Latitude: 41° 8'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	5.8	15	31	16	56	15	0	0	0	1.1
Feb.	7.3	20	18	-2	54	20	0	0	0	0.0
Mar.	9.4	35	27	-8	46	35	0	0	0	-0.2
Apr.	11.5	49	72	23	69	49	0	0	0	0.4
May.	13.8	71	38	-33	37	71	0	0	0	-0.4
Jun.	18.8	108	24	-37	0	61	47	0	0	-0.7
Jul.	19.6	115	12	0	0	12	103	0	0	-0.8
Aug.	21.2	119	38	0	0	38	81	0	0	-0.6
Sep.	17.4	80	73	0	0	73	7	0	0	0.0
Oct.	14.5	58	47	0	0	47	11	0	0	-0.1
Nov.	9.6	28	41	13	13	28	0	0	0	0.4
Dec.	6.6	17	44	27	40	17	0	0	0	1.6
Year	13.0	713	465	*	*	465	248	0	0	*

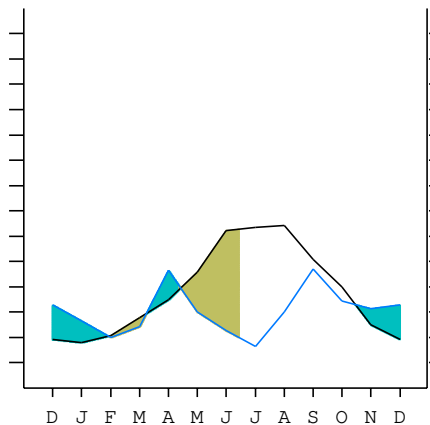
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

RIUDECAÑAS (ESP TARRAGONA)

41°8'N    0°58'E    195 m 10/10 y.

T= 13.0    Ic= 15.4    MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 m= 2.0    Tp= 1555    UPPER MESOMEDITERRANEAN  
 M= 9.6    Tn= 0    UPPER DRY  
 M' = 31.1    Itc= 246  
 m' = -3.2    Io= 3.0  
 P= 465    mm    ———  
 PE= 713    mm    ———

Imbibing	14 Oct.
Saturation	13 Apr.
Reserve Use	14 Jun.
Deficit	



RIUDECAÑAS (ESP TARRAGONA)

Latitude: 41°8'N Longitude: 0°58'E Altitude: 195 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2b]  
 + Type .....: B. Oceanic  
 + Subtype .....: 2. Euoceanic  
 + Variant .....: b. Low  
 Thermic types [B1.B4]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 1. Low eutemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 4. Temperate  
 Bioclimatic types [B8.3a.5a]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 3. MESOMEDITERRANEAN  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : a. UPPER  
 Bioclimatic Classification .....: Mehc.Mme.Dry

RIUDECAÑAS (ESP TARRAGONA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 232  
 Coldest semester of the year.....(Psw): 233  
 Warmest four months period of the year.....(Pcm1): 147  
 Following warmest four months period.....(Pcm2): 163  
 Positive precipitation dryest 3 months.....(Ppd): 74  
 Positive precipitation dryest 2 months.....(Ppd2): 36  
 Positive precipitation dryest 1 month.....(Ppd1): 12  
 Positive precipitation warmest 3 months.....(Pps): 74  
 Positive precipitation warmest 2 months.....(Pps2): 50  
 Positive precipitation warmest 1 month.....(Pps1): 38  
 Positive precipitation coldest 3 months.....(Ppw): 93  
 Positive precipitation coldest 2 months.....(Ppw2): 75  
 Positive precipitation coldest 1 month.....(Ppw1): 31

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	93	137	74	161

Seasonal rainfall rhythms: F > P > W > S

RIUDECAÑAS (ESP TARRAGONA)

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 21.2  
 Average coldest month [T].....(Tmin): 5.8  
 Maximum temp. warmest month [M].....(Tmmax): 26.5  
 Minimum temp. coldest month [m].....(Tmmin): 2.0  
 Absolute Max.temp. warmest month [M'].....(Tamax): 31.1  
 Absolute Min.temp. coldest month [m'].....(Tamin): -3.2  
 First warmest contrasted month [M].....(Tcmax): 19.7 (5)  
 First coldest contrasted month [m].....(Tcmin): 7.8 (5)  
 Estival temperature.....(Ts): 596  
 Positive temperature dryest 3 months.....(Tpd): 522  
 Positive temperature dryest 2 months.....(Tpd2): 384  
 Positive temperature dryest 1 month.....(Tpd1): 196  
 Positive temperature warmest 3 months.....(Tps): 596  
 Positive temperature warmest 2 months.....(Tps2): 408  
 Positive temperature warmest 1 month.....(Tps1): 212  
 Positive temperature coldest 3 months.....(Tpw): 197  
 Positive temperature coldest 2 months.....(Tpw2): 124  
 Positive temperature coldest 1 month.....(Tpw1): 58

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.53  
 Mediterranean index of July.[PE/P].....(Im1): 9.55  
 Mediterranean index of July & August.....(Im2): 4.68  
 Mediterranean index of June, July & August....(Im3): 4.61

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	440	310	180	270	720	380	240	120	380	730	470	410
Tp	66	58	73	94	115	138	188	196	212	174	145	96
Io (Iom)	6.67	5.34	2.47	2.87	6.26	2.75	1.28	0.61	1.79	4.20	3.24	4.27
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	930 / 197			1370 / 347			740 / 596			1610 / 415		
Io (Iot)	4.721			3.948			1.242			3.880		
Semesters	December-May						June-November					
Pp(x10)/Tp	2300 / 544						2350 / 1011					
Io (Iosm)	4.228						2.324					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 4650/1555=2.99 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	440	310	180	270	720	380	240	120	380	730	470	410
Tp [T*10]	66	58	73	94	115	138	188	196	212	174	145	96
Iom [Pp/Tp]	667	534	247	287	626	275	128	61	179	420	324	427
Avm [200-Iom]	***	***	***	***	***	***	72	139	21	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	930 / 197			1370 / 347			740 / 596			1610 / 415		
Iot [Pp/Tp]	472			395			124			388		
Avs E[Avm<200]	***			***			232			***		
Weak lower arid [1]							Weak lower semiarid [2]					
Weak upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 15.40
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	19.40
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	19.62
+ 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] .....	35.88
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	20.25
+ Subhumid (30>Ia>20)	
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....	66.60
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	2.79
+ Semiarid (3>DR>2)	
Aridity Index of UNEP [I=P/PE] .....	0.65
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....	11.46
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

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

- + Climate .....
- + Region .....
- + Thermic type: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.18	0.09	0.13	0.37	0.17	0.09	0.04	0.14	0.31	0.21	0.21	0.25
T-E ratio	2.61	3.29	4.23	5.18	6.21	8.46	8.82	9.54	7.83	6.52	4.32	2.97
Precipitation-effectiveness: 21.89						Temperature-efficiency .....						69.98
Moisture Index [MI=100*(P-PE)/PE] .....												-34.83
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE] .....												34.82
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												713.47
+ Second mesothermic (712<PE<855)												

