

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

JUMILLA (ESP MURCIA)

Altitude: 795 m.

Latitude: 38°38'N Longitude: 1°23'W

Temperature observation period.: 1956-1969 (14)

Rainfall observation period....: 1956-1979 (24)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	7.30	11.60	2.90	18.70	-1.10	21.4	15.63
Feb.	8.40	13.80	3.10	20.40	-1.00	18.8	19.19
Mar.	9.50	15.30	3.70	22.80	0.00	35.6	28.46
Apr.	11.90	18.90	4.90	26.50	1.00	30.6	43.04
May.	16.50	24.70	8.30	31.30	2.60	36.4	79.75
Jun.	20.10	28.40	11.80	35.00	7.00	38.9	109.06
Jul.	25.00	34.00	15.90	40.40	11.60	4.9	155.24
Aug.	24.10	33.20	14.90	38.10	11.30	12.9	137.37
Sep.	21.20	29.20	13.10	34.30	9.10	26.0	99.32
Oct.	16.40	23.10	9.60	29.30	5.40	37.5	61.66
Nov.	10.20	15.60	4.90	21.60	1.40	22.8	25.90
Dec.	7.70	12.20	3.20	18.20	0.70	26.9	16.38
Year	14.86	21.67	8.02	28.05	4.00	313	791.00

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	294
Compensated thermicity index.....(Itc):	294
Simple continentality index.....(Ic):	17.7
Diurnality index.....(Id):	18.3
Annual ombrothermic index.....(Io):	1.75
Monthly estival ombrothermic index.....(Ios1):	0.20
Bimonthly estival ombrothermic index.....(Ios2):	0.36
Threemonthly estival ombrothermic index.....(Ios3):	0.82
Fourmonthly estival ombrothermic index.....(Ios4):	1.09
Annual ombro-evaporation index.....(Ioe):	1.00
Annual positive temperature.....(Tp):	1783
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	692
Positive precipitation.....(Pp):	313

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	0	8	2	2	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Semicontinental

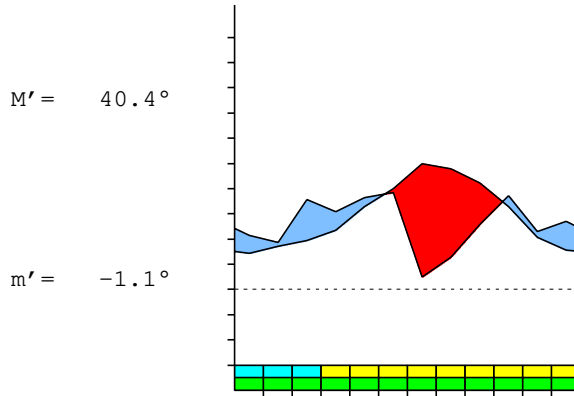
Bioclimate.....: MEDITERRANEAN XERIC-OCEANIC

Bioclimatic Belt...: UPPER MESOMEDITERRANEAN UPPER SEMIARID

JUMILLA (ESP MURCIA)

795 m

P= 313      38° 38'N      1° 23'W      14/24 y.  
 T= 14.9°    Ic= 17.7      Tp= 1783      Tn= 0  
 m= 2.9°      M= 11.6°      Itc= 294      Io= 1.8



MEDITERRANEAN XERIC-OCEANIC  
 UPPER MESOMEDITERRANEAN UPPER SEMIARID

WATER INDEX CARD      JUMILLA (ESP MURCIA)  
 Altitude: 795 m.      Latitude: 38° 38'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	7.3	16	21	6	16	16	0	0	0	0.3
Feb.	8.4	19	19	-0	16	19	0	0	0	0.0
Mar.	9.5	28	36	7	23	28	0	0	0	0.2
Apr.	11.9	43	31	-12	11	43	0	0	0	-0.2
May.	16.5	80	36	-11	0	47	33	0	0	-0.5
Jun.	20.1	109	39	0	0	39	70	0	0	-0.6
Jul.	25.0	155	5	0	0	5	150	0	0	-0.9
Aug.	24.1	137	13	0	0	13	124	0	0	-0.9
Sep.	21.2	99	26	0	0	26	73	0	0	-0.7
Oct.	16.4	62	38	0	0	38	24	0	0	-0.3
Nov.	10.2	26	23	0	0	23	3	0	0	-0.1
Dec.	7.7	16	27	11	11	16	0	0	0	0.6
Year	14.9	791	313	*	*	313	478	0	0	*

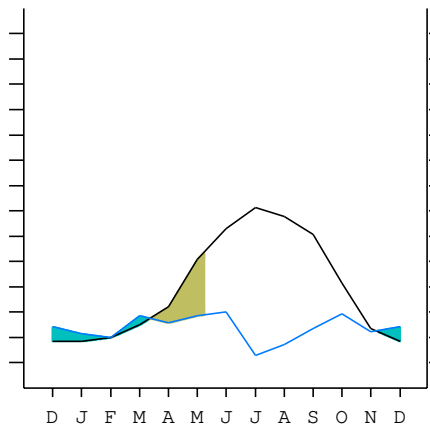
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

JUMILLA (ESP MURCIA)

38°38'N    1°23'W    795 m 14/24 y.

T= 14.9    Ic= 17.7    MEDITERRANEAN XERIC-OCEANIC  
 m= 2.9    Tp= 1783    UPPER MESOMEDITERRANEAN  
 M= 11.6    Tn= 0    UPPER SEMIARID  
 M' = 40.4    Itc= 294  
 m' = -1.1    Io= 1.8  
 P= 313    mm    ———  
 PE= 791    mm    ———

Imbibing	7 Nov.
Saturation	11 Mar.
Reserve Use	8 May.
Deficit	



JUMILLA (ESP MURCIA)

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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 [B6.3a.4a]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 6. XERIC-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 3. MESOMEDITERRANEAN  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 4. SEMIARID  
 + Ombrothermic subtype : a. UPPER

Bioclimatic Classification .....: MepDC.Mme.Sar

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 157  
 Coldest semester of the year.....(Psw): 156  
 Warmest four months period of the year.....(Pcm1): 83  
 Following warmest four months period.....(Pcm2): 109  
 Positive precipitation dryest 3 months.....(Ppd): 44  
 Positive precipitation dryest 2 months.....(Ppd2): 18  
 Positive precipitation dryest 1 month.....(Ppd1): 5  
 Positive precipitation warmest 3 months.....(Pps): 44  
 Positive precipitation warmest 2 months.....(Pps2): 18  
 Positive precipitation warmest 1 month.....(Pps1): 5  
 Positive precipitation coldest 3 months.....(Ppw): 67  
 Positive precipitation coldest 2 months.....(Ppw2): 48  
 Positive precipitation coldest 1 month.....(Ppw1): 21

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	67	102	56	86

Seasonal rainfall rhythms: P > F > W > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 25.0  
 Average coldest month [T].....(Tmin): 7.3  
 Maximum temp. warmest month [M].....(Tmmax): 34.0  
 Minimum temp. coldest month [m].....(Tmmin): 2.9  
 Absolute Max.temp. warmest month [M'].....(Tamax): 40.4  
 Absolute Min.temp. coldest month [m'].....(Tamin): -1.1  
 First warmest contrasted month [M].....(Tcmax): 33.2 (8)  
 First coldest contrasted month [m].....(Tcmin): 14.9 (8)  
 Estival temperature.....(Ts): 692  
 Positive temperature dryest 3 months.....(Tpd): 703  
 Positive temperature dryest 2 months.....(Tpd2): 491  
 Positive temperature dryest 1 month.....(Tpd1): 250  
 Positive temperature warmest 3 months.....(Tps): 703  
 Positive temperature warmest 2 months.....(Tps2): 491  
 Positive temperature warmest 1 month.....(Tps1): 250  
 Positive temperature coldest 3 months.....(Tpw): 234  
 Positive temperature coldest 2 months.....(Tpw2): 150  
 Positive temperature coldest 1 month.....(Tpw1): 73

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 2.53  
 Mediterranean index of July.[PE/P].....(Im1): 31.68  
 Mediterranean index of July & August.....(Im2): 16.44  
 Mediterranean index of June, July & August....(Im3): 7.08

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	269	214	188	356	306	364	389	49	129	260	375	228
Tp	77	73	84	95	119	165	201	250	241	212	164	102
Io (Iom)	3.49	2.93	2.24	3.75	2.57	2.21	1.94	0.20	0.54	1.23	2.29	2.24
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	671 / 234			1026 / 379			567 / 692			863 / 478		
Io (Iot)	2.868			2.707			0.819			1.805		
Semesters	December-May						June-November					
Pp(x10)/Tp	1697 / 613						1430 / 1170					
Io (Iosm)	2.768						1.222					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 3127/1783=1.75 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	269	214	188	356	306	364	389	49	129	260	375	228
Tp [T*10]	77	73	84	95	119	165	201	250	241	212	164	102
Iom [Pp/Tp]	349	293	224	375	257	221	194	20	54	123	229	224
Avm [200-Iom]	***	***	***	***	***	***	6	180	146	77	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	671 / 234			1026 / 379			567 / 692			863 / 478		
Iot [Pp/Tp]	287			271			82			181		
Avs E[Avm<200]	***			***			333			***		
Upper ultrahyperarid [1]							Weak lower arid [1]					
Weak upper arid [1]							Weak lower semiarid [1]					
Weak upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 17.70  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 27.80  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 26.09  
 + Oceanic (20<CI<40)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 1.28  
 + Subcontinental (1.1<CI<1.7)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 21.05  
 + Steppic (40>R>0)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 12.58  
 + Arid -steppic- (15>Ia>5)  
 I of Emberger (1930) [Q=100\*P/(Tmax<sup>2</sup>-Tmin<sup>2</sup>)] .....: 27.25  
 + Arid (30>Q>0)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 4.75  
 + Arid (6>DR>3)  
 Aridity Index of UNEP [I=P/PE] .....: 0.40  
 + Semiarid (0.5>Im>0.2)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 4.84  
 + 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: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.11	0.09	0.18	0.14	0.15	0.15	0.01	0.04	0.09	0.15	0.11	0.14
T-E ratio	3.29	3.78	4.27	5.35	7.43	9.05	11.25	10.85	9.54	7.38	4.59	3.46
Precipitation-effectiveness: 13.61						Temperature-efficiency .....: 80.24						
Moisture Index [MI=100*(P-PE)/PE] .....: -60.47 + D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE] .....: 60.46 + Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....: 0.00 + No surplus (0<HI<10)												
Potential Evapotranspiration PE .....: 791.00 + Second mesothermic (712<PE<855)												

