

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

SEROS (ESP LERIDA)

Altitude: 102 m.

Latitude: 41°28'N Longitude: 0°25'E

Temperature observation period.: 1941-1969 (29)

Rainfall observation period....: 1941-1969 (29)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	5.50	10.10	0.90	18.00	-4.30	22.0	9.06
Feb.	7.80	13.60	1.90	19.90	-3.50	19.0	15.83
Mar.	11.10	17.80	4.50	24.00	-0.30	32.0	34.53
Apr.	14.30	21.10	7.60	27.70	3.10	36.0	55.78
May.	18.10	25.10	11.10	31.50	6.40	46.0	91.56
Jun.	21.50	29.20	14.80	35.60	10.30	35.0	121.53
Jul.	25.30	32.90	17.80	38.80	13.80	16.0	158.89
Aug.	24.60	31.40	17.70	36.90	13.70	29.0	142.35
Sep.	21.70	28.40	15.00	33.90	10.90	48.0	101.80
Oct.	16.80	23.20	10.30	28.70	4.50	40.0	62.42
Nov.	10.00	15.30	4.70	23.10	-0.90	38.0	23.26
Dec.	5.80	9.80	1.80	17.40	-4.20	35.0	9.50
Year	15.21	21.49	9.01	27.96	4.12	396	826.51

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	262
Compensated thermicity index.....(Itc):	271
Simple continentality index.....(Ic):	19.8
Diurnality index.....(Id):	15.1
Annual ombrothermic index.....(Io):	2.17
Monthly estival ombrothermic index.....(Ios1):	0.63
Bimonthly estival ombrothermic index.....(Ios2):	0.90
Threemonthly estival ombrothermic index.....(Ios3):	1.12
Fourmonthly estival ombrothermic index.....(Ios4):	1.41
Annual ombro-evaporation index.....(Ioe):	0.48
Annual positive temperature.....(Tp):	1825
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	714
Positive precipitation.....(Pp):	396

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	1	8	2	1	0

Latitudinal Belt...: Low Eutemperate

Continentality.....: Oceanic - High Semicontinental

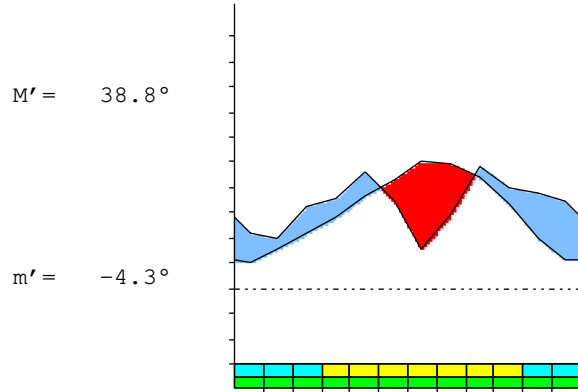
Bioclimate(Variant): MEDITERRANEAN PLUVISEASONAL-OCEANIC (STEPPIC)

Bioclimatic Belt...: UPPER MESOMEDITERRANEAN LOW DRY

SEROS (ESP LERIDA)

102 m

P= 396      41° 28'N      0° 25'E      29/29 y.  
 T= 15.2 °    Ic= 19.8      Tp= 1825      Tn= 0  
 m= 0.9 °    M= 10.1 °    Itc= 271      Io= 2.2



MEDITERRANEAN PLUVISEASONAL-OCEANIC (STEPPIC)  
 UPPER MESOMEDITERRANEAN LOW DRY

WATER INDEX CARD

SEROS (ESP LERIDA)

Altitude: 102 m.

Latitude: 41° 28'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	5.5	9	22	13	53	9	0	0	0	1.4
Feb.	7.8	16	19	3	56	16	0	0	0	0.2
Mar.	11.1	35	32	-3	54	35	0	0	0	0.0
Apr.	14.3	56	36	-20	34	56	0	0	0	-0.3
May.	18.1	92	46	-34	0	80	12	0	0	-0.4
Jun.	21.5	122	35	0	0	35	87	0	0	-0.7
Jul.	25.3	159	16	0	0	16	143	0	0	-0.8
Aug.	24.6	142	29	0	0	29	113	0	0	-0.7
Sep.	21.7	102	48	0	0	48	54	0	0	-0.5
Oct.	16.8	62	40	0	0	40	22	0	0	-0.3
Nov.	10.0	23	38	15	15	23	0	0	0	0.6
Dec.	5.8	10	35	25	40	10	0	0	0	2.6
Year	15.2	827	396	*	*	396	431	0	0	*

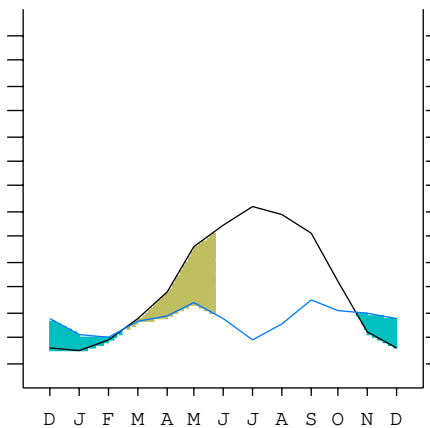
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

SEROS (ESP LERIDA)

41°28'N    0°25'E    102 m 29/29 y.

T= 15.2    Ic= 19.8    MEDITERRANEAN PLUVISEASONAL-OCEANIC (STEPPIC)  
 m= 0.9    Tp= 1825    UPPER MESOMEDITERRANEAN  
 M= 10.1    Tn= 0    LOW DRY  
 M' = 38.8    Itc= 271  
 m' = -4.3    Io= 2.2  
 P= 396    mm ———  
 PE= 827    mm ———

Imbibing	19 Oct.
Saturation	
Reserve Use	17 Feb.
Deficit	23 May.



SEROS (ESP LERIDA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality 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 [B8a.3a.5b]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant .: STEPPIC  
 + Thermic type.....: 3. MESOMEDITERRANEAN  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification .....Mepo (Stp) .Mme.Dry.Sec

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 214  
 Coldest semester of the year.....(Psw): 182  
 Warmest four months period of the year.....(Pcm1): 128  
 Following warmest four months period.....(Pcm2): 135  
 Positive precipitation dryest 3 months.....(Ppd): 73  
 Positive precipitation dryest 2 months.....(Ppd2): 41  
 Positive precipitation dryest 1 month.....(Ppd1): 16  
 Positive precipitation warmest 3 months.....(Pps): 93  
 Positive precipitation warmest 2 months.....(Pps2): 45  
 Positive precipitation warmest 1 month.....(Pps1): 16  
 Positive precipitation coldest 3 months.....(Ppw): 76  
 Positive precipitation coldest 2 months.....(Ppw2): 57  
 Positive precipitation coldest 1 month.....(Ppw1): 22

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	76	114	80	126

Seasonal rainfall rhythms: F > P > S > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 25.3  
 Average coldest month [T].....(Tmin): 5.5  
 Maximum temp. warmest month [M].....(Tmax): 32.9  
 Minimum temp. coldest month [m].....(Tmin): 0.9  
 Absolute Max.temp. warmest month [M'].....(Tamax): 38.8  
 Absolute Min.temp. coldest month [m'].....(Tamin): -4.3  
 First warmest contrasted month [M].....(Tcmax): 32.9 (7)  
 First coldest contrasted month [m].....(Tcmin): 17.8 (7)  
 Estival temperature.....(Ts): 714  
 Positive temperature dryest 3 months.....(Tpd): 244  
 Positive temperature dryest 2 months.....(Tpd2): 133  
 Positive temperature dryest 1 month.....(Tpd1): 253  
 Positive temperature warmest 3 months.....(Tps): 716  
 Positive temperature warmest 2 months.....(Tps2): 499  
 Positive temperature warmest 1 month.....(Tps1): 253  
 Positive temperature coldest 3 months.....(Tpw): 191  
 Positive temperature coldest 2 months.....(Tpw2): 113  
 Positive temperature coldest 1 month.....(Tpw1): 55

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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): 2.09  
 Mediterranean index of July.[PE/P].....(Im1): 9.93  
 Mediterranean index of July & August.....(Im2): 6.69  
 Mediterranean index of June, July & August....(Im3): 5.28

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	350	220	190	320	360	460	350	160	290	480	400	380
Tp	58	55	78	111	143	181	215	253	246	217	168	100
Io (Iom)	6.03	4.00	2.44	2.88	2.52	2.54	1.63	0.63	1.18	2.21	2.38	3.80
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	760 / 191			1140 / 435			800 / 714			1260 / 485		
Io (Iot)	3.979			2.621			1.120			2.598		
Semesters	December-May						June-November					
Pp(x10)/Tp	1900 / 626						2060 / 1199					
Io (Iosm)	3.035						1.718					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 3960/1825=2.17 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	350	220	190	320	360	460	350	160	290	480	400	380
TP [T*10]	58	55	78	111	143	181	215	253	246	217	168	100
Iom [Pp/TP]	603	400	244	288	252	254	163	63	118	221	238	380
Avm [200-Iom]	***	***	***	***	***	***	37	137	82	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	760 / 191			1140 / 435			800 / 714			1260 / 485		
Iot [Pp/TP]	398			262			112			260		
Avs E[Avm<200]	***			***			256			***		
Weak lower arid [1]							Strong lower semiarid [2]					
Strong upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 19.80  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 30.43  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 29.03  
 + Oceanic (20<CI<40)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 1.34  
 + Subcontinental (1.1<CI<1.7)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 26.04  
 + Steppic (40>R>0)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 15.71  
 + Semiarid -mediterranean- (20>Ia>15)  
 I of Emberger (1930) [Q=100\*P/(Tmax<sup>2</sup>-Tmin<sup>2</sup>)] .....: 36.61  
 + Semiarid (50>Q>30)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 3.84  
 + Arid (6>DR>3)  
 Aridity Index of UNEP [I=P/PE] .....: 0.48  
 + Semiarid (0.5>Im>0.2)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 5.82  
 + 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: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.12	0.10	0.15	0.16	0.18	0.12	0.05	0.09	0.18	0.16	0.19	0.20
T-E ratio	2.47	3.51	5.00	6.44	8.15	9.67	11.38	11.07	9.77	7.56	4.50	2.61
Precipitation-effectiveness: 17.09						Temperature-efficiency .....: 82.13						
Moisture Index [MI=100*(P-PE)/PE] .....: -52.09 + D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE] .....: 52.09 + Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....: 0.00 + No surplus (0<HI<10)												
Potential Evapotranspiration PE .....: 826.51 + Second mesothermic (712<PE<855)												

