

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

SARTAGUDA (ESP NAVARRA)

Altitude: 335 m.

Latitude: 42°23'N Longitude: 2°3'W

Temperature observation period.: 1936-1969 (34)

Rainfall observation period....: 1936-1969 (34)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	5.20	9.00	1.40	16.20	-4.90	35.0	11.61
Feb.	6.60	11.10	2.00	17.30	-3.70	30.0	16.16
Mar.	9.80	15.30	4.20	22.10	-1.00	34.0	35.09
Apr.	12.30	17.90	6.80	25.30	1.50	47.0	52.26
May.	15.20	21.30	9.10	29.60	3.60	51.0	78.83
Jun.	19.50	26.00	13.00	34.10	7.80	52.0	112.19
Jul.	22.10	29.20	15.10	36.00	10.20	35.0	134.48
Aug.	21.60	28.40	14.90	35.40	10.60	29.0	121.13
Sep.	18.60	24.50	12.80	31.10	7.50	47.0	86.05
Oct.	13.80	19.00	8.50	25.60	2.70	48.0	51.99
Nov.	9.00	13.30	4.60	19.90	-1.60	58.0	24.82
Dec.	5.80	9.20	2.40	14.50	-3.40	46.0	13.01
Year	13.29	18.68	7.90	25.59	2.44	512	737.63

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	237
Compensated thermicity index.....(Itc):	237
Simple continentality index.....(Ic):	16.9
Diurnality index.....(Id):	14.1
Annual ombrothermic index.....(Io):	3.21
Monthly estival ombrothermic index.....(Ios1):	1.34
Bimonthly estival ombrothermic index.....(Ios2):	1.46
Threemonthly estival ombrothermic index.....(Ios3):	1.84
Fourmonthly estival ombrothermic index.....(Ios4):	2.13
Annual ombro-evaporation index.....(Ioe):	1.05
Annual positive temperature.....(Tp):	1595
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	632
Positive precipitation.....(Pp):	512

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	4	6	2	0	0

Latitudinal Belt...: Low eutemperate

Continentality.....: Oceanic - Low Euoceanic

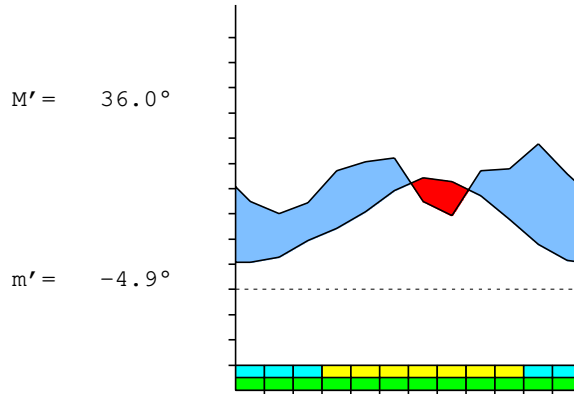
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: UPPER MESOMEDITERRANEAN UPPER DRY

SARTAGUDA (ESP NAVARRA)

335 m

P= 512 42° 23'N 2° 3'W 34/34 y.
 T= 13.3° Ic= 16.9 Tp= 1595 Tn= 0
 m= 1.4° M= 9.0° Itc= 237 Io= 3.2



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 UPPER MESOMEDITERRANEAN UPPER DRY

WATER INDEX CARD
 Altitude: 335 m.

SARTAGUDA (ESP NAVARRA)
 Latitude: 42° 23'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	5.2	12	35	23	90	12	0	0	0	2.0
Feb.	6.6	16	30	10	100	16	0	3	2	0.8
Mar.	9.8	35	34	-1	99	35	0	0	1	0.0
Apr.	12.3	52	47	-5	94	52	0	0	0	-0.1
May.	15.2	79	51	-28	66	79	0	0	0	-0.3
Jun.	19.5	112	52	-60	6	112	0	0	0	-0.5
Jul.	22.1	134	35	-6	0	41	94	0	0	-0.7
Aug.	21.6	121	29	0	0	29	92	0	0	-0.7
Sep.	18.6	86	47	0	0	47	39	0	0	-0.4
Oct.	13.8	52	48	0	0	48	4	0	0	0.0
Nov.	9.0	25	58	33	33	25	0	0	0	1.3
Dec.	5.8	13	46	33	66	13	0	0	0	2.5
Year	13.3	738	512	*	*	509	229	3	3	*

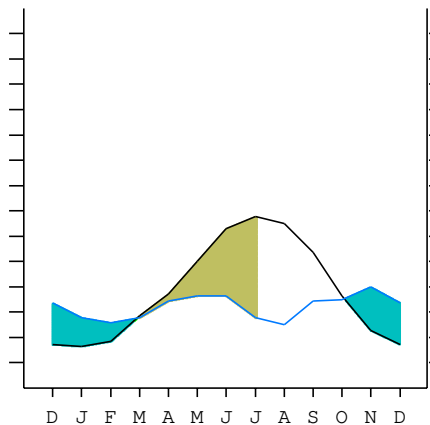
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

SARTAGUDA (ESP NAVARRA)

42°23'N 2°3'W 335 m 34/34 y.

T= 13.3 Ic= 16.9 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 1.4 Tp= 1595 UPPER MESOMEDITERRANEAN
 M= 9.0 Tn= 0 UPPER DRY
 M' = 36.0 Itc= 237
 m' = -4.9 Io= 3.2
 P= 512 mm ———
 PE= 738 mm ———

Imbibing	4 Oct.
Saturation	23 Feb.
Reserve Use	28 Feb.
Deficit	2 Jul.



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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

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 262
 Coldest semester of the year.....(Psw): 250
 Warmest four months period of the year.....(Pcm1): 163
 Following warmest four months period.....(Pcm2): 187
 Positive precipitation dryest 3 months.....(Ppd): 99
 Positive precipitation dryest 2 months.....(Ppd2): 64
 Positive precipitation dryest 1 month.....(Ppd1): 29
 Positive precipitation warmest 3 months.....(Pps): 116
 Positive precipitation warmest 2 months.....(Pps2): 64
 Positive precipitation warmest 1 month.....(Pps1): 35
 Positive precipitation coldest 3 months.....(Ppw): 111
 Positive precipitation coldest 2 months.....(Ppw2): 81
 Positive precipitation coldest 1 month.....(Ppw1): 35

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	111	132	116	153

Seasonal rainfall rhythms: F > P > S > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 22.1
 Average coldest month [T].....(Tmin): 5.2
 Maximum temp. warmest month [M].....(Tmmax): 29.2
 Minimum temp. coldest month [m].....(Tmmin): 1.4
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.0
 Absolute Min.temp. coldest month [m'].....(Tamin): -4.9
 First warmest contrasted month [M].....(Tcmax): 29.2 (7)
 First coldest contrasted month [m].....(Tcmin): 15.1 (7)
 Estival temperature.....(Ts): 632
 Positive temperature dryest 3 months.....(Tpd): 216
 Positive temperature dryest 2 months.....(Tpd2): 164
 Positive temperature dryest 1 month.....(Tpd1): 216
 Positive temperature warmest 3 months.....(Tps): 632
 Positive temperature warmest 2 months.....(Tps2): 437
 Positive temperature warmest 1 month.....(Tps1): 221
 Positive temperature coldest 3 months.....(Tpw): 176
 Positive temperature coldest 2 months.....(Tpw2): 110
 Positive temperature coldest 1 month.....(Tpw1): 52

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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): 1.44
 Mediterranean index of July.[PE/P].....(Im1): 3.84
 Mediterranean index of July & August.....(Im2): 3.99
 Mediterranean index of June, July & August....(Im3): 3.17

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	460	350	300	340	470	510	520	350	290	470	480	580
Tp	58	52	66	98	123	152	195	221	216	186	138	90
Io (Iom)	7.93	6.73	4.55	3.47	3.82	3.36	2.67	1.58	1.34	2.53	3.48	6.44
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1110 / 176			1320 / 373			1160 / 632			1530 / 414		
Io (Iot)	6.307			3.539			1.835			3.696		
Semesters	December-May						June-November					
Pp(x10)/Tp	2430 / 549						2690 / 1046					
Io (Iosm)	4.426						2.572					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5120/1595=3.21 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	460	350	300	340	470	510	520	350	290	470	480	580
Tp [T*10]	58	52	66	98	123	152	195	221	216	186	138	90
Iom [Pp/Tp]	793	673	455	347	382	336	267	158	134	253	348	644
Avm [200-Iom]	***	***	***	***	***	***	***	42	66	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1110 / 176			1320 / 373			1160 / 632			1530 / 414		
Iot [Pp/Tp]	631			354			184			370		
Avs E[Avm<200]	***			***			***			***		
Weak lower semiarid [1]							Strong upper semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 16.90
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	22.22
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	22.27
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.12
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	38.52
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	21.98
+ Subhumid (30>Ia>20)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	60.19
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P]	2.60
+ Semiarid (3>DR>2)	
Aridity Index of UNEP [I=P/PE]	0.69
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	6.57
+ 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	0.21	0.16	0.17	0.22	0.22	0.20	0.12	0.10	0.19	0.22	0.31	0.27
T-E ratio	2.34	2.97	4.41	5.54	6.84	8.77	9.95	9.72	8.37	6.21	4.05	2.61
Precipitation-effectiveness: 24.11						Temperature-efficiency						71.78
Moisture Index [MI=100*(P-PE)/PE]												-30.59
+ C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE]												31.05
+ Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE]												0.45
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE												737.63
+ Second mesothermic (712<PE<855)												

