

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

ALELLA (ESP BARCELONA) Altitude: 88 m.

Latitude: 41°30'N Longitude: 2°18'E
 Temperature observation period.: 1946-1969 (24)
 Rainfall observation period....: 1946-1969 (24)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	8.50	12.30	4.70	17.90	-0.10	30.0	17.51
Feb.	9.20	13.50	4.90	20.20	-0.50	38.0	19.90
Mar.	11.60	16.00	7.10	21.00	1.90	48.0	36.39
Apr.	13.80	18.40	9.10	24.30	5.00	46.0	52.43
May.	17.20	22.00	12.40	27.20	7.40	49.0	84.27
Jun.	20.80	25.80	15.80	31.80	11.60	34.0	115.56
Jul.	23.70	28.80	18.70	33.40	14.90	22.0	143.89
Aug.	23.20	27.90	18.50	33.40	15.00	45.0	129.23
Sep.	21.30	25.80	16.90	30.50	12.70	72.0	98.34
Oct.	17.20	21.50	12.90	26.10	7.30	75.0	63.54
Nov.	12.70	16.90	8.50	22.30	4.00	51.0	33.55
Dec.	9.60	13.00	6.10	18.10	0.40	49.0	20.54
Year	15.73	20.16	11.30	25.52	6.63	559	815.14

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	327
Compensated thermicity index.....(Itc):	327
Simple continentality index.....(Ic):	15.2
Diurnality index.....(Id):	10.1
Annual ombrothermic index.....(Io):	2.96
Monthly estival ombrothermic index.....(Ios1):	0.93
Bimonthly estival ombrothermic index.....(Ios2):	1.43
Threemonthly estival ombrothermic index.....(Ios3):	1.49
Fourmonthly estival ombrothermic index.....(Ios4):	1.77
Annual ombro-evaporation index.....(Ioe):	0.69
Annual positive temperature.....(Tp):	1888
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	677
Positive precipitation.....(Pp):	559

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

Latitudinal Belt....: Low Eutemperate

Continentality.....: Oceanic - Low Euoceanic

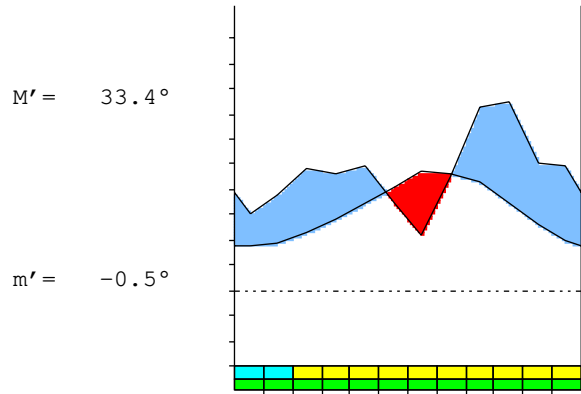
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt....: LOW MESOMEDITERRANEAN UPPER DRY

ALELLA (ESP BARCELONA)

88 m

P= 559 41° 30'N 2° 18'E 24/24 y.
 T= 15.7 ° Ic= 15.2 Tp= 1888 Tn= 0
 m= 4.7 ° M= 12.3 ° Itc= 327 Io= 3.0



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 LOW MESOMEDITERRANEAN UPPER DRY

WATER INDEX CARD ALELLA (ESP BARCELONA)
 Altitude: 88 m. Latitude: 41° 30'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	8.5	18	30	12	70	18	0	0	0	0.7
Feb.	9.2	20	38	18	88	20	0	0	0	0.9
Mar.	11.6	36	48	12	100	36	0	0	0	0.3
Apr.	13.8	52	46	-6	93	52	0	0	0	-0.1
May.	17.2	84	49	-35	58	84	0	0	0	-0.4
Jun.	20.8	116	34	-58	0	92	24	0	0	-0.7
Jul.	23.7	144	22	0	0	22	122	0	0	-0.8
Aug.	23.2	129	45	0	0	45	84	0	0	-0.6
Sep.	21.3	98	72	0	0	72	26	0	0	-0.2
Oct.	17.2	64	75	11	11	64	0	0	0	0.1
Nov.	12.7	34	51	17	29	34	0	0	0	0.5
Dec.	9.6	21	49	28	57	21	0	0	0	1.3
Year	15.7	815	559	*	*	559	256	0	0	*

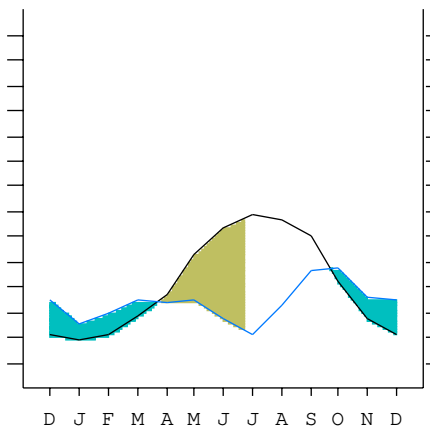
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

ALELLA (ESP BARCELONA)

41°30'N 2°18'E 88 m 24/24 y.

T= 15.7 Ic= 15.2 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 4.7 Tp= 1888 LOW MESOMEDITERRANEAN
 M= 12.3 Tn= 0 UPPER DRY
 M' = 33.4 Itc= 327
 m' = -0.5 Io= 3.0
 P= 559 mm ———
 PE= 815 mm ———

Imbibing	21 Sep.
Saturation	20 Mar.
Reserve Use	22 Jun.
Deficit	



ALELLA (ESP BARCELONA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B2b]
 + Type: B. Oceanic
 + Subtype: 2. Euroceanic
 + 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.5a]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant .:
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : a. UPPER

Bioclimatic ClassificationMepo.Mme.Dry.Euo

ALELLA (ESP BARCELONA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 297
 Coldest semester of the year.....(Psw): 262
 Warmest four months period of the year.....(Pcm1): 173
 Following warmest four months period.....(Pcm2): 205
 Positive precipitation dryest 3 months.....(Ppd): 101
 Positive precipitation dryest 2 months.....(Ppd2): 56
 Positive precipitation dryest 1 month.....(Ppd1): 22
 Positive precipitation warmest 3 months.....(Pps): 139
 Positive precipitation warmest 2 months.....(Pps2): 67
 Positive precipitation warmest 1 month.....(Pps1): 22
 Positive precipitation coldest 3 months.....(Ppw): 117
 Positive precipitation coldest 2 months.....(Ppw2): 68
 Positive precipitation coldest 1 month.....(Ppw1): 30

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	117	143	101	198

Seasonal rainfall rhythms: F > P > W > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 23.7
 Average coldest month [T].....(Tmin): 8.5
 Maximum temp. warmest month [M].....(Tmmax): 28.8
 Minimum temp. coldest month [m].....(Tmmin): 4.7
 Absolute Max.temp. warmest month [M'].....(Tamax): 33.4
 Absolute Min.temp. coldest month [m'].....(Tamin): -0.5
 First warmest contrasted month [M].....(Tcmax): 28.8 (7)
 First coldest contrasted month [m].....(Tcmin): 18.7 (7)
 Estival temperature.....(Ts): 677
 Positive temperature dryest 3 months.....(Tpd): 677
 Positive temperature dryest 2 months.....(Tpd2): 445
 Positive temperature dryest 1 month.....(Tpd1): 237
 Positive temperature warmest 3 months.....(Tps): 682
 Positive temperature warmest 2 months.....(Tps2): 469
 Positive temperature warmest 1 month.....(Tps1): 237
 Positive temperature coldest 3 months.....(Tpw): 273
 Positive temperature coldest 2 months.....(Tpw2): 177
 Positive temperature coldest 1 month.....(Tpw1): 85

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.46
 Mediterranean index of July.[PE/P].....(Im1): 6.54
 Mediterranean index of July & August.....(Im2): 4.08
 Mediterranean index of June, July & August....(Im3): 3.85

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	490	300	380	480	460	490	340	220	450	720	750	510
Tp	96	85	92	116	138	172	208	237	232	213	172	127
Io (Iom)	5.10	3.53	4.13	4.14	3.33	2.85	1.63	0.93	1.94	3.38	4.36	4.02
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1170 / 273			1430 / 426			1010 / 677			1980 / 512		
Io (Iot)	4.286			3.357			1.492			3.867		
Semesters	December-May						June-November					
Pp(x10)/Tp	2600 / 699						2990 / 1189					
Io (Iosm)	3.720						2.515					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5590/1888=2.96 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	490	300	380	480	460	490	340	220	450	720	750	510
TP [T*10]	96	85	92	116	138	172	208	237	232	213	172	127
Iom [Pp/TP]	510	353	413	414	333	285	163	93	194	338	436	402
Avm [200-Iom]	***	***	***	***	***	***	37	107	6	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1170 / 273			1430 / 426			1010 / 677			1980 / 512		
Iot [Pp/TP]	429			336			149			387		
Avs E[Avm<200]	***			***			150			***		
Weak upper arid [1]						Strong upper semiarid [2]						
Weak upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 15.20
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 18.60
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 19.02
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 1.02
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: 35.53
 + Steppic (40>R>0)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 21.72
 + Subhumid (30>Ia>20)
 I of Emberger (1930) [Q=100*P/(Tmmax²-Tmmin²)]: 69.24
 + Subhumid (90>Q>50)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 2.81
 + Semiarid (3>DR>2)
 Aridity Index of UNEP [I=P/PE]: 0.69
 + Humid (I>0.65)
 Potencial Erosion I of Fournier (1960) [K=Pi²/P].....: 10.06
 + 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: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.15	0.20	0.23	0.21	0.20	0.12	0.07	0.16	0.28	0.33	0.24	0.26
T-E ratio	3.82	4.14	5.22	6.21	7.74	9.36	10.67	10.44	9.58	7.74	5.71	4.32
Precipitation-effectiveness: 24.51						Temperature-efficiency: 84.96						
Moisture Index [MI=100*(P-PE)/PE]: -31.42 + C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE]: 31.42 + Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE]: 0.00 + No surplus (0<HI<10)												
Potential Evapotranspiration PE: 815.14 + Second mesothermic (712<PE<855)												

