

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

LA SEU D URGELL (ESP LERIDA)

Altitude: 691 m.

Latitude: 42°21'N Longitude: 1°28'E

Temperature observation period.: 1945-1969 (25)

Rainfall observation period....: 1945-1969 (25)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	2.20	8.40	-3.90	15.30	-10.60	25.0	5.08
Feb.	4.10	11.00	-2.80	18.80	-9.70	33.0	10.99
Mar.	8.60	15.60	1.50	22.30	-5.10	55.0	34.56
Apr.	10.80	17.40	4.10	24.00	-2.30	55.0	49.83
May.	14.00	20.50	7.60	26.70	1.40	75.0	77.32
Jun.	18.00	24.80	11.10	30.80	5.30	73.0	106.41
Jul.	20.70	28.30	13.10	33.20	8.60	44.0	127.53
Aug.	20.10	27.20	13.00	33.20	7.90	85.0	114.32
Sep.	16.90	23.60	10.20	28.60	4.90	73.0	80.59
Oct.	12.20	19.00	5.50	24.20	-0.60	36.0	49.16
Nov.	6.80	13.30	0.20	19.30	-5.60	48.0	20.57
Dec.	3.20	8.60	-2.20	14.00	-7.90	54.0	7.79
Year	11.47	18.14	4.78	24.20	-1.14	656	684.14

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	160
Compensated thermicity index.....(Itc):	162
Simple continentality index.....(Ic):	18.5
Diurnality index.....(Id):	15.2
Annual ombrothermic index.....(Io):	4.77
Monthly estival ombrothermic index.....(Ios1):	2.13
Bimonthly estival ombrothermic index.....(Ios2):	3.16
Threemonthly estival ombrothermic index.....(Ios3):	3.44
Fourmonthly estival ombrothermic index.....(Ios4):	3.80
Annual ombro-evaporation index.....(Ioe):	1.43
Annual positive temperature.....(Tp):	1376
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	588
Positive precipitation.....(Pp):	656

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	10	2	0	0	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Semicontinental

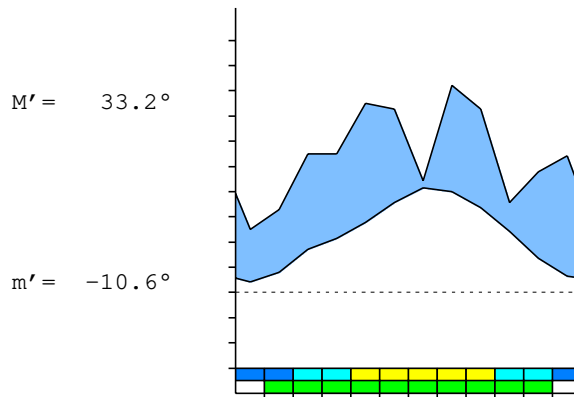
Bioclimate(Variant): TEMPERATE OCEANIC (STEPPIIC)

Bioclimatic Belt...: LOW SUPRATEMPERATE LOW SUBHUMID

LA SEU D URGELL (ESP LERIDA)

691 m

P= 656 42° 21'N 1° 28'E 25/25 y.  
 T= 11.5° Ic= 18.5 Tp= 1376 Tn= 0  
 m= -3.9° M= 8.4° Itc= 162 Io= 4.8



TEMPERATE OCEANIC (STEPPIC)  
 LOW SUPRATEMPERATE LOW SUBHUMID

WATER INDEX CARD

LA SEU D URGELL (ESP LERIDA)

Altitude: 691 m.

Latitude: 42° 21'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	2.2	5	25	20	94	5	0	0	0	3.9
Feb.	4.1	11	33	6	100	11	0	16	8	2.0
Mar.	8.6	35	55	0	100	35	0	20	14	0.5
Apr.	10.8	50	55	0	100	50	0	5	10	0.1
May.	14.0	77	75	-2	98	77	0	0	5	0.0
Jun.	18.0	106	73	-33	64	106	0	0	2	-0.3
Jul.	20.7	128	44	-64	0	108	19	0	1	-0.6
Aug.	20.1	114	85	0	0	85	29	0	1	-0.2
Sep.	16.9	81	73	0	0	73	8	0	0	0.0
Oct.	12.2	49	36	0	0	36	13	0	0	-0.2
Nov.	6.8	21	48	27	27	21	0	0	0	1.3
Dec.	3.2	8	54	46	74	8	0	0	0	5.9
Year	11.5	684	656	*	*	615	69	41	41	*

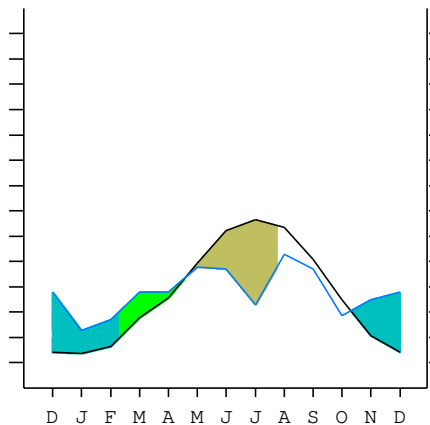
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration  
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

LA SEU D URGELL (ESP LERIDA)

42°21'N 1°28'E 691 m 25/25 y.

T= 11.5 Ic= 18.5 TEMPERATE OCEANIC (STEPPIC)  
 m= -3.9 Tp= 1376 LOW SUPRATEMPERATE  
 M= 8.4 Tn= 0 LOW SUBHUMID  
 M' = 33.2 Itc= 162  
 m' = -10.6 Io= 4.8  
 P= 656 mm ———  
 PE= 684 mm ———

Imbibing	10 Oct.
Saturation	9 Feb.
Reserve Use	21 Apr.
Deficit	24 Jul.



LA SEU D URGELL (ESP LERIDA)

Latitude: 42°21'N Longitude: 1°28'E Altitude: 691 m

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 [C3a.4b.6b]  
 + Macrobioclimate .....: C. TEMPERATE  
 + Bioclimate .....: 3. OCEANIC  
 + Bioclimatic variant ..: a. STEPPIC  
 + Thermic type.....: 4. SUPRATEMPERATE  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 6. SUBHUMID  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....: Teco(Stp).Ste.Shu

LA SEU D URGELL (ESP LERIDA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 386  
 Coldest semester of the year.....(Psw): 270  
 Warmest four months period of the year.....(Pcm1): 275  
 Following warmest four months period.....(Pcm2): 163  
 Positive precipitation dryest 3 months.....(Ppd): 112  
 Positive precipitation dryest 2 months.....(Ppd2): 58  
 Positive precipitation dryest 1 month.....(Ppd1): 25  
 Positive precipitation warmest 3 months.....(Pps): 202  
 Positive precipitation warmest 2 months.....(Pps2): 129  
 Positive precipitation warmest 1 month.....(Pps1): 44  
 Positive precipitation coldest 3 months.....(Ppw): 112  
 Positive precipitation coldest 2 months.....(Ppw2): 79  
 Positive precipitation coldest 1 month.....(Ppw1): 25

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	112	185	202	157

Seasonal rainfall rhythms: S > P > F > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 20.7  
 Average coldest month [T].....(Tmin): 2.2  
 Maximum temp. warmest month [M].....(Tmmax): 28.3  
 Minimum temp. coldest month [m].....(Tmmin): -3.9  
 Absolute Max.temp. warmest month [M'].....(Tamax): 33.2  
 Absolute Min.temp. coldest month [m'].....(Tamin): -10.6  
 First warmest contrasted month [M].....(Tcmax): 28.3 (7)  
 First coldest contrasted month [m].....(Tcmin): 13.1 (7)  
 Estival temperature.....(Ts): 588  
 Positive temperature dryest 3 months.....(Tpd): 95  
 Positive temperature dryest 2 months.....(Tpd2): 63  
 Positive temperature dryest 1 month.....(Tpd1): 22  
 Positive temperature warmest 3 months.....(Tps): 588  
 Positive temperature warmest 2 months.....(Tps2): 408  
 Positive temperature warmest 1 month.....(Tps1): 207  
 Positive temperature coldest 3 months.....(Tpw): 95  
 Positive temperature coldest 2 months.....(Tpw2): 54  
 Positive temperature coldest 1 month.....(Tpw1): 22

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.04  
 Mediterranean index of July.[PE/P].....(Im1): 2.90  
 Mediterranean index of July & August.....(Im2): 1.87  
 Mediterranean index of June, July & August....(Im3): 1.72

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	540	250	330	550	550	750	730	440	850	730	360	480
Tp	32	22	41	86	108	140	180	207	201	169	122	68
Io (Iom)	16.9	11.4	8.05	6.40	5.09	5.36	4.06	2.13	4.23	4.32	2.95	7.06
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1120 / 95			1850 / 334			2020 / 588			1570 / 359		
Io (Iot)	11.79			5.539			3.435			4.373		
Semesters	December-May						June-November					
Pp(x10)/Tp	2970 / 429						3590 / 947					
Io (Iosm)	6.923						3.791					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 6560/1376=4.77 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	540	250	330	550	550	750	730	440	850	730	360	480
Tp [T*10]	32	22	41	86	108	140	180	207	201	169	122	68
Iom [Pp/Tp]	\$\$	\$\$	805	640	509	536	406	213	423	432	295	706
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1120 / 95			1850 / 334			2020 / 588			1570 / 359		
Iot [Pp/Tp]	1179			554			344			437		
Avs E[Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 18.50  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 26.29  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 25.72  
 + Oceanic (20<CI<40)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 1.22  
 + Subcontinental (1.1<CI<1.7)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 57.21  
 + Semiarid (60>R>40)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 30.56  
 + Humid (60>Ia>30)  
 I of Emberger (1930) [Q=100\*P/(Tmax<sup>2</sup>-Tmin<sup>2</sup>)] .....: 83.49  
 + Subhumid (90>Q>50)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 1.75  
 + Humid (2>DR>0)  
 Aridity Index of UNEP [I=P/PE] .....: 0.96  
 + Humid (I>0.65)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 11.01  
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....: A. Warm and temperate warm  
 + Region .....: 7. Mesoaxeric (Axeric temperate)  
 + Thermic type: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.16	0.20	0.30	0.28	0.36	0.31	0.16	0.35	0.32	0.17	0.28	0.36
T-E ratio	0.99	1.84	3.87	4.86	6.30	8.10	9.32	9.05	7.60	5.49	3.06	1.44
Precipitation-effectiveness:	32.45					Temperature-efficiency .....: 61.92						
Moisture Index [MI=100*(P-PE)/PE] .....: -4.11 + C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE] .....: 10.13 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE] .....: 6.01 + No surplus (0<HI<10)												
Potential Evapotranspiration PE .....: 684.14 + First mesothermic (570<PE<712)												

