

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

PANTANO DE GUADALMENA (ESP JAEN)

Altitude: 602 m.

Latitude: 38°21'N Longitude: 2°54'W

Temperature observation period.: 1967-1989 (23)

Rainfall observation period....: 1967-1989 (23)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	7.00	12.90	1.20	19.50	-4.40	56.9	12.66
Feb.	8.10	14.20	2.10	21.30	-3.30	70.2	15.93
Mar.	10.10	17.00	3.10	25.60	-2.10	57.5	28.13
Apr.	13.20	20.30	6.00	28.40	1.20	58.7	46.78
May.	16.50	24.20	8.80	32.90	3.60	51.2	75.65
Jun.	22.40	31.20	13.60	39.00	8.20	22.3	126.46
Jul.	27.00	37.10	16.80	42.80	12.90	10.9	174.38
Aug.	26.10	35.90	16.30	41.80	12.10	9.0	153.65
Sep.	22.50	31.80	13.10	38.00	7.90	17.7	106.84
Oct.	16.50	24.40	8.60	33.40	2.50	48.1	59.05
Nov.	11.30	17.60	5.00	26.00	-1.00	52.1	27.62
Dec.	7.90	13.40	2.30	19.90	-3.50	63.2	15.10
Year	15.72	23.33	8.07	30.72	2.84	518	842.24

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	298
Compensated thermicity index.....(Itc):	308
Simple continentality index.....(Ic):	20.0
Diurnality index.....(Id):	20.3
Annual ombrothermic index.....(Io):	2.75
Monthly estival ombrothermic index.....(Ios1):	0.34
Bimonthly estival ombrothermic index.....(Ios2):	0.37
Threemonthly estival ombrothermic index.....(Ios3):	0.56
Fourmonthly estival ombrothermic index.....(Ios4):	1.02
Annual ombro-evaporation index.....(Ioe):	0.44
Annual positive temperature.....(Tp):	1886
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	755
Positive precipitation.....(Pp):	518

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

Latitudinal Belt...: Low eutemperate

Continentality.....: Oceanic - High Semicontinental

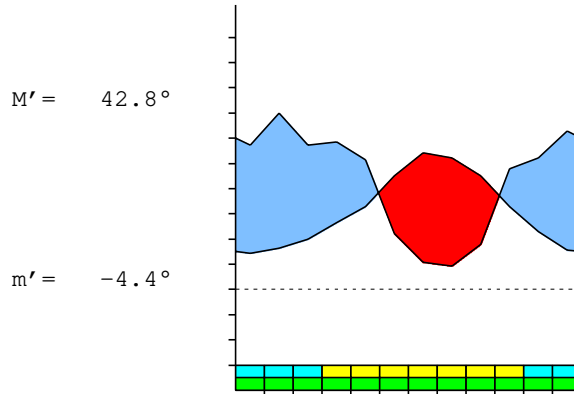
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: LOW MESOMEDITERRANEAN LOW DRY

PANTANO DE GUADALMENA (ESP JAEN)

602 m

P= 518 38° 21'N 2° 54'W 23/23 y.
 T= 15.7° Ic= 20.0 Tp= 1886 Tn= 0
 m= 1.2° M= 12.9° Itc= 308 Io= 2.7



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 LOW MESOMEDITERRANEAN LOW DRY

WATER INDEX CARD

PANTANO DE GUADALMENA (ESP JAEN)

Altitude: 602 m.

Latitude: 38° 21'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	7.0	13	57	27	100	13	0	17	8	3.4
Feb.	8.1	16	70	0	100	16	0	54	31	3.4
Mar.	10.1	28	58	0	100	28	0	29	30	1.0
Apr.	13.2	47	59	0	100	47	0	12	21	0.2
May.	16.5	76	51	-24	76	76	0	0	11	-0.3
Jun.	22.4	126	22	-76	0	98	29	0	5	-0.8
Jul.	27.0	174	11	0	0	11	163	0	3	-0.9
Aug.	26.1	154	9	0	0	9	145	0	1	-0.9
Sep.	22.5	107	18	0	0	18	89	0	1	-0.8
Oct.	16.5	59	48	0	0	48	11	0	0	-0.1
Nov.	11.3	28	52	24	24	28	0	0	0	0.8
Dec.	7.9	15	63	48	73	15	0	0	0	3.1
Year	15.7	842	518	*	*	405	437	112	112	*

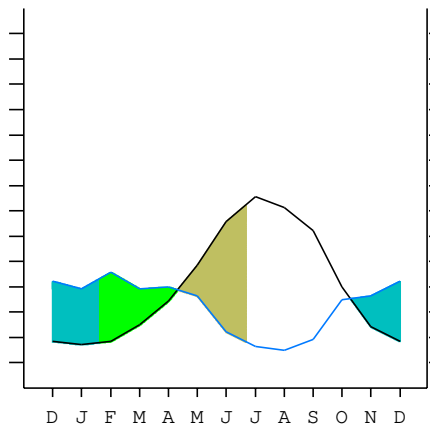
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

PANTANO DE GUADALMENA (ESP JAEN)

38°21'N 2°54'W 602 m 23/23 y.

T= 15.7 Ic= 20.0 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 1.2 Tp= 1886 LOW MESOMEDITERRANEAN
 M= 12.9 Tn= 0 LOW DRY
 M' = 42.8 Itc= 308
 m' = -4.4 Io= 2.7
 P= 518 mm ———
 PE= 842 mm ———

Imbibing	10 Oct.
Saturation	19 Jan.
Reserve Use	10 Apr.
Deficit	22 Jun.



PANTANO DE GUADALMENA (ESP JAEN)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1b]
 + Type: B. Oceanic
 + Subtype: 1. Semicontinental
 + Variant: b. High
 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): 159
 Coldest semester of the year.....(Psw): 359
 Warmest four months period of the year.....(Pcm1): 60
 Following warmest four months period.....(Pcm2): 220
 Positive precipitation dryest 3 months.....(Ppd): 38
 Positive precipitation dryest 2 months.....(Ppd2): 20
 Positive precipitation dryest 1 month.....(Ppd1): 9
 Positive precipitation warmest 3 months.....(Pps): 38
 Positive precipitation warmest 2 months.....(Pps2): 20
 Positive precipitation warmest 1 month.....(Pps1): 11
 Positive precipitation coldest 3 months.....(Ppw): 190
 Positive precipitation coldest 2 months.....(Ppw2): 120
 Positive precipitation coldest 1 month.....(Ppw1): 57

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	190	167	42	117

Seasonal rainfall rhythms: W > P > F > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 27.0
 Average coldest month [T].....(Tmin): 7.0
 Maximum temp. warmest month [M].....(Tmmax): 37.1
 Minimum temp. coldest month [m].....(Tmmin): 1.2
 Absolute Max.temp. warmest month [M'].....(Tamax): 42.8
 Absolute Min.temp. coldest month [m'].....(Tamin): -4.4
 First warmest contrasted month [M].....(Tcmax): 37.1 (7)
 First coldest contrasted month [m].....(Tcmin): 16.8 (7)
 Estival temperature.....(Ts): 755
 Positive temperature dryest 3 months.....(Tpd): 756
 Positive temperature dryest 2 months.....(Tpd2): 531
 Positive temperature dryest 1 month.....(Tpd1): 261
 Positive temperature warmest 3 months.....(Tps): 756
 Positive temperature warmest 2 months.....(Tps2): 531
 Positive temperature warmest 1 month.....(Tps1): 270
 Positive temperature coldest 3 months.....(Tpw): 230
 Positive temperature coldest 2 months.....(Tpw2): 149
 Positive temperature coldest 1 month.....(Tpw1): 70

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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): 1.63
 Mediterranean index of July.[PE/P].....(Im1): 16.00
 Mediterranean index of July & August.....(Im2): 16.48
 Mediterranean index of June, July & August....(Im3): 10.77

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	632	569	702	575	587	512	223	109	90	177	481	521
Tp	79	70	81	101	132	165	224	270	261	225	165	113
Io (Iom)	8.00	8.13	8.67	5.69	4.45	3.10	1.00	0.40	0.34	0.79	2.92	4.61
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1903 / 230			1674 / 398			422 / 755			1179 / 503		
Io (Iot)	8.274			4.206			0.559			2.344		
Semesters	December-May						June-November					
Pp(x10)/Tp	3577 / 628						1601 / 1258					
Io (Iosm)	5.696						1.273					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5178/1886=2.75 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	632	569	702	575	587	512	223	109	90	177	481	521
Tp [T*10]	79	70	81	101	132	165	224	270	261	225	165	113
Iom [Pp/Tp]	800	813	867	569	445	310	100	40	34	79	292	461
Avm [200-Iom]	***	***	***	***	***	***	100	160	166	121	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1903 / 230			1674 / 398			422 / 755			1179 / 503		
Iot [Pp/Tp]	827			421			56			234		
Avs E[Avm<200]	***			***			426			***		
Upper hyperarid [1]							Strong lower arid [1]					
Weak lower arid [1]							Strong upper arid [1]					
Weak upper arid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 20.00
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	34.40
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	31.50
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.45
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	32.95
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	20.13
+ Subhumid (30>Ia>20)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	37.66
+ Semiarid (50>Q>30)	
I of Dantin & Revenga (1940) [DR=100*T/P]	3.04
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE]	0.61
+ Subhumid - dry (0.65>I>0.5)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	9.52
+ 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	0.33	0.40	0.30	0.28	0.22	0.07	0.03	0.02	0.06	0.20	0.26	0.36
T-E ratio	3.15	3.65	4.55	5.94	7.43	10.08	12.15	11.75	10.13	7.43	5.09	3.56
Precipitation-effectiveness: 25.37						Temperature-efficiency						84.87
Moisture Index [MI=100*(P-PE)/PE]												-38.52
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]												51.86
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												13.33
+ Moderate surplus (10<HI<20)												
Potential Evapotranspiration PE												842.24
+ Second mesothermic (712<PE<855)												

