

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

PORTO NACIONAL (BRAZIL)

Altitude: 239 m.

Latitude: 10°43'S Longitude: 48°25'W

Temperature observation period.: 1961-1990 (30)

Rainfall observation period....: 1961-1990 (30)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	25.50	31.30	21.70	36.80	18.80	240.0	127.13
Feb.	25.50	32.50	22.50	37.50	14.50	267.0	113.13
Mar.	25.60	31.20	24.00	36.40	18.00	272.0	124.20
Apr.	26.00	32.20	22.00	37.00	17.90	148.0	123.81
May.	26.20	33.00	20.90	36.90	15.00	38.0	128.55
Jun.	25.50	33.40	18.90	37.00	12.50	7.0	111.97
Jul.	25.40	33.80	18.00	37.20	12.80	5.0	113.85
Aug.	27.00	34.10	19.20	40.10	13.90	7.0	142.29
Sep.	28.00	35.60	21.60	39.50	15.20	52.0	147.51
Oct.	26.80	33.20	22.30	38.40	19.20	183.0	146.18
Nov.	26.20	32.10	22.10	38.70	14.50	219.0	134.98
Dec.	25.80	31.40	22.00	37.90	18.00	230.0	133.80
Year	26.13	32.82	21.27	37.78	15.86	1668	1547.4

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	779
Compensated thermicity index.....(Itc):	779
Simple continentality index.....(Ic):	2.6
Diurnality index.....(Id):	15.8
Annual ombrothermic index.....(Io):	5.32
Monthly dry ombrothermic index.....(Iod1):	0.20
Bimonthly dry ombrothermic index.....(Iod2):	0.24
Three monthly dry ombrothermic index.....(Iod3):	0.24
Four monthly dry ombrothermic index.....(Iod4):	0.55
Annual ombro-evaporation index.....(Ioe):	1.26
Annual positive temperature.....(Tp):	3135
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	779
Positive precipitation.....(Pp):	1668

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	7	0	2	3	0

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - Low Ultrahyperoceanic

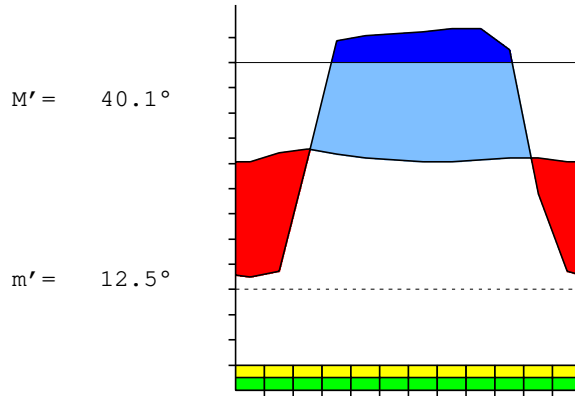
Bioclimate(Variant): TROPICAL PLUVISEASONAL (SUBXEROPHYTIC)

Bioclimatic Belt...: UPPER INFRATROPICAL UPPER SUBHUMID

PORTO NACIONAL (BRAZIL)

239 m

P= 1668 10° 43' S 48° 25' W 30/30 y.
 T= 26.1° Ic= 2.6 Tp= 3135 Tn= 0
 m= 18.0° M= 33.8° Itc= 779 Io= 5.3



TROPICAL PLUVISEASONAL (SUBXEROPHYTIC)
 UPPER INFRATROPICAL UPPER SUBHUMID

WATER INDEX CARD PORTO NACIONAL (BRAZIL)
 Altitude: 239 m. Latitude: 10° 43' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	25.4	114	5	0	0	5	109	0	10	-0.9
Aug.	27.0	142	7	0	0	7	135	0	5	-0.9
Sep.	28.0	148	52	0	0	52	96	0	2	-0.6
Oct.	26.8	146	183	37	37	146	0	0	1	0.2
Nov.	26.2	135	219	63	100	135	0	21	11	0.6
Dec.	25.8	134	230	0	100	134	0	96	54	0.7
Jan.	25.5	127	240	0	100	127	0	113	83	0.8
Feb.	25.5	113	267	0	100	113	0	154	119	1.3
Mar.	25.6	124	272	0	100	124	0	148	133	1.1
Apr.	26.0	124	148	0	100	124	0	24	79	0.1
May.	26.2	129	38	-91	9	129	0	0	39	-0.7
Jun.	25.5	112	7	-9	0	16	96	0	20	-0.9
Year	26.1	1547	1668	*	*	1112	435	556	556	*

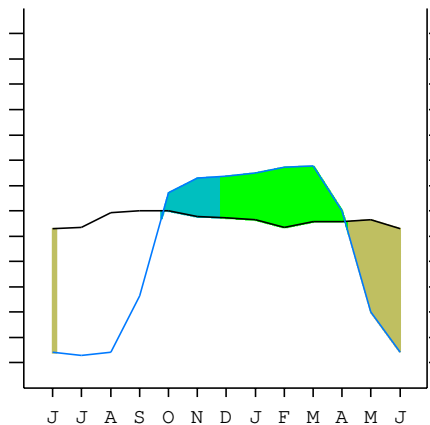
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

PORTO NACIONAL (BRAZIL)

10°43' S 48°25' W 239 m 30/30 y.

T= 26.1 Ic= 2.6 TROPICAL PLUVISEASONAL (SUBXEROPHYTIC)
 m= 18.0 Tp= 3135 UPPER INFRATROPICAL
 M= 33.8 Tn= 0 UPPER SUBHUMID
 M' = 40.1 Itc= 779
 m' = 12.5 Io= 5.3
 P= 1668 mm ———
 PE= 1547 mm ———

Imbibing	22 Sep.
Saturation	23 Nov.
Reserve Use	7 Apr.
Deficit	3 Jun.



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [A1b]
 + Type: A. Hyperoceanic
 + Subtype: 1. Ultrahyperoceanic
 + Variant: b. Low
 Thermic types [A2.A1]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 1. Torrid
 Bioclimatic types [A4.1a.6a]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 4. PLUVISEASONAL
 + Bioclimatic variant .:
 + Thermic type.....: 1. INFRATROPICAL
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : a. UPPER
 Bioclimatic Classification: Trde.Itr.Shu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 931
 Coldest semester of the year.....(Psw): 737
 Warmest four months period of the year.....(Pcm1): 461
 Following warmest four months period.....(Pcm2): 1009
 Positive precipitation dryest 3 months.....(Ppd): 19
 Positive precipitation dryest 2 months.....(Ppd2): 12
 Positive precipitation dryest 1 month.....(Ppd1): 5
 Positive precipitation warmest 3 months.....(Pps): 242
 Positive precipitation warmest 2 months.....(Pps2): 59
 Positive precipitation warmest 1 month.....(Pps1): 52
 Positive precipitation coldest 3 months.....(Ppw): 779
 Positive precipitation coldest 2 months.....(Ppw2): 12
 Positive precipitation coldest 1 month.....(Ppw1): 5

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	19	454	737	458

Tropical rainfall rhythms: 1 > 2 > 4 > 3

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 28.0
 Average coldest month [T].....(Tmin): 25.4
 Maximum temp. warmest month [M].....(Tmmax): 35.6
 Minimum temp. coldest month [m].....(Tmmin): 18.0
 Absolute Max.temp. warmest month [M'].....(Tamax): 40.1
 Absolute Min.temp. coldest month [m'].....(Tamin): 12.5
 First warmest contrasted month [M].....(Tcmax): 33.8 (7)
 First coldest contrasted month [m].....(Tcmin): 18.0 (7)
 Dry station temperature.....(Td): 779
 Positive temperature dryest 3 months.....(Tpd): 779
 Positive temperature dryest 2 months.....(Tpd2): 509
 Positive temperature dryest 1 month.....(Tpd1): 254
 Positive temperature warmest 3 months.....(Tps): 818
 Positive temperature warmest 2 months.....(Tps2): 550
 Positive temperature warmest 1 month.....(Tps1): 280
 Positive temperature coldest 3 months.....(Tpw): 766
 Positive temperature coldest 2 months.....(Tpw2): 509
 Positive temperature coldest 1 month.....(Tpw1): 254

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.93
 Mediterranean index of January.....(Im1): No
 Mediterranean index of January & February.....(Im2): No
 Mediterranean index of December to February...(Im3): No

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	2300	2400	2670	2720	1480	380	70	50	70	520	1830	2190
Tp	258	255	255	256	260	262	255	254	270	280	268	262
Io (Iom)	8.91	9.41	10.5	10.6	5.69	1.45	0.27	0.20	0.26	1.86	6.83	8.36
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	7370 / 768			4580 / 778			190 / 779			4540 / 810		
Io (Iot)	9.596			5.887			0.244			5.605		
Semesters	December-May						June-November					
Pp(x10)/Tp	11950 / 1546						4730 / 1589					
Io (Iosm)	7.730						2.977					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 16680/3135=5.32 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	2300	2400	2670	2720	1480	380	70	50	70	520	1830	2190
Tp [T*10]	258	255	255	256	260	262	255	254	270	280	268	262
Iom [Pp/Tp]	891	941	\$\$\$	\$\$\$	569	145	27	20	26	186	683	836
Avm [200-Iom]	***	***	***	***	***	55	173	180	174	14	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	7370 / 768			4580 / 778			190 / 779			4540 / 810		
Iot [Pp/Tp]	960			589			24			560		
Avs E[Avm<200]	***			***			527			***		
Upper ultrahyperarid [1]						Lower hyperarid [3]						
Weak lower semiarid [1]						Weak upper semiarid [1]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 2.60
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 3.37
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: -1.51
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 0.57
 + Hyperoceanic (0<CI<0.6)
 Rainfall Index of Lang (1925) [R=P/T]: 63.85
 + Temperate warm (100>R>60)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 46.17
 + Humid (60>Ia>30)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 176.81
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 1.57
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 1.08
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 44.35
 + 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: 1. Megathermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.96	1.09	1.11	0.56	0.12	0.02	0.01	0.02	0.17	0.69	0.86	0.91
T-E ratio	11.48	11.48	11.52	11.70	11.79	11.48	11.43	12.15	12.60	12.06	11.79	11.61
Precipitation-effectiveness:	65.20					Temperature-efficiency: 141.07						
Moisture Index [MI=100*(P-PE)/PE]: 7.79 + C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE]: 28.12 + Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE]: 35.91 + Strong surplus (20<HI)												
Potential Evapotranspiration PE: 1547.39 + Megathermic (PE>1440)												

