

Phytosociological Research Center

www.globalbioclimatics.org

Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

LINARES-TORRUBIA (ESP JAEN)

Altitude: 290 m.

Latitude: 38°1'N Longitude: 3°39'W

Temperature observation period.: 1968-1989 (22)

Rainfall observation period....: 1951-1989 (39)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	8.50	13.90	3.10	19.10	-3.10	60.8	13.70
Feb.	9.80	15.40	4.10	21.50	-1.90	69.0	17.66
Mar.	12.00	18.60	5.40	25.60	-0.60	62.7	31.60
Apr.	15.20	22.10	8.30	29.70	2.60	50.6	52.47
May.	18.80	25.90	11.80	34.20	5.80	33.4	87.24
Jun.	24.60	32.60	16.60	40.00	11.20	17.5	145.28
Jul.	28.80	37.80	19.90	43.30	15.90	4.3	192.39
Aug.	28.10	36.50	19.80	41.50	15.20	4.1	173.52
Sep.	24.40	32.40	16.40	38.40	10.00	17.5	120.00
Oct.	17.80	24.50	11.20	32.50	4.30	46.1	61.48
Nov.	12.20	17.90	6.50	24.50	0.40	58.8	26.58
Dec.	8.90	14.10	3.70	19.70	-2.50	65.7	14.58
Year	17.42	24.31	10.57	30.83	4.78	491	936.49

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	344
Compensated thermicity index.....(Itc):	356
Simple continentality index.....(Ic):	20.3
Diurnality index.....(Id):	17.9
Annual ombrothermic index.....(Io):	2.35
Monthly estival ombrothermic index.....(Ios1):	0.15
Bimonthly estival ombrothermic index.....(Ios2):	0.15
Threemonthly estival ombrothermic index.....(Ios3):	0.32
Fourmonthly estival ombrothermic index.....(Ios4):	0.59
Annual ombro-evaporation index.....(Ioe):	0.33
Annual positive temperature.....(Tp):	2091
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	815
Positive precipitation.....(Pp):	491

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

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - High Semicontinental

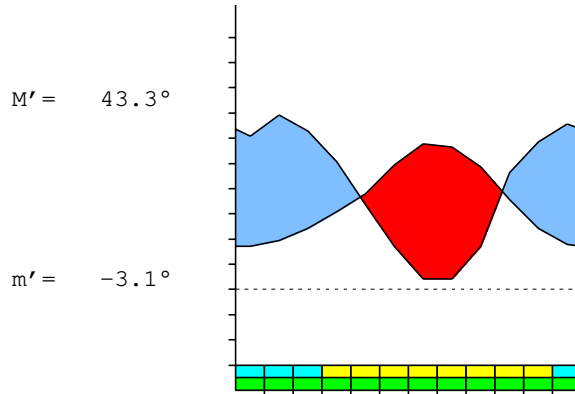
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: UPPER THERMOMEDITERRANEAN LOW DRY

LINARES-TORRUBIA (ESP JAEN)

290 m

P= 491 38° 1'N 3° 39'W 22/39 y.
 T= 17.4° Ic= 20.3 Tp= 2091 Tn= 0
 m= 3.1° M= 13.9° Itc= 356 Io= 2.3



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 UPPER THERMOMEDITERRANEAN LOW DRY

WATER INDEX CARD
 Altitude: 290 m.

LINARES-TORRUBIA (ESP JAEN)
 Latitude: 38° 1'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	8.5	14	61	17	100	14	0	30	15	3.4
Feb.	9.8	18	69	0	100	18	0	51	33	2.9
Mar.	12.0	32	63	0	100	32	0	31	32	0.9
Apr.	15.2	52	51	-2	98	52	0	0	16	0.0
May.	18.8	87	33	-54	44	87	0	0	8	-0.6
Jun.	24.6	145	18	-44	0	62	83	0	4	-0.8
Jul.	28.8	192	4	0	0	4	188	0	2	-0.9
Aug.	28.1	174	4	0	0	4	169	0	1	-0.9
Sep.	24.4	120	18	0	0	18	103	0	1	-0.8
Oct.	17.8	61	46	0	0	46	15	0	0	-0.2
Nov.	12.2	27	59	32	32	27	0	0	0	1.2
Dec.	8.9	15	66	51	83	15	0	0	0	3.5
Year	17.4	936	491	*	*	378	559	113	113	*

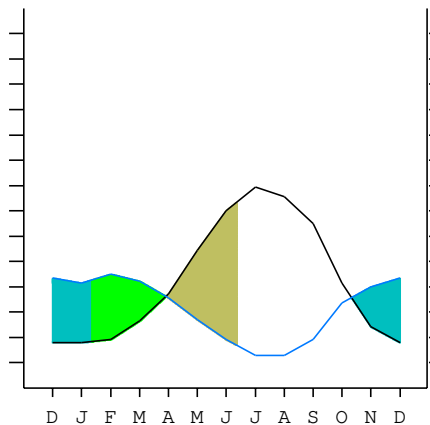
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

LINARES-TORRUBIA (ESP JAEN)

38°1'N 3°39'W 290 m 22/39 y.

T= 17.4 Ic= 20.3 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 3.1 Tp= 2091 UPPER THERMOMEDITERRANEAN
 M= 13.9 Tn= 0 LOW DRY
 M' = 43.3 Itc= 356
 m' = -3.1 Io= 2.3
 P= 491 mm
 PE= 936 mm

Imbibing	10 Oct.
Saturation	11 Jan.
Reserve Use	29 Mar.
Deficit	11 Jun.



LINARES-TORRUBIA (ESP JAEN)

Latitude: 38°1'N Longitude: 3°39'W Altitude: 290 m

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 [B8.2a.5b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant ..:
 + Thermic type.....: 2. THERMOMEDITERRANEAN
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Mehc.Tme.Dry

LINARES-TORRUBIA (ESP JAEN)

Latitude: 38°1'N Longitude: 3°39'W Altitude: 290 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 123
 Coldest semester of the year.....(Psw): 368
 Warmest four months period of the year.....(Pcm1): 43
 Following warmest four months period.....(Pcm2): 231
 Positive precipitation dryest 3 months.....(Ppd): 26
 Positive precipitation dryest 2 months.....(Ppd2): 8
 Positive precipitation dryest 1 month.....(Ppd1): 4
 Positive precipitation warmest 3 months.....(Pps): 26
 Positive precipitation warmest 2 months.....(Pps2): 8
 Positive precipitation warmest 1 month.....(Pps1): 4
 Positive precipitation coldest 3 months.....(Ppw): 196
 Positive precipitation coldest 2 months.....(Ppw2): 127
 Positive precipitation coldest 1 month.....(Ppw1): 61

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	195	146	25	122

Seasonal rainfall rhythms: W > P > F > S

LINARES-TORRUBIA (ESP JAEN)

Latitude: 38°1'N Longitude: 3°39'W Altitude: 290 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 28.8
 Average coldest month [T].....(Tmin): 8.5
 Maximum temp. warmest month [M].....(Tmmax): 37.8
 Minimum temp. coldest month [m].....(Tmmin): 3.1
 Absolute Max.temp. warmest month [M'].....(Tamax): 43.3
 Absolute Min.temp. coldest month [m'].....(Tamin): -3.1
 First warmest contrasted month [M].....(Tcmax): 37.8 (7)
 First coldest contrasted month [m].....(Tcmin): 19.9 (7)
 Estival temperature.....(Ts): 815
 Positive temperature dryest 3 months.....(Tpd): 815
 Positive temperature dryest 2 months.....(Tpd2): 569
 Positive temperature dryest 1 month.....(Tpd1): 281
 Positive temperature warmest 3 months.....(Tps): 815
 Positive temperature warmest 2 months.....(Tps2): 569
 Positive temperature warmest 1 month.....(Tps1): 288
 Positive temperature coldest 3 months.....(Tpw): 272
 Positive temperature coldest 2 months.....(Tpw2): 174
 Positive temperature coldest 1 month.....(Tpw1): 85

LINARES-TORRUBIA (ESP JAEN)

Latitude: 38°1'N Longitude: 3°39'W Altitude: 290 m

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

LINARES-TORRUBIA (ESP JAEN)

Latitude: 38°1'N Longitude: 3°39'W Altitude: 290 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.91
 Mediterranean index of July.[PE/P].....(Im1): 44.74
 Mediterranean index of July & August.....(Im2): 43.56
 Mediterranean index of June, July & August....(Im3): 19.74

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	657	608	690	627	506	334	175	43	41	175	461	588
Tp	89	85	98	120	152	188	246	288	281	244	178	122
Io (Iom)	7.38	7.15	7.04	5.23	3.33	1.78	0.71	0.15	0.15	0.72	2.59	4.82
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1955 / 272			1467 / 460			259 / 815			1224 / 544		
Io (Iot)	7.187			3.189			0.318			2.250		
Semesters	December-May						June-November					
Pp(x10)/Tp	3422 / 732						1483 / 1359					
Io (Iosm)	4.675						1.091					

LINARES-TORRUBIA (ESP JAEN)

Latitude: 38°1'N Longitude: 3°39'W Altitude: 290 m

Aridity Value Index (AVI)

[10xPP/TP=IO]: 4905/2091=2.35 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	657	608	690	627	506	334	175	43	41	175	461	588
Tp [T*10]	89	85	98	120	152	188	246	288	281	244	178	122
Iom [Pp/Tp]	738	715	704	523	333	178	71	15	15	72	259	482
Avm [200-Iom]	***	***	***	***	***	22	129	185	185	128	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1955 / 272			1467 / 460			259 / 815			1224 / 544		
Iot [Pp/Tp]	719			319			32			225		
Avs E[Avm<200]	***			***			499			***		
Upper ultrahyperarid [2]						Upper hyperarid [1]						
Strong upper arid [2]						Weak upper semiarid [1]						

LINARES-TORRUBIA (ESP JAEN)

Latitude: 38°1'N Longitude: 3°39'W Altitude: 290 m

BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp):	20.30
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]		35.63
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]		32.43
+ Oceanic (20<CI<40)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)]		1.48
+ Subcontinental (1.1<CI<1.7)		
Rainfall Index of Lang (1925) [R=P/T]		28.15
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)]		17.89
+ Semiarid -mediterranean- (20>Ia>15)		
I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)]		34.56
+ Semiarid (50>Q>30)		
I of Dantin & Revenga (1940) [DR=100*T/P]		3.55
+ 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]		9.71
+ Very low (K<60)		

LINARES-TORRUBIA (ESP JAEN)

Latitude: 38°1'N Longitude: 3°39'W Altitude: 290 m

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	0.34	0.37	0.31	0.22	0.13	0.05	0.01	0.01	0.05	0.19	0.29	0.36
T-E ratio	3.82	4.41	5.40	6.84	8.46	11.07	12.96	12.65	10.98	8.01	5.49	4.00
Precipitation-effectiveness: 23.35						Temperature-efficiency						94.09
Moisture Index [MI=100*(P-PE)/PE]												-47.62
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]												59.67
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												12.04
+ Moderate surplus (10<HI<20)												
Potential Evapotranspiration PE												936.49
+ Third mesothermic (855<PE<997)												

