

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

TVINGSTRUP (DENMARK)

Altitude: 66 m.

Latitude: 55°55'N Longitude: 9°55'E

Temperature observation period.: 1956-1994 (39)

Rainfall observation period....: 1954-1994 (41)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	0.55	2.78	-1.67	15.00	-21.67	50.8	2.38
Feb.	0.00	2.22	-2.22	11.11	-19.44	40.6	0.00
Mar.	2.22	5.56	-1.11	16.67	-18.89	53.3	13.67
Apr.	5.56	9.44	1.67	23.89	-9.44	50.8	37.49
May.	10.56	15.00	6.11	29.44	-2.78	50.8	80.15
Jun.	13.33	18.33	8.33	31.67	0.00	43.2	103.12
Jul.	16.11	21.11	11.11	31.11	3.33	63.5	123.86
Aug.	15.28	20.00	10.56	31.67	1.11	68.6	104.18
Sep.	12.22	16.11	8.33	30.56	-2.22	76.2	70.18
Oct.	7.78	11.11	4.44	22.78	-5.56	73.7	38.77
Nov.	3.61	6.11	1.11	15.00	-14.44	66.0	14.54
Dec.	1.11	3.33	-1.11	11.11	-17.78	53.3	4.43
Year	7.36	10.93	3.80	22.50	-8.98	691	592.75

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	74
Compensated thermicity index.....(Itc):	74
Simple continentality index.....(Ic):	16.1
Diurnality index.....(Id):	10.0
Annual ombrothermic index.....(Io):	7.36
Monthly estival ombrothermic index.....(Ios1):	3.24
Bimonthly estival ombrothermic index.....(Ios2):	4.21
Threemonthly estival ombrothermic index.....(Ios3):	3.92
Fourmonthly estival ombrothermic index.....(Ios4):	4.09
Annual ombro-evaporation index.....(Ioe):	1.17
Annual positive temperature.....(Tp):	883
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	447
Positive precipitation.....(Pp):	650

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

Latitudinal Belt...: Low Subtemperate

Continentality.....: Oceanic - Low Euoceanic

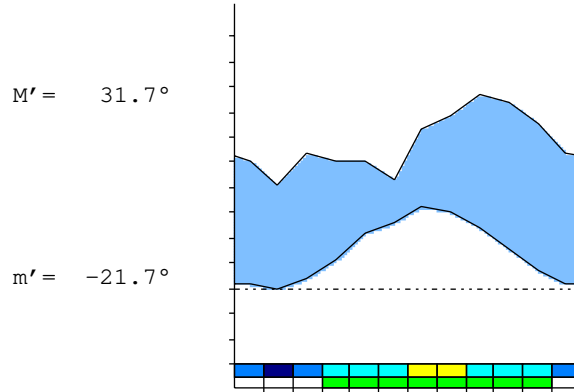
Bioclimate(Variant): TEMPERATE OCEANIC (HEMIBOREAL)

Bioclimatic Belt...: UPPER SUPRATEMPERATE (HEMIBOREAL) LOW HUMID

TVINGSTRUP (DENMARK)

66 m

P= 691 55° 55'N 9° 55'E 39/41 y.  
 T= 7.4 ° Ic= 16.1 Tp= 883 Tn= 0  
 m= -2.2 ° M= 2.2 ° Itc= 74 Io= 7.4



TEMPERATE OCEANIC (HEMIBOREAL)  
 UPPER SUPRATEMPERATE (HEMIBOREAL) LOW HUMID

WATER INDEX CARD TVINGSTRUP (DENMARK)  
 Altitude: 66 m. Latitude: 55° 55'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	0.6	2	51	0	100	2	0	48	35	20.3
Feb.	0.0	0	41	0	100	0	0	41	38	*
Mar.	2.2	14	53	0	100	14	0	40	39	2.8
Apr.	5.6	37	51	0	100	37	0	13	26	0.3
May.	10.6	80	51	-29	71	80	0	0	13	-0.3
Jun.	13.3	103	43	-60	11	103	0	0	6	-0.5
Jul.	16.1	124	64	-11	0	74	50	0	3	-0.4
Aug.	15.3	104	69	0	0	69	36	0	2	-0.3
Sep.	12.2	70	76	6	6	70	0	0	1	0.0
Oct.	7.8	39	74	35	41	39	0	0	0	0.9
Nov.	3.6	15	66	51	92	15	0	0	0	3.5
Dec.	1.1	4	53	8	100	4	0	41	21	11.0
Year	7.4	593	691	*	*	508	85	183	183	*

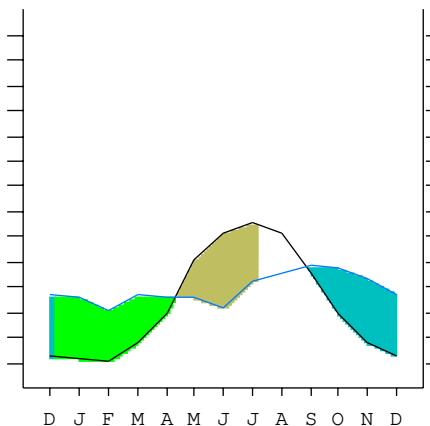
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration  
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

TVINGSTRUP (DENMARK)

55°55'N 9°55'E 66 m 39/41 y.

T= 7.4 Ic= 16.1 TEMPERATE OCEANIC (HEMIBOREAL)  
 m= -2.2 Tp= 883 UPPER SUPRATEMPERATE (HEMIBOREAL)  
 M= 2.2 Tn= 0 LOW HUMID  
 M' = 31.7 Itc= 74  
 m' = -21.7 Io= 7.4  
 P= 691 mm ———  
 PE= 593 mm ———

Imbibing	26 Aug.
Saturation	5 Dec.
Reserve Use	10 Apr.
Deficit	6 Jul.



TVINGSTRUP (DENMARK)

Latitude: 55°55'N Longitude: 9°55'E Altitude: 66 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B2b]  
 + Type .....: B. Oceanic  
 + Subtype .....: 2. Euroceanic  
 + Variant .....: b. Low

Thermic types [B2.B5]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 2. Low Subtemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 5. Subtemperate

Bioclimatic types [C3.4a.7b]  
 + Macrobioclimate .....: C. TEMPERATE  
 + Bioclimate .....: 3. OCEANIC  
 + Bioclimatic variant .: HEMIBOREAL  
 + Thermic type.....: 4. SUPRATEMPERATE (HEMIBOREAL)  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 7. HUMID  
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification .....Teoc(Hem).Ste.Hum.Euo

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 376  
 Coldest semester of the year.....(Psw): 315  
 Warmest four months period of the year.....(Pcm1): 252  
 Following warmest four months period.....(Pcm2): 244  
 Positive precipitation dryest 3 months.....(Ppd): 104  
 Positive precipitation dryest 2 months.....(Ppd2): 51  
 Positive precipitation dryest 1 month.....(Ppd1): 0  
 Positive precipitation warmest 3 months.....(Pps): 175  
 Positive precipitation warmest 2 months.....(Pps2): 132  
 Positive precipitation warmest 1 month.....(Pps1): 64  
 Positive precipitation coldest 3 months.....(Ppw): 104  
 Positive precipitation coldest 2 months.....(Ppw2): 51  
 Positive precipitation coldest 1 month.....(Ppw1): 0

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	144	154	175	215

Seasonal rainfall rhythms: F > S > P > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 16.1  
 Average coldest month [T].....(Tmin): 0.0  
 Maximum temp. warmest month [M].....(Tmmax): 21.1  
 Minimum temp. coldest month [m].....(Tmmin): -2.2  
 Absolute Max.temp. warmest month [M'].....(Tamax): 31.7  
 Absolute Min.temp. coldest month [m'].....(Tamin): -21.7  
 First warmest contrasted month [M].....(Tcmax): 18.3 (6)  
 First coldest contrasted month [m].....(Tcmin): 8.3 (6)  
 Estival temperature.....(Ts): 447  
 Positive temperature dryest 3 months.....(Tpd): 28  
 Positive temperature dryest 2 months.....(Tpd2): 6  
 Positive temperature dryest 1 month.....(Tpd1): 0  
 Positive temperature warmest 3 months.....(Tps): 447  
 Positive temperature warmest 2 months.....(Tps2): 314  
 Positive temperature warmest 1 month.....(Tps1): 161  
 Positive temperature coldest 3 months.....(Tpw): 17  
 Positive temperature coldest 2 months.....(Tpw2): 6  
 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										
Subgelid... [m <= 0] (Pf)	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): 0.86  
 Mediterranean index of July. [PE/P]..... (Im1): 1.95  
 Mediterranean index of July & August..... (Im2): 1.73  
 Mediterranean index of June, July & August.... (Im3): 1.89

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp (x10)	533	508	*	533	508	508	432	635	686	762	737	660
Tp	11	6	*	22	56	106	133	161	153	122	78	36
Io (Iom)	48.0	92.4	*	24.0	9.14	4.81	3.24	3.94	4.49	6.24	9.47	18.3
Seasons	Winter			Spring			Summer			Autumn		
Pp (x10) / Tp	*/*			1549 / 183			1753 / 447			2159 / 236		
Io (Iot)	*			8.446			3.920			9.144		
Semesters	December-May						June-November					
Pp (x10) / Tp	*/*						3912 / 683					
Io (Iosm)	*						5.725					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 6502/883=7.36 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	533	508	*	533	508	508	432	635	686	762	737	660
Tp [T*10]	11	6	*	22	56	106	133	161	153	122	78	36
Iom [Pp/Tp]	\$\$	\$\$	\$\$	\$\$	914	481	324	394	449	624	947	\$\$
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1447 / 17			1549 / 183			1753 / 447			2159 / 236		
Iot [Pp/Tp]	\$\$			845			392			914		
Avs E [Avm < 200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 16.11  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 12.67  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 16.00  
 + Hyperoceanic (-20<CI<20)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 0.82  
 + Oceanic (0.6<CI<1.1)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 93.85  
 + Temperate warm (100>R>60)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 39.79  
 + Humid (60>Ia>30)  
 I of Emberger (1930) [Q=100\*P/(Tmmax<sup>2</sup>-Tmmin<sup>2</sup>)] .....: 156.75  
 + Humid (Q>90)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 1.07  
 + Humid (2>DR>0)  
 Aridity Index of UNEP [I=P/PE] .....: 1.17  
 + Humid (I>0.65)  
 Potencial Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 8.41  
 + 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	0.38	0.30	0.37	0.31	0.26	0.20	0.28	0.31	0.38	0.43	0.45	0.39
T-E ratio	0.25	0.00	1.00	2.50	4.75	6.00	7.25	6.88	5.50	3.50	1.62	0.50
Precipitation-effectiveness: 40.60						Temperature-efficiency .....: 39.75						
Moisture Index [MI=100*(P-PE)/PE] .....: 16.54 + C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE] .....: 14.37 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE] .....: 30.91 + Strong surplus (20<HI)												
Potential Evapotranspiration PE .....: 592.75 + First mesothermic (570<PE<712)												

