

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

MEDINA DE RIOSECO (ESP VALLADOLID) Altitude: 749 m.

Latitude: 41°53'N Longitude: 5°2'W

Temperature observation period.: 1942-1969 (28)

Rainfall observation period....: 1942-1969 (28)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	4.00	8.40	-0.40	14.20	-6.30	43.0	9.60
Feb.	5.30	10.70	0.00	16.20	-5.90	35.0	13.82
Mar.	8.50	14.50	2.50	21.20	-3.10	46.0	31.98
Apr.	10.90	17.30	4.50	23.80	-1.20	37.0	47.98
May.	14.30	21.00	7.60	28.60	1.20	42.0	76.70
Jun.	18.20	25.60	10.80	33.80	4.90	35.0	105.63
Jul.	21.30	29.70	13.00	36.60	7.90	15.0	130.49
Aug.	20.80	28.70	12.90	35.70	7.80	13.0	117.65
Sep.	17.80	24.80	10.90	34.20	5.40	33.0	84.05
Oct.	13.20	19.40	7.10	26.00	1.00	36.0	52.14
Nov.	7.70	13.00	2.40	18.80	-3.00	45.0	22.41
Dec.	4.70	9.10	0.30	14.00	-5.10	41.0	11.40
Year	12.22	18.52	5.97	25.26	0.30	421	703.85

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	202
Compensated thermicity index.....(Itc):	202
Simple continentality index.....(Ic):	17.3
Diurnality index.....(Id):	16.7
Annual ombrothermic index.....(Io):	2.87
Monthly estival ombrothermic index.....(Ios1):	0.63
Bimonthly estival ombrothermic index.....(Ios2):	0.67
Threemonthly estival ombrothermic index.....(Ios3):	1.04
Fourmonthly estival ombrothermic index.....(Ios4):	1.41
Annual ombro-evaporation index.....(Ioe):	0.60
Annual positive temperature.....(Tp):	1467
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	603
Positive precipitation.....(Pp):	421

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

Latitudinal Belt...: Low Eutemperate

Continentality.....: Oceanic - Low Semicontinental

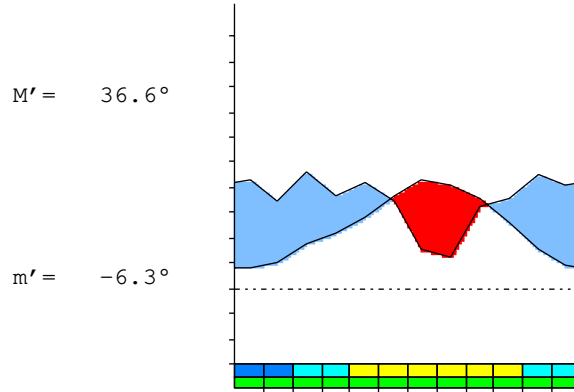
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: LOW SUPRAMEDITERRANEAN UPPER DRY

MEDINA DE RIOSECO (ESP VALLADOLID)

749 m

P= 421      41° 53'N      5° 2'W      28/28 y.  
 T= 12.2 °    Ic= 17.3      Tp= 1467      Tn= 0  
 m= -0.4 °    M= 8.4 °      Itc= 202      Io= 2.9



MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 LOW SUPRAMEDITERRANEAN UPPER DRY

WATER INDEX CARD

MEDINA DE RIOSECO (ESP VALLADOLID)

Altitude: 749 m.

Latitude: 41° 53'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	4.0	10	43	33	86	10	0	0	0	3.4
Feb.	5.3	14	35	14	100	14	0	7	3	1.5
Mar.	8.5	32	46	0	100	32	0	14	9	0.4
Apr.	10.9	48	37	-11	89	48	0	0	4	-0.2
May.	14.3	77	42	-35	54	77	0	0	2	-0.4
Jun.	18.2	106	35	-54	0	89	16	0	1	-0.6
Jul.	21.3	130	15	0	0	15	115	0	1	-0.8
Aug.	20.8	118	13	0	0	13	105	0	0	-0.8
Sep.	17.8	84	33	0	0	33	51	0	0	-0.6
Oct.	13.2	52	36	0	0	36	16	0	0	-0.3
Nov.	7.7	22	45	23	23	22	0	0	0	1.0
Dec.	4.7	11	41	30	52	11	0	0	0	2.5
Year	12.2	704	421	*	*	400	304	21	21	*

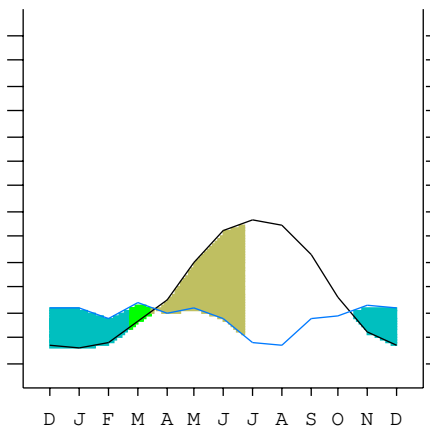
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coeficient    DF = Deficit    SP = Superavit

MEDINA DE RIOSECO (ESP VALLADOLID)

41°53'N    5°2'W    749 m 28/28 y.

T= 12.2    Ic= 17.3    MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 m= -0.4    Tp= 1467    LOW SUPRAMEDITERRANEAN  
 M= 8.4    Tn= 0    UPPER DRY  
 M' = 36.6    Itc= 202  
 m' = -6.3    Io= 2.9  
 P= 421    mm ———  
 PE= 704    mm ———

Imbibing	13 Oct.
Saturation	21 Feb.
Reserve Use	17 Mar.
Deficit	24 Jun.



MEDINA DE RIOSECO (ESP VALLADOLID)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality 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 [B8.4b.5a]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant .:  
 + Thermic type.....: 4. SUPRAMEDITERRANEAN  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : a. UPPER

Bioclimatic Classification .....Mepo.Sme.Dry.Sec

MEDINA DE RIOSECO (ESP VALLADOLID)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 174  
 Coldest semester of the year.....(Psw): 247  
 Warmest four months period of the year.....(Pcm1): 96  
 Following warmest four months period.....(Pcm2): 165  
 Positive precipitation dryest 3 months.....(Ppd): 61  
 Positive precipitation dryest 2 months.....(Ppd2): 28  
 Positive precipitation dryest 1 month.....(Ppd1): 13  
 Positive precipitation warmest 3 months.....(Pps): 63  
 Positive precipitation warmest 2 months.....(Pps2): 28  
 Positive precipitation warmest 1 month.....(Pps1): 15  
 Positive precipitation coldest 3 months.....(Ppw): 119  
 Positive precipitation coldest 2 months.....(Ppw2): 84  
 Positive precipitation coldest 1 month.....(Ppw1): 43

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	119	125	63	114

Seasonal rainfall rhythms: P > W > F > S

MEDINA DE RIOSECO (ESP VALLADOLID)

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 21.3  
 Average coldest month [T].....(Tmin): 4.0  
 Maximum temp. warmest month [M].....(Tmmax): 29.7  
 Minimum temp. coldest month [m].....(Tmmin): -0.4  
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.6  
 Absolute Min.temp. coldest month [m'].....(Tamin): -6.3  
 First warmest contrasted month [M].....(Tcmax): 29.7 (7)  
 First coldest contrasted month [m].....(Tcmin): 13.0 (7)  
 Estival temperature.....(Ts): 603  
 Positive temperature dryest 3 months.....(Tpd): 599  
 Positive temperature dryest 2 months.....(Tpd2): 421  
 Positive temperature dryest 1 month.....(Tpd1): 208  
 Positive temperature warmest 3 months.....(Tps): 603  
 Positive temperature warmest 2 months.....(Tps2): 421  
 Positive temperature warmest 1 month.....(Tps1): 213  
 Positive temperature coldest 3 months.....(Tpw): 140  
 Positive temperature coldest 2 months.....(Tpw2): 87  
 Positive temperature coldest 1 month.....(Tpw1): 40

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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
Ultragelidid...[M' <=0] (Pf)												
Hypergelidid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)	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		

MEDINA DE RIOSECO (ESP VALLADOLID)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.67  
 Mediterranean index of July.[PE/P].....(Im1): 8.70  
 Mediterranean index of July & August.....(Im2): 8.86  
 Mediterranean index of June, July & August....(Im3): 5.62

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	410	430	350	460	370	420	350	150	130	330	360	450
Tp	47	40	53	85	109	143	182	213	208	178	132	77
Io (Iom)	8.72	10.8	6.60	5.41	3.39	2.94	1.92	0.70	0.63	1.85	2.73	5.84
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1190 / 140			1250 / 337			630 / 603			1140 / 387		
Io (Iot)	8.500			3.709			1.045			2.946		
Semesters	December-May						June-November					
Pp(x10)/Tp	2440 / 477						1770 / 990					
Io (Iosm)	5.115						1.788					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 4210/1467=2.87 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	410	430	350	460	370	420	350	150	130	330	360	450
Tp [T*10]	47	40	53	85	109	143	182	213	208	178	132	77
Iom [Pp/Tp]	872	\$\$\$	660	541	339	294	192	70	63	185	273	584
Avm [200-Iom]	***	***	***	***	***	***	8	130	138	15	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1190 / 140			1250 / 337			630 / 603			1140 / 387		
Iot [Pp/Tp]	850			371			104			295		
Avs E[Avm<200]	***			***			275			***		
Weak lower arid [1]						Strong 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): 17.30
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	23.65
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	23.38
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....	1.16
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T] .....	34.44
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	18.94
+ Semiarid -mediterranean- (20>Ia>15)	
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....	47.74
+ Semiarid (50>Q>30)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	2.90
+ Semiarid (3>DR>2)	
Aridity Index of UNEP [I=P/PE] .....	0.60
+ Subhumid - dry (0.65>I>0.5)	
Potencial Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P].....	5.03
+ 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	0.27	0.21	0.25	0.18	0.19	0.14	0.05	0.04	0.13	0.16	0.25	0.25
T-E ratio	1.80	2.39	3.82	4.90	6.44	8.19	9.58	9.36	8.01	5.94	3.46	2.11
Precipitation-effectiveness: 21.08						Temperature-efficiency .....: 66.01						
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 .....												
+ First mesothermic (570<PE<712)												

