

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

WEIMAR (GERMANY)

Altitude: 268 m.

Latitude: 50°59'N Longitude: 11°19'E

Temperature observation period.: 1987-1994 (8)

Rainfall observation period....: 1992-1994 (3)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	-1.11	1.11	-3.33	12.22	-17.78	33.0	0.00
Feb.	-1.67	1.11	-4.44	16.11	-22.78	39.9	0.00
Mar.	3.06	7.22	-1.11	20.00	-13.89	39.9	15.25
Apr.	7.50	12.22	2.78	27.78	-6.11	40.1	43.25
May.	11.95	17.22	6.67	30.00	-2.78	49.5	80.35
Jun.	15.56	20.56	10.56	32.22	2.22	93.5	107.52
Jul.	17.23	21.67	12.78	35.00	6.11	68.1	120.17
Aug.	16.95	21.67	12.22	32.78	5.00	66.6	107.05
Sep.	13.61	18.33	8.89	31.11	1.11	53.1	72.57
Oct.	9.72	13.33	6.11	22.78	-2.22	37.8	44.20
Nov.	3.89	6.11	1.67	18.89	-8.89	28.7	14.32
Dec.	1.95	3.89	0.00	17.22	-16.11	32.0	6.61
Year	8.22	12.04	4.40	24.68	-6.34	582	611.29

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	49
Compensated thermicity index.....(Itc):	53
Simple continentality index.....(Ic):	18.9
Diurnality index.....(Id):	10.5
Annual ombrothermic index.....(Io):	5.02
Monthly estival ombrothermic index.....(Ios1):	3.93
Bimonthly estival ombrothermic index.....(Ios2):	3.94
Threemonthly estival ombrothermic index.....(Ios3):	4.59
Fourmonthly estival ombrothermic index.....(Ios4):	4.50
Annual ombro-evaporation index.....(Ioe):	0.95
Annual positive temperature.....(Tp):	1014
Annual negative temperature.....(Tn):	28
Estival temperature.....(Ts):	497
Positive precipitation.....(Pp):	509

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	6	4	0	0	2

Latitudinal Belt...: High Eutemperate

Continentality.....: Oceanic - Low Semicontinental

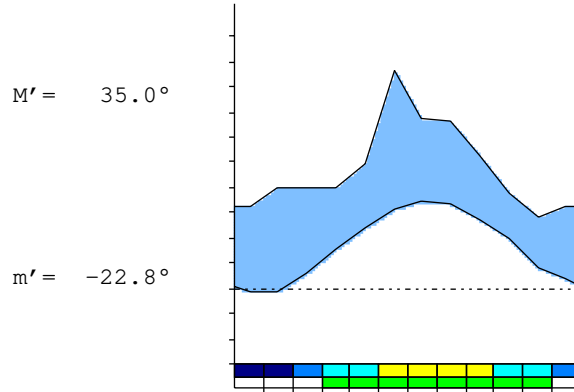
Bioclimate.....: TEMPERATE OCEANIC

Bioclimatic Belt...: UPPER SUPRATEMPERATE UPPER SUBHUMID

WEIMAR (GERMANY)

268 m

P= 582      50° 59'N      11° 19'E      8/3 y.  
 T= 8.2 °      Ic= 18.9      Tp= 1014      Tn= 28  
 m= -4.4 °      M= 1.1 °      Itc= 53      Io= 5.0



TEMPERATE OCEANIC  
 UPPER SUPRATEMPERATE UPPER SUBHUMID

WATER INDEX CARD      WEIMAR (GERMANY)  
 Altitude: 268 m.      Latitude: 50° 59'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	-1.1	0	33	33	73	0	0	0	0	*
Feb.	-1.7	0	40	27	100	0	0	13	6	*
Mar.	3.1	15	40	0	100	15	0	25	15	1.6
Apr.	7.5	43	40	-3	97	43	0	0	8	0.0
May.	11.9	80	50	-31	66	80	0	0	4	-0.3
Jun.	15.6	108	94	-14	52	108	0	0	2	-0.1
Jul.	17.2	120	68	-52	0	120	0	0	1	-0.4
Aug.	17.0	107	67	0	0	67	40	0	0	-0.3
Sep.	13.6	73	53	0	0	53	19	0	0	-0.2
Oct.	9.7	44	38	0	0	38	6	0	0	-0.1
Nov.	3.9	14	29	14	14	14	0	0	0	1.0
Dec.	2.0	7	32	25	40	7	0	0	0	3.8
Year	8.2	611	582	*	*	545	66	37	37	*

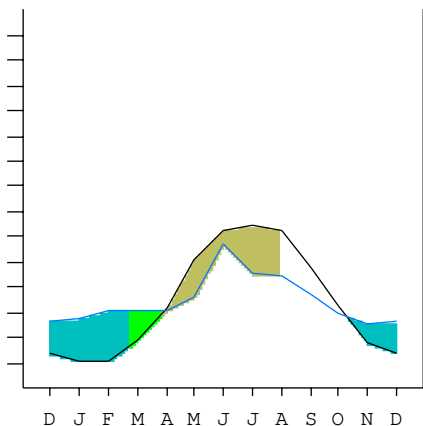
R = Reserve      VR = Variation of the reserve      RE = Real evapotranspiration  
 DR = Drainage      HC = Humidity coefficient      DF = Deficit      SP = Superavit

WEIMAR (GERMANY)

50°59'N      11°19'E      268 m      8/3 y.

T= 8.2      Ic= 18.9      TEMPERATE OCEANIC  
 m= -4.4      Tp= 1014      UPPER SUPRATEMPERATE  
 M= 1.1      Tn= 28      UPPER SUBHUMID  
 M' = 35.0      Itc= 53  
 m' = -22.8      Io= 5.0  
 P= 582      mm      ———  
 PE= 611      mm      ———

Imbibing	10 Oct.
Saturation	21 Feb.
Reserve Use	27 Mar.
Deficit	30 Jul.



WEIMAR (GERMANY)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B1a]  
 + Type .....: B. Oceanic  
 + Subtype .....: 1. Semicontinental  
 + Variant .....: a. Low

Thermic types [B1.B5]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 1. High Eutemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 5. Subtemperate

Bioclimatic types [C3.4a.6a]  
 + Macrobioclimate .....: C. TEMPERATE  
 + Bioclimate .....: 3. OCEANIC  
 + Bioclimatic variant .:  
 + Thermic type.....: 4. SUPRATEMPERATE  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 6. SUBHUMID  
 + Ombrothermic subtype : a. UPPER

Bioclimatic Classification .....Teoc.Ste.Shu.Sec

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 369  
 Coldest semester of the year.....(Psw): 214  
 Warmest four months period of the year.....(Pcm1): 281  
 Following warmest four months period.....(Pcm2): 132  
 Positive precipitation dryest 3 months.....(Ppd): 61  
 Positive precipitation dryest 2 months.....(Ppd2): 61  
 Positive precipitation dryest 1 month.....(Ppd1): 29  
 Positive precipitation warmest 3 months.....(Pps): 228  
 Positive precipitation warmest 2 months.....(Pps2): 135  
 Positive precipitation warmest 1 month.....(Pps1): 68  
 Positive precipitation coldest 3 months.....(Ppw): 32  
 Positive precipitation coldest 2 months.....(Ppw2): 0  
 Positive precipitation coldest 1 month.....(Ppw1): 0

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	104	129	228	119

Seasonal rainfall rhythms: S > P > F > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 17.2  
 Average coldest month [T].....(Tmin): -1.7  
 Maximum temp. warmest month [M].....(Tmax): 21.7  
 Minimum temp. coldest month [m].....(Tmin): -4.4  
 Absolute Max.temp. warmest month [M'].....(Tamax): 35.0  
 Absolute Min.temp. coldest month [m'].....(Tamin): -22.8  
 First warmest contrasted month [M].....(Tcmax): 17.2 (5)  
 First coldest contrasted month [m].....(Tcmin): 6.7 (5)  
 Estival temperature.....(Ts): 497  
 Positive temperature dryest 3 months.....(Tpd): 58  
 Positive temperature dryest 2 months.....(Tpd2): 58  
 Positive temperature dryest 1 month.....(Tpd1): 39  
 Positive temperature warmest 3 months.....(Tps): 497  
 Positive temperature warmest 2 months.....(Tps2): 342  
 Positive temperature warmest 1 month.....(Tps1): 172  
 Positive temperature coldest 3 months.....(Tpw): 20  
 Positive temperature coldest 2 months.....(Tpw2): 0  
 Positive temperature coldest 1 month.....(Tpw1): 0

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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	
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)	o	o										
Subgelid.....[m <=0] (Pf)	o	o	o									o
Pregelid.....[m' <=0] (Pf)	o	o	o	o	o					o	o	o
Agelid.....[m' > 0] (Pf)						o	o	o	o			
HiperAgelid..[all>0] (Pf)						o	o	o	o			

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.05  
 Mediterranean index of July.[PE/P].....(Im1): 1.76  
 Mediterranean index of July & August.....(Im2): 1.69  
 Mediterranean index of June, July & August....(Im3): 1.47

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	320	*	*	399	401	495	935	681	666	531	378	287
Tp	20	*	*	31	75	120	156	172	170	136	97	39
Io (Iom)	16.4	*	*	13.0	5.35	4.14	6.01	3.95	3.93	3.90	3.89	7.38
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	*/*			1295 / 225			2282 / 497			1196 / 272		
Io (Iot)	*			5.753			4.588			4.394		
Semesters	December-May						June-November					
Pp(x10)/Tp	*/*						3478 / 770					
Io (Iosm)	*						4.519					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5093/1014=5.02 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	320	*	*	399	401	495	935	681	666	531	378	287
Tp [T*10]	20	*	*	31	75	120	156	172	170	136	97	39
Iom [Pp/Tp]	\$\$	!!	!!	\$\$	535	414	601	395	393	390	389	738
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	* / *			1295 / 225			2282 / 497			1196 / 272		
Iot [Pp/Tp]	**			575			459			439		
Avs E [Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 18.90  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 20.95  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 22.74  
 + Oceanic (20<CI<40)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 1.05  
 + Oceanic (0.6<CI<1.1)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 70.83  
 + Temperate warm (100>R>60)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 31.95  
 + Humid (60>Ia>30)  
 I of Emberger (1930) [Q=100\*P/(Tmmax<sup>2</sup>-Tmmin<sup>2</sup>)] .....: 129.41  
 + Humid (Q>90)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 1.41  
 + Humid (2>DR>0)  
 Aridity Index of UNEP [I=P/PE] .....: 0.95  
 + Humid (I>0.65)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 15.02  
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....: B. Cold and temperate cold  
 + Region .....: 11. Psicroaxeric (Axeric cold)  
 + Thermic type: 5. Meso-microthermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.26	0.32	0.26	0.22	0.24	0.44	0.29	0.29	0.25	0.19	0.17	0.21
T-E ratio	0.00	0.00	1.38	3.38	5.38	7.00	7.75	7.63	6.12	4.37	1.75	0.88
Precipitation-effectiveness: 31.41						Temperature-efficiency .....: 45.64						
Moisture Index [MI=100*(P-PE)/PE] .....: -4.76 + C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE] .....: 10.86 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE] .....: 6.10 + No surplus (0<HI<10)												
Potential Evapotranspiration PE .....: 611.29 + First mesothermic (570<PE<712)												

