

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

SAN ADRIAN (ESP NAVARRA)

Altitude: 320 m.

Latitude: 42°19'N Longitude: 1°54'W

Temperature observation period.: 1981-1991 (11)

Rainfall observation period....: 1981-1991 (11)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	5.60	9.40	1.70	15.30	-3.20	23.7	11.85
Feb.	7.40	11.60	3.20	18.00	-2.70	30.1	17.69
Mar.	9.70	14.80	4.70	22.70	-0.80	24.1	32.79
Apr.	11.70	16.80	6.70	24.40	2.00	55.0	46.69
May.	15.40	20.90	9.90	28.30	4.70	44.6	77.96
Jun.	19.70	26.10	13.30	35.30	7.70	42.7	111.96
Jul.	22.90	29.70	16.00	37.20	11.30	21.7	140.09
Aug.	22.10	28.70	15.50	35.30	9.80	18.8	123.75
Sep.	19.80	26.10	13.60	33.40	8.50	16.2	92.35
Oct.	15.20	20.50	9.80	26.70	3.60	32.9	57.69
Nov.	9.90	14.00	5.90	21.10	-0.70	53.5	26.89
Dec.	6.70	10.20	3.20	16.70	-1.70	27.6	14.78
Year	13.84	19.07	8.63	26.20	3.21	391	754.50

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	249
Compensated thermicity index.....(Itc):	249
Simple continentality index.....(Ic):	17.3
Diurnality index.....(Id):	13.7
Annual ombrothermic index.....(Io):	2.35
Monthly estival ombrothermic index.....(Ios1):	0.85
Bimonthly estival ombrothermic index.....(Ios2):	0.90
Threemonthly estival ombrothermic index.....(Ios3):	1.29
Fourmonthly estival ombrothermic index.....(Ios4):	1.60
Annual ombro-evaporation index.....(Ioe):	0.83
Annual positive temperature.....(Tp):	1661
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	647
Positive precipitation.....(Pp):	391

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	5	4	0	3	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Semicontinental

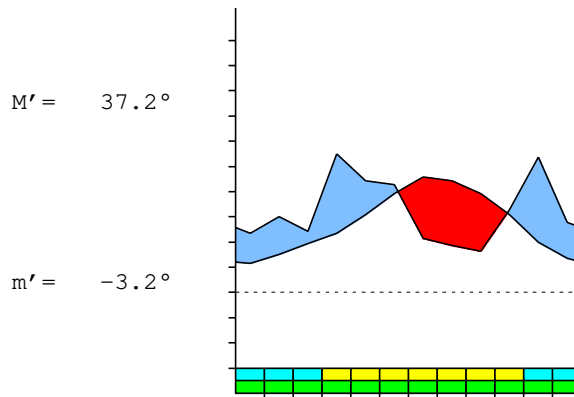
Bioclimate(Variant): MEDITERRANEAN PLUVISEASONAL-OCEANIC (STEPPIC)

Bioclimatic Belt...: UPPER MESOMEDITERRANEAN LOW DRY

SAN ADRIAN (ESP NAVARRA)

320 m

P= 391 42° 19'N 1° 54'W 11/11 y.
 T= 13.8° Ic= 17.3 Tp= 1661 Tn= 0
 m= 1.7° M= 9.4° Itc= 249 Io= 2.4



MEDITERRANEAN PLUVISEASONAL-OCEANIC (STEPPIC)
 UPPER MESOMEDITERRANEAN LOW DRY

WATER INDEX CARD
 Altitude: 320 m.

SAN ADRIAN (ESP NAVARRA)
 Latitude: 42° 19'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	5.6	12	24	12	51	12	0	0	0	0.9
Feb.	7.4	18	30	12	64	18	0	0	0	0.7
Mar.	9.7	33	24	-9	55	33	0	0	0	-0.2
Apr.	11.7	47	55	8	63	47	0	0	0	0.1
May.	15.4	78	45	-33	30	78	0	0	0	-0.4
Jun.	19.7	112	43	-30	0	73	39	0	0	-0.6
Jul.	22.9	140	22	0	0	22	118	0	0	-0.8
Aug.	22.1	124	19	0	0	19	105	0	0	-0.8
Sep.	19.8	92	16	0	0	16	76	0	0	-0.8
Oct.	15.2	58	33	0	0	33	25	0	0	-0.4
Nov.	9.9	27	54	27	27	27	0	0	0	0.9
Dec.	6.7	15	28	13	39	15	0	0	0	0.8
Year	13.8	755	391	*	*	391	364	0	0	*

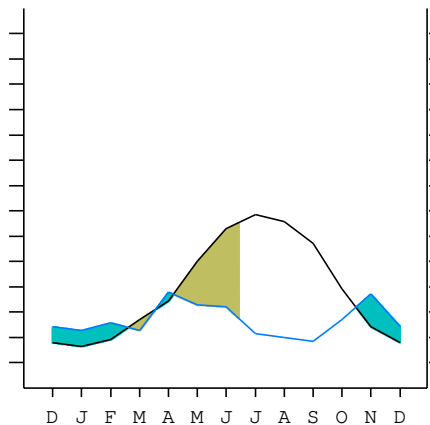
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

SAN ADRIAN (ESP NAVARRA)

42°19'N 1°54'W 320 m 11/11 y.

T= 13.8 Ic= 17.3 MEDITERRANEAN PLUVISEASONAL-OCEANIC (STEPPIC)
 m= 1.7 Tp= 1661 UPPER MESOMEDITERRANEAN
 M= 9.4 Tn= 0 LOW DRY
 M' = 37.2 Itc= 249
 m' = -3.2 Io= 2.4
 P= 391 mm
 PE= 755 mm

Imbibing	15 Oct.
Saturation	6 Apr.
Reserve Use	13 Jun.
Deficit	



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental 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 [B8a.3a.5b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant ..: a. STEPPIC
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Mehc(Stp).Mme.Dry

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 177
 Coldest semester of the year.....(Psw): 214
 Warmest four months period of the year.....(Pcm1): 99
 Following warmest four months period.....(Pcm2): 138
 Positive precipitation dryest 3 months.....(Ppd): 57
 Positive precipitation dryest 2 months.....(Ppd2): 35
 Positive precipitation dryest 1 month.....(Ppd1): 16
 Positive precipitation warmest 3 months.....(Pps): 57
 Positive precipitation warmest 2 months.....(Pps2): 41
 Positive precipitation warmest 1 month.....(Pps1): 22
 Positive precipitation coldest 3 months.....(Ppw): 81
 Positive precipitation coldest 2 months.....(Ppw2): 51
 Positive precipitation coldest 1 month.....(Ppw1): 24

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	81	123	83	102

Seasonal rainfall rhythms: P > F > S > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 22.9
 Average coldest month [T].....(Tmin): 5.6
 Maximum temp. warmest month [M].....(Tmmax): 29.7
 Minimum temp. coldest month [m].....(Tmmin): 1.7
 Absolute Max.temp. warmest month [M'].....(Tamax): 37.2
 Absolute Min.temp. coldest month [m'].....(Tamin): -3.2
 First warmest contrasted month [M].....(Tcmax): 29.7 (7)
 First coldest contrasted month [m].....(Tcmin): 16.0 (7)
 Estival temperature.....(Ts): 647
 Positive temperature dryest 3 months.....(Tpd): 648
 Positive temperature dryest 2 months.....(Tpd2): 419
 Positive temperature dryest 1 month.....(Tpd1): 198
 Positive temperature warmest 3 months.....(Tps): 648
 Positive temperature warmest 2 months.....(Tps2): 450
 Positive temperature warmest 1 month.....(Tps1): 229
 Positive temperature coldest 3 months.....(Tpw): 197
 Positive temperature coldest 2 months.....(Tpw2): 123
 Positive temperature coldest 1 month.....(Tpw1): 56

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.93
 Mediterranean index of July.[PE/P].....(Im1): 6.46
 Mediterranean index of July & August.....(Im2): 6.51
 Mediterranean index of June, July & August....(Im3): 4.52

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	276	237	301	241	550	446	427	217	188	162	329	535
Tp	67	56	74	97	117	154	197	229	221	198	152	99
Io (Iom)	4.12	4.23	4.07	2.48	4.70	2.90	2.17	0.95	0.85	0.82	2.16	5.40
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	814 / 197			1237 / 368			832 / 647			1026 / 449		
Io (Iot)	4.132			3.361			1.286			2.285		
Semesters	December-May						June-November					
Pp(x10)/Tp	2051 / 565						1858 / 1096					
Io (Iosm)	3.630						1.695					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 3909/1661=2.35 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	276	237	301	241	550	446	427	217	188	162	329	535
Tp [T*10]	67	56	74	97	117	154	197	229	221	198	152	99
Iom [Pp/Tp]	412	423	407	248	470	290	217	95	85	82	216	540
Avm [200-Iom]	***	***	***	***	***	***	***	105	115	118	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	814 / 197			1237 / 368			832 / 647			1026 / 449		
Iot [Pp/Tp]	413			336			129			229		
Avs E[Avm<200]	***			***			***			***		
Weak upper arid [3]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 17.30
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	23.29
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	23.16
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.15
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	28.24
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	16.40
+ Semiarid -mediterranean- (20>Ia>15)	
I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)]	44.46
+ Semiarid (50>Q>30)	
I of Dantin & Revenga (1940) [DR=100*T/P]	3.54
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE]	0.52
+ Subhumid - dry (0.65>I>0.5)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P].....	7.74
+ 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	0.13	0.16	0.12	0.27	0.19	0.16	0.07	0.06	0.06	0.14	0.28	0.15
T-E ratio	2.52	3.33	4.36	5.26	6.93	8.87	10.30	9.95	8.91	6.84	4.45	3.01
Precipitation-effectiveness: 17.90						Temperature-efficiency						74.74
Moisture Index [MI=100*(P-PE)/PE]												-48.19
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]												48.19
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE												754.50
+ Second mesothermic (712<PE<855)												

