

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

TALLINN (ESTONIA)

Altitude: 44 m.

Latitude: 59°25'N Longitude: 24°48'E

Temperature observation period.: 1973-1994 (22)

Rainfall observation period....: 1984-1994 (11)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	-5.00	-2.22	-7.78	7.22	-32.22	48.3	0.00
Feb.	-5.56	-2.78	-8.33	7.78	-32.22	42.9	0.00
Mar.	-2.50	0.56	-5.56	15.00	-25.00	25.1	0.00
Apr.	3.06	6.67	-0.56	23.89	-17.22	33.0	23.58
May.	8.61	12.78	4.44	30.00	-5.00	33.0	71.89
Jun.	13.61	17.78	9.44	31.11	0.00	51.1	113.54
Jul.	16.95	20.56	13.33	32.78	3.89	85.6	137.31
Aug.	16.11	20.00	12.22	32.78	2.22	90.7	114.79
Sep.	11.67	15.00	8.33	27.78	-2.78	89.7	69.83
Oct.	5.83	8.33	3.33	21.11	-11.11	75.9	30.56
Nov.	1.39	3.33	-0.56	12.78	-21.11	51.8	6.25
Dec.	-2.50	-0.56	-4.44	10.00	-26.11	51.1	0.00
Year	5.14	8.29	1.99	21.02	-13.89	678	567.75

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	-60
Compensated thermicity index.....(Itc):	-22
Simple continentality index.....(Ic):	22.5
Diurnality index.....(Id):	8.3
Annual ombrothermic index.....(Io):	6.61
Monthly estival ombrothermic index.....(Ios1):	3.75
Bimonthly estival ombrothermic index.....(Ios2):	5.33
Threemonthly estival ombrothermic index.....(Ios3):	4.87
Fourmonthly estival ombrothermic index.....(Ios4):	4.71
Annual ombro-evaporation index.....(Ioe):	1.19
Annual positive temperature.....(Tp):	772
Annual negative temperature.....(Tn):	156
Estival temperature.....(Ts):	467
Positive precipitation.....(Pp):	511

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

Latitudinal Belt...: High Subtemperate

Continentality.....: Continental - Low Subcontinental

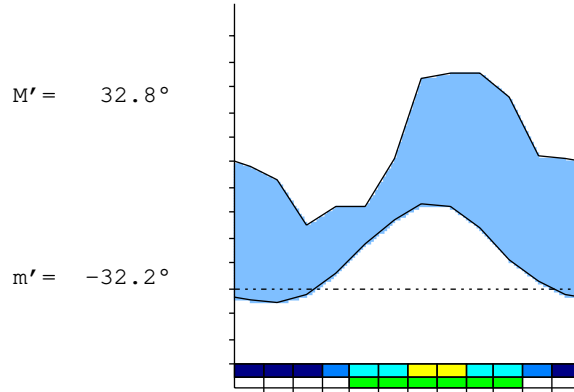
Bioclimate(Variant): TEMPERATE CONTINENTAL (HEMIBOREAL)

Bioclimatic Belt...: LOW OROTEMPERATE (HEMIBOREAL) LOW HUMID

TALLINN (ESTONIA)

44 m

P= 678      59° 25'N      24° 48'E      22/11 y.  
 T= 5.1 °      Ic= 22.5      Tp= 772      Tn= 156  
 m= -8.3 °      M= -2.8 °      Itc= -22      Io= 6.6



TEMPERATE CONTINENTAL (HEMIBOREAL)  
 LOW OROTEMPERATE (HEMIBOREAL) LOW HUMID

WATER INDEX CARD      TALLINN (ESTONIA)  
 Altitude: 44 m.      Latitude: 59° 25'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	-5.0	0	48	0	100	0	0	48	38	*
Feb.	-5.6	0	43	0	100	0	0	43	41	*
Mar.	-2.5	0	25	0	100	0	0	25	33	*
Apr.	3.1	24	33	0	100	24	0	9	21	0.3
May.	8.6	72	33	-39	61	72	0	0	11	-0.5
Jun.	13.6	114	51	-61	0	112	1	0	5	-0.5
Jul.	17.0	137	86	0	0	86	52	0	3	-0.3
Aug.	16.1	115	91	0	0	91	24	0	1	-0.2
Sep.	11.7	70	90	20	20	70	0	0	1	0.2
Oct.	5.8	31	76	45	65	31	0	0	0	1.4
Nov.	1.4	6	52	35	100	6	0	11	6	7.2
Dec.	-2.5	0	51	0	100	0	0	51	28	*
Year	5.1	568	678	*	*	491	77	188	188	*

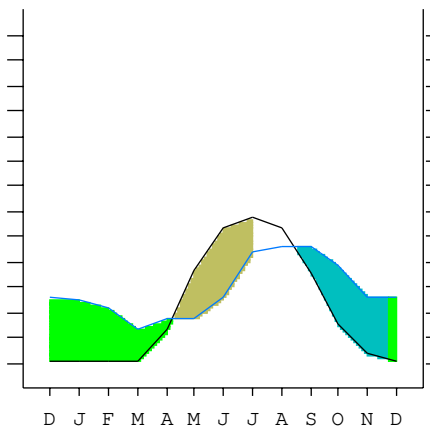
R = Reserve      VR = Variation of the reserve      RE = Real evapotranspiration  
 DR = Drainage      HC = Humidity coefficient      DF = Deficit      SP = Superavit

TALLINN (ESTONIA)

59°25'N      24°48'E      44 m 22/11 y.

T= 5.1      Ic= 22.5      TEMPERATE CONTINENTAL (HEMIBOREAL)  
 m= -8.3      Tp= 772      LOW OROTEMPERATE (HEMIBOREAL)  
 M= -2.8      Tn= 156      LOW HUMID  
 M' = 32.8      Itc= -22  
 m' = -32.2      Io= 6.6  
 P= 678      mm ———  
 PE= 568      mm ———

Imbibing	17 Aug.
Saturation	23 Nov.
Reserve Use	6 Apr.
Deficit	30 Jun.



TALLINN (ESTONIA)

Latitude: 59°25'N Longitude: 24°48'E Altitude: 44 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [C2a]  
 + Type .....: C. Continental  
 + Subtype .....: 2. Subcontinental  
 + Variant .....: a. Low

Thermic types [B2.C6]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 2. High Subtemperate  
 + Thermic type .....: C. Cold  
 + Thermic subtype .....: 6. Cool

Bioclimatic types [C2.5b.7b]  
 + Macrobioclimate .....: C. TEMPERATE  
 + Bioclimate .....: 2. CONTINENTAL  
 + Bioclimatic variant .: HEMIBOREAL  
 + Thermic type.....: 5. OROTEMPERATE (HEMIBOREAL)  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 7. HUMID  
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification .....Teco (Hem).Ote.Hum.Suc

TALLINN (ESTONIA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 426  
 Coldest semester of the year.....(Psw): 252  
 Warmest four months period of the year.....(Pcm1): 317  
 Following warmest four months period.....(Pcm2): 227  
 Positive precipitation dryest 3 months.....(Ppd): 66  
 Positive precipitation dryest 2 months.....(Ppd2): 33  
 Positive precipitation dryest 1 month.....(Ppd1): 0  
 Positive precipitation warmest 3 months.....(Pps): 227  
 Positive precipitation warmest 2 months.....(Pps2): 176  
 Positive precipitation warmest 1 month.....(Pps1): 86  
 Positive precipitation coldest 3 months.....(Ppw): 0  
 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	142	91	227	217

Seasonal rainfall rhythms: S > F > W > P

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 17.0  
 Average coldest month [T].....(Tmin): -5.6  
 Maximum temp. warmest month [M].....(Tmax): 20.6  
 Minimum temp. coldest month [m].....(Tmin): -8.3  
 Absolute Max.temp. warmest month [M'].....(Tamax): 32.8  
 Absolute Min.temp. coldest month [m'].....(Tamin): -32.2  
 First warmest contrasted month [M].....(Tcmax): 12.8 (5)  
 First coldest contrasted month [m].....(Tcmin): 4.4 (5)  
 Estival temperature.....(Ts): 467  
 Positive temperature dryest 3 months.....(Tpd): 117  
 Positive temperature dryest 2 months.....(Tpd2): 31  
 Positive temperature dryest 1 month.....(Tpd1): 0  
 Positive temperature warmest 3 months.....(Tps): 467  
 Positive temperature warmest 2 months.....(Tps2): 331  
 Positive temperature warmest 1 month.....(Tps1): 170  
 Positive temperature coldest 3 months.....(Tpw): 0  
 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		
Ultragelid...[M'<=0] (Pf)												
Hypergelid...[M <=0] (Pf)	o	o										o
Gelid.....[T <=0] (Pf)	o	o	o									o
Subgelid.....[m <=0] (Pf)	o	o	o	o							o	o
Pregelid.....[m'<=0] (Pf)	o	o	o	o	o	o			o	o	o	o
Agelid.....[m'> 0] (Pf)							o	o				
HiperAgelid..[all>0] (Pf)							o	o				

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.84  
 Mediterranean index of July.[PE/P].....(Im1): 1.60  
 Mediterranean index of July & August.....(Im2): 1.43  
 Mediterranean index of June, July & August....(Im3): 1.61

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	*	*	*	*	330	330	511	856	907	897	759	518
Tp	*	*	*	*	31	86	136	170	161	117	58	14
Io (Iom)	*	*	*	*	10.8	3.83	3.75	5.05	5.63	7.69	13.0	37.3
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	*/*			*/*			2274 / 467			2174 / 189		
Io (Iot)	*			*			4.873			11.51		
Semesters	December-May						June-November					
Pp(x10)/Tp	*/*						4448 / 656					
Io (Iosm)	*						6.785					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5108/772=6.61 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	*	*	*	*	330	330	511	856	907	897	759	518
Tp [T*10]	*	*	*	*	31	86	136	170	161	117	58	14
Iom [Pp/Tp]	!!	!!	!!	!!	\$\$	383	375	505	563	769	\$\$	\$\$
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	* / *			* / *			2274 / 467			2174 / 189		
Iot [Pp/Tp]	**			**			487			1151		
Avs E [Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 22.51  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 24.05  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 26.88  
 + Oceanic (20<CI<40)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 1.08  
 + Oceanic (0.6<CI<1.1)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 131.97  
 + Temperate humid (160>R>100)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 44.80  
 + Humid (60>Ia>30)  
 I of Emberger (1930) [Q=100\*P/(Tmmax<sup>2</sup>-Tmmin<sup>2</sup>)] .....: 191.95  
 + Humid (Q>90)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 0.76  
 + Humid (2>DR>0)  
 Aridity Index of UNEP [I=P/PE] .....: 1.19  
 + Humid (I>0.65)  
 Potencial Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 12.13  
 + 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: 6. Microthermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.41	0.36	0.20	0.21	0.17	0.24	0.38	0.41	0.47	0.48	0.37	0.43
T-E ratio	0.00	0.00	0.00	1.38	3.87	6.12	7.63	7.25	5.25	2.62	0.63	0.00
Precipitation-effectiveness: 41.27						Temperature-efficiency .....: 34.75						
Moisture Index [MI=100*(P-PE)/PE] .....: 19.45 + C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE] .....: 13.58 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE] .....: 33.03 + Strong surplus (20<HI)												
Potential Evapotranspiration PE .....: 567.75 + Second microthermic (427<PE<570)												

