

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

PONFERRADA (ESP LEON)

Altitude: 541 m.

Latitude: 42°33'N Longitude: 6°35'W

Temperature observation period.: 1939-1970 (32)

Rainfall observation period....: 1939-1970 (32)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	4.90	8.10	1.80	14.70	-4.20	76.0	10.92
Feb.	6.50	10.90	2.20	17.40	-2.90	57.0	16.26
Mar.	10.00	15.10	4.80	21.40	0.20	56.0	36.43
Apr.	12.50	18.00	6.90	25.10	1.50	42.0	54.25
May.	14.90	20.60	9.20	28.70	3.70	52.0	77.58
Jun.	19.20	25.80	12.60	33.90	7.20	35.0	111.41
Jul.	21.60	28.70	14.40	36.00	9.60	16.0	131.87
Aug.	21.10	28.00	14.20	35.20	9.70	18.0	118.81
Sep.	18.40	24.80	12.00	32.20	6.60	35.0	85.41
Oct.	13.90	19.30	8.60	26.50	2.60	51.0	53.20
Nov.	8.90	13.20	4.70	18.80	-1.20	70.0	24.68
Dec.	5.10	8.00	2.10	14.10	-3.70	89.0	10.97
Year	13.08	18.38	7.79	25.33	2.42	597	731.79

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	230
Compensated thermicity index.....(Itc):	230
Simple continentality index.....(Ic):	16.7
Diurnality index.....(Id):	14.3
Annual ombrothermic index.....(Io):	3.80
Monthly estival ombrothermic index.....(Ios1):	0.74
Bimonthly estival ombrothermic index.....(Ios2):	0.80
Threemonthly estival ombrothermic index.....(Ios3):	1.11
Fourmonthly estival ombrothermic index.....(Ios4):	1.58
Annual ombro-evaporation index.....(Ioe):	0.53
Annual positive temperature.....(Tp):	1570
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	619
Positive precipitation.....(Pp):	597

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	5	3	2	2	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Euoceanic

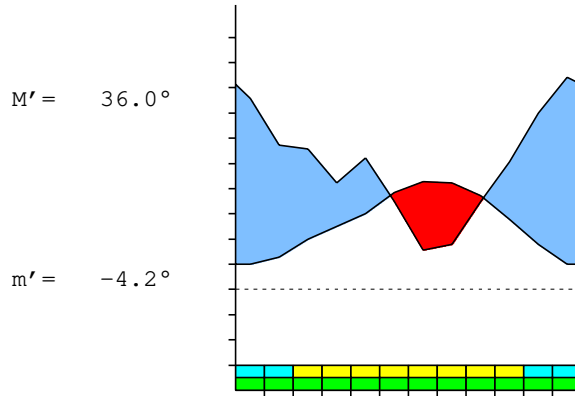
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: UPPER MESOMEDITERRANEAN LOW SUBHUMID

PONFERRADA (ESP LEON)

541 m

P= 597 42° 33'N 6° 35'W 32/32 y.
 T= 13.1° Ic= 16.7 Tp= 1570 Tn= 0
 m= 1.8° M= 8.1° Itc= 230 Io= 3.8



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 UPPER MESOMEDITERRANEAN LOW SUBHUMID

WATER INDEX CARD PONFERRADA (ESP LEON)
 Altitude: 541 m. Latitude: 42° 33'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	4.9	11	76	0	100	11	0	65	38	5.9
Feb.	6.5	16	57	0	100	16	0	41	40	2.5
Mar.	10.0	36	56	0	100	36	0	20	30	0.5
Apr.	12.5	54	42	-12	88	54	0	0	15	-0.2
May.	14.9	78	52	-26	62	78	0	0	7	-0.3
Jun.	19.2	111	35	-62	0	97	14	0	4	-0.6
Jul.	21.6	132	16	0	0	16	116	0	2	-0.8
Aug.	21.1	119	18	0	0	18	101	0	1	-0.8
Sep.	18.4	85	35	0	0	35	50	0	0	-0.5
Oct.	13.9	53	51	0	0	51	2	0	0	0.0
Nov.	8.9	25	70	45	45	25	0	0	0	1.8
Dec.	5.1	11	89	55	100	11	0	23	12	7.1
Year	13.1	732	597	*	*	448	284	149	149	*

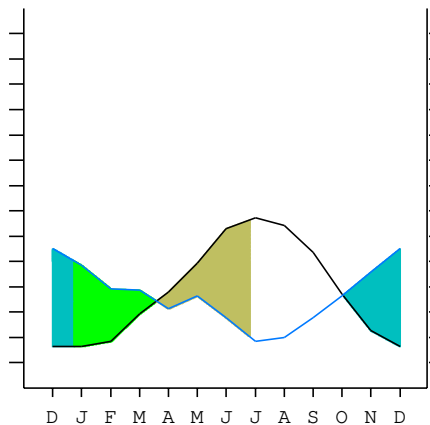
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

PONFERRADA (ESP LEON)

42°33'N 6°35'W 541 m 32/32 y.

T= 13.1 Ic= 16.7 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 1.8 Tp= 1570 UPPER MESOMEDITERRANEAN
 M= 8.1 Tn= 0 LOW SUBHUMID
 M' = 36.0 Itc= 230
 m' = -4.2 Io= 3.8
 P= 597 mm ———
 PE= 732 mm ———

Imbibing	2 Oct.
Saturation	22 Dec.
Reserve Use	19 Mar.
Deficit	25 Jun.



PONFERRADA (ESP LEON)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2b]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: b. Low

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.6b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant ..:
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Mehc.Mme.Shu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 207
 Coldest semester of the year.....(Psw): 390
 Warmest four months period of the year.....(Pcm1): 104
 Following warmest four months period.....(Pcm2): 286
 Positive precipitation dryest 3 months.....(Ppd): 69
 Positive precipitation dryest 2 months.....(Ppd2): 34
 Positive precipitation dryest 1 month.....(Ppd1): 16
 Positive precipitation warmest 3 months.....(Pps): 69
 Positive precipitation warmest 2 months.....(Pps2): 34
 Positive precipitation warmest 1 month.....(Pps1): 16
 Positive precipitation coldest 3 months.....(Ppw): 222
 Positive precipitation coldest 2 months.....(Ppw2): 165
 Positive precipitation coldest 1 month.....(Ppw1): 76

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	222	150	69	156

Seasonal rainfall rhythms: W > F > P > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 21.6
 Average coldest month [T].....(Tmin): 4.9
 Maximum temp. warmest month [M].....(Tmmax): 28.7
 Minimum temp. coldest month [m].....(Tmmin): 1.8
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.0
 Absolute Min.temp. coldest month [m'].....(Tamin): -4.2
 First warmest contrasted month [M].....(Tcmax): 28.7 (7)
 First coldest contrasted month [m].....(Tcmin): 14.4 (7)
 Estival temperature.....(Ts): 619
 Positive temperature dryest 3 months.....(Tpd): 619
 Positive temperature dryest 2 months.....(Tpd2): 427
 Positive temperature dryest 1 month.....(Tpd1): 216
 Positive temperature warmest 3 months.....(Tps): 619
 Positive temperature warmest 2 months.....(Tps2): 427
 Positive temperature warmest 1 month.....(Tps1): 216
 Positive temperature coldest 3 months.....(Tpw): 165
 Positive temperature coldest 2 months.....(Tpw2): 100
 Positive temperature coldest 1 month.....(Tpw1): 49

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.23
 Mediterranean index of July.[PE/P].....(Im1): 8.24
 Mediterranean index of July & August.....(Im2): 7.37
 Mediterranean index of June, July & August....(Im3): 5.25

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	890	760	570	560	420	520	350	160	180	350	510	700
Tp	51	49	65	100	125	149	192	216	211	184	139	89
Io (Iom)	17.5	15.5	8.77	5.60	3.36	3.49	1.82	0.74	0.85	1.90	3.67	7.87
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	2220 / 165			1500 / 374			690 / 619			1560 / 412		
Io (Iot)	13.45			4.011			1.115			3.786		
Semesters	December-May						June-November					
Pp(x10)/Tp	3720 / 539						2250 / 1031					
Io (Iosm)	6.902						2.182					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5970/1570=3.80 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	890	760	570	560	420	520	350	160	180	350	510	700
Tp [T*10]	51	49	65	100	125	149	192	216	211	184	139	89
Iom [Pp/Tp]	\$\$	\$\$	877	560	336	349	182	74	85	190	367	787
Avm [200-Iom]	***	***	***	***	***	***	18	126	115	10	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	2220 / 165			1500 / 374			690 / 619			1560 / 412		
Iot [Pp/Tp]	1345			401			111			379		
Avs E[Avm<200]	***			***			258			***		
Strong upper arid [1]						Weak upper arid [1]						
Strong lower semiarid [1]						Weak upper semiarid [2]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 16.70
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	21.58
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	21.76
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.10
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T]	45.63
+ Semiarid (60>R>40)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	25.86
+ Subhumid (30>Ia>20)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	72.76
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P]	2.19
+ Semiarid (3>DR>2)	
Aridity Index of UNEP [I=P/PE]	0.82
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	13.27
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 4. Mesothermic

Thornthwaite (1948)													
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
P-E ratio	0.49	0.34	0.29	0.20	0.23	0.13	0.05	0.06	0.14	0.23	0.39	0.58	
T-E ratio	2.21	2.93	4.50	5.63	6.70	8.64	9.72	9.50	8.28	6.25	4.00	2.29	
Precipitation-effectiveness:	31.40					Temperature-efficiency							70.65
Moisture Index [MI=100*(P-PE)/PE]	-18.42												
+ C1.Subhumid dry (-33.3<MI<0)													
Index of dryness [DI=100*d/PE]	38.74												
+ Strong deficit (33.3<DI)													
Index of humidity [HI=100*s/PE]	20.32												
+ Strong surplus (20<HI)													
Potential Evapotranspiration PE	731.79												
+ Second mesothermic (712<PE<855)													

