

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

MOLLERUSSA (ESP LERIDA)

Altitude: 250 m.

Latitude: 41°38'N Longitude: 0°54'E

Temperature observation period.: 1935-1970 (36)

Rainfall observation period....: 1935-1970 (36)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	4.90	10.10	-0.30	16.40	-6.50	19.0	9.96
Feb.	5.80	11.70	-0.10	17.50	-6.90	30.0	12.66
Mar.	9.00	15.50	2.50	22.80	-3.50	40.0	29.78
Apr.	12.10	19.40	4.90	26.00	-0.50	40.0	49.40
May.	16.10	23.60	8.80	30.00	4.00	48.0	83.55
Jun.	20.40	28.30	12.60	34.90	7.80	35.0	118.05
Jul.	23.60	31.80	15.40	36.50	11.80	20.0	146.49
Aug.	22.60	30.10	15.00	34.80	10.50	29.0	128.03
Sep.	20.00	27.40	12.70	32.20	8.20	44.0	93.98
Oct.	14.80	21.20	8.40	27.20	1.80	42.0	55.86
Nov.	8.50	13.80	3.20	20.10	-2.50	45.0	21.85
Dec.	4.50	9.40	-0.40	16.00	-8.20	36.0	8.49
Year	13.53	20.19	6.89	26.20	1.33	428	758.10

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	225
Compensated thermicity index.....(Itc):	231
Simple continentality index.....(Ic):	19.1
Diurnality index.....(Id):	16.4
Annual ombrothermic index.....(Io):	2.64
Monthly estival ombrothermic index.....(Ios1):	0.85
Bimonthly estival ombrothermic index.....(Ios2):	1.06
Threemonthly estival ombrothermic index.....(Ios3):	1.26
Fourmonthly estival ombrothermic index.....(Ios4):	1.60
Annual ombro-evaporation index.....(Ioe):	0.56
Annual positive temperature.....(Tp):	1623
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	666
Positive precipitation.....(Pp):	428

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

Latitudinal Belt...: Low Eutemperate

Continentalty.....: Oceanic - High Semicontinental

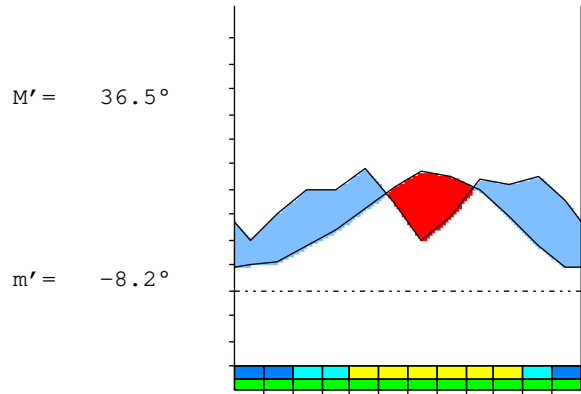
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: UPPER MESOMEDITERRANEAN LOW DRY

MOLLERUSSA (ESP LERIDA)

250 m

P= 428 41° 38'N 0° 54'E 36/36 y.
 T= 13.5 ° Ic= 19.1 Tp= 1623 Tn= 0
 m= -0.4 ° M= 9.4 ° Itc= 231 Io= 2.6



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 UPPER MESOMEDITERRANEAN LOW DRY

WATER INDEX CARD

MOLLERUSSA (ESP LERIDA)

Altitude: 250 m.

Latitude: 41° 38'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	4.9	10	19	9	60	10	0	0	0	0.9
Feb.	5.8	13	30	17	77	13	0	0	0	1.3
Mar.	9.0	30	40	10	87	30	0	0	0	0.3
Apr.	12.1	49	40	-9	78	49	0	0	0	-0.1
May.	16.1	84	48	-36	42	84	0	0	0	-0.4
Jun.	20.4	118	35	-42	0	77	41	0	0	-0.7
Jul.	23.6	146	20	0	0	20	126	0	0	-0.8
Aug.	22.6	128	29	0	0	29	99	0	0	-0.7
Sep.	20.0	94	44	0	0	44	50	0	0	-0.5
Oct.	14.8	56	42	0	0	42	14	0	0	-0.2
Nov.	8.5	22	45	23	23	22	0	0	0	1.0
Dec.	4.5	8	36	28	51	8	0	0	0	3.2
Year	13.5	758	428	*	*	428	330	0	0	*

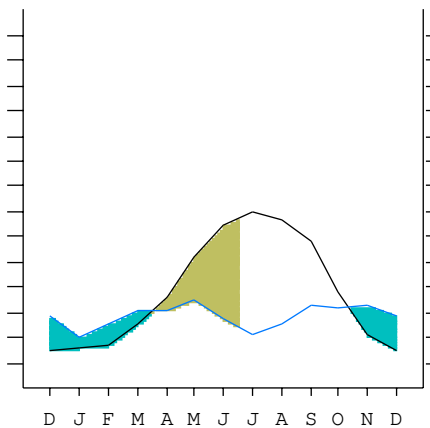
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

MOLLERUSSA (ESP LERIDA)

41°38'N 0°54'E 250 m 36/36 y.

T= 13.5 Ic= 19.1 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= -0.4 Tp= 1623 UPPER MESOMEDITERRANEAN
 M= 9.4 Tn= 0 LOW DRY
 M' = 36.5 Itc= 231
 m' = -8.2 Io= 2.6
 P= 428 mm ———
 PE= 758 mm ———

Imbibing	12 Oct.
Saturation	
Reserve Use	16 Mar.
Deficit	16 Jun.



MOLLERUSSA (ESP LERIDA)

Latitude: 41°38'N Longitude: 0°54'E Altitude: 250 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B1b]
 + Type: B. Oceanic
 + Subtype: 1. Semicontinental
 + Variant: b. High

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.5b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant .:
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : b. LOW

Bioclimatic ClassificationMepo.Mme.Dry.Sec

MOLLERUSSA (ESP LERIDA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 218
 Coldest semester of the year.....(Psw): 210
 Warmest four months period of the year.....(Pcm1): 128
 Following warmest four months period.....(Pcm2): 142
 Positive precipitation dryest 3 months.....(Ppd): 84
 Positive precipitation dryest 2 months.....(Ppd2): 49
 Positive precipitation dryest 1 month.....(Ppd1): 19
 Positive precipitation warmest 3 months.....(Pps): 84
 Positive precipitation warmest 2 months.....(Pps2): 49
 Positive precipitation warmest 1 month.....(Pps1): 20
 Positive precipitation coldest 3 months.....(Ppw): 85
 Positive precipitation coldest 2 months.....(Ppw2): 55
 Positive precipitation coldest 1 month.....(Ppw1): 36

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	85	128	84	131

Seasonal rainfall rhythms: F > P > W > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 23.6
 Average coldest month [T].....(Tmin): 4.5
 Maximum temp. warmest month [M].....(Tmax): 31.8
 Minimum temp. coldest month [m].....(Tmin): -0.4
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.5
 Absolute Min.temp. coldest month [m'].....(Tamin): -8.2
 First warmest contrasted month [M].....(Tcmax): 31.8 (7)
 First coldest contrasted month [m].....(Tcmin): 15.4 (7)
 Estival temperature.....(Ts): 666
 Positive temperature dryest 3 months.....(Tpd): 666
 Positive temperature dryest 2 months.....(Tpd2): 107
 Positive temperature dryest 1 month.....(Tpd1): 49
 Positive temperature warmest 3 months.....(Tps): 666
 Positive temperature warmest 2 months.....(Tps2): 462
 Positive temperature warmest 1 month.....(Tps1): 236
 Positive temperature coldest 3 months.....(Tpw): 152
 Positive temperature coldest 2 months.....(Tpw2): 94
 Positive temperature coldest 1 month.....(Tpw1): 45

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.77
 Mediterranean index of July.[PE/P].....(Im1): 7.32
 Mediterranean index of July & August.....(Im2): 5.60
 Mediterranean index of June, July & August....(Im3): 4.67

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	360	190	300	400	400	480	350	200	290	440	420	450
Tp	45	49	58	90	121	161	204	236	226	200	148	85
Io (Iom)	8.00	3.88	5.17	4.44	3.31	2.98	1.72	0.85	1.28	2.20	2.84	5.29
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	850 / 152			1280 / 372			840 / 666			1310 / 433		
Io (Iot)	5.592			3.441			1.261			3.025		
Semesters	December-May						June-November					
Pp(x10)/Tp	2130 / 524						2150 / 1099					
Io (Iosm)	4.065						1.956					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 4280/1623=2.64 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	360	190	300	400	400	480	350	200	290	440	420	450
TP [T*10]	45	49	58	90	121	161	204	236	226	200	148	85
Iom [Pp/TP]	800	388	517	444	331	298	172	85	128	220	284	529
Avm [200-Iom]	***	***	***	***	***	***	28	115	72	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	850 / 152			1280 / 372			840 / 666			1310 / 433		
Iot [Pp/TP]	559			344			126			303		
Avs E[Avm<200]	***			***			215			***		
Weak upper arid [1]							Weak lower semiarid [2]					
Weak upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 19.10
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	28.47
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	27.41
+ 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]	31.65
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	18.19
+ Semiarid -mediterranean- (20>Ia>15)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	42.33
+ Semiarid (50>Q>30)	
I of Dantin & Revenga (1940) [DR=100*T/P]	3.16
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE]	0.56
+ Subhumid - dry (0.65>I>0.5)	
Potencial Erosion I of Fournier (1960) [K=Pi ² /P].....	5.38
+ 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	0.17	0.21	0.19	0.20	0.13	0.06	0.10	0.17	0.18	0.24	0.22
T-E ratio	2.21	2.61	4.05	5.45	7.25	9.18	10.62	10.17	9.00	6.66	3.82	2.03
Precipitation-effectiveness: 19.79						Temperature-efficiency: 73.04						
Moisture Index [MI=100*(P-PE)/PE]												
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]												
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE												
+ Second mesothermic (712<PE<855)												

