

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

S.Rivas-Martinez(+) & S.Rivas-Saenz

(Adapted to Synoptical Table 14/02/2020)

VITORIA (BRAZIL)

Altitude: 4 m.

Latitude: 20°16'S Longitude: 40°17'W

Temperature observation period.: 1982-1994 (13)

Rainfall observation period....: 1980-1994 (15)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	26.39	30.00	22.78	36.11	18.89	94.0	152.76
Feb.	26.67	30.56	22.78	36.11	12.78	75.2	136.86
Mar.	26.39	30.00	22.78	36.11	20.00	131.1	140.70
Apr.	25.00	28.33	21.67	38.89	16.11	98.3	110.37
May.	23.61	27.22	20.00	33.89	8.89	57.4	91.89
Jun.	22.50	26.11	18.89	32.22	15.00	85.6	75.30
Jul.	21.67	25.00	18.33	31.11	12.22	55.6	70.17
Aug.	21.95	25.56	18.33	31.11	6.11	54.1	76.79
Sep.	22.50	25.56	19.44	32.22	7.78	69.1	82.75
Oct.	23.62	26.67	20.56	35.00	15.00	107.2	104.47
Nov.	24.17	27.22	21.11	33.89	17.22	144.8	111.99
Dec.	25.56	28.89	22.22	35.00	17.78	160.3	139.91
Year	24.17	27.59	20.74	34.30	13.98	1133	1294.0

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	675
Compensated thermicity index.....(Itc):	675
Simple continentality index.....(Ic):	5.0
Diurnality index.....(Id):	7.8
Annual ombrothermic index.....(Io):	3.91
Monthly dry ombrothermic index.....(Iod1):	2.46
Bimonthly dry ombrothermic index.....(Iod2):	2.51
Threemonthly dry ombrothermic index.....(Iod3):	2.70
Fourmonthly dry ombrothermic index.....(Iod4):	2.98
Annual ombro-evaporation index.....(Ioe):	0.88
Annual positive temperature.....(Tp):	2900
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	661
Positive precipitation.....(Pp):	1133

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	4	8	0	0	0

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - High Euhyperoceanic

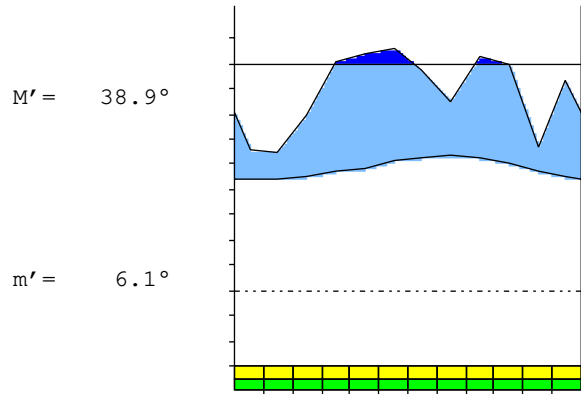
Bioclimate(Variant): TROPICAL PLUVIAL (SUBHYGROPHYTIC)

Bioclimatic Belt...: UPPER INFRATROPICAL LOW SUBHUMID

VITORIA (BRAZIL)

4 m

P= 1133      20° 16'S      40° 17'W      13/15 y.  
 T= 24.2 °    Ic= 5.0      Tp= 2900      Tn= 0  
 m= 18.3 °    M= 25.0 °    Itc= 675      Io= 3.9



TROPICAL PLUVIAL (SUBHYGROPHYTIC)  
 UPPER INFRATROPICAL LOW SUBHUMID

WATER INDEX CARD

VITORIA (BRAZIL)

Altitude: 4 m.

Latitude: 20° 16'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	21.7	70	56	-10	0	66	4	0	0	-0.2
Aug.	22.0	77	54	0	0	54	23	0	0	-0.2
Sep.	22.5	83	69	0	0	69	14	0	0	-0.1
Oct.	23.6	104	107	3	3	104	0	0	0	0.0
Nov.	24.2	112	145	33	36	112	0	0	0	0.2
Dec.	25.6	140	160	20	56	140	0	0	0	0.1
Jan.	26.4	153	94	-56	0	150	3	0	0	-0.3
Feb.	26.7	137	75	0	0	75	62	0	0	-0.4
Mar.	26.4	141	131	0	0	131	10	0	0	0.0
Apr.	25.0	110	98	0	0	98	12	0	0	-0.1
May.	23.6	92	57	0	0	57	34	0	0	-0.3
Jun.	22.5	75	86	10	10	75	0	0	0	0.1
Year	24.2	1294	1133	*	*	1133	161	0	0	*

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

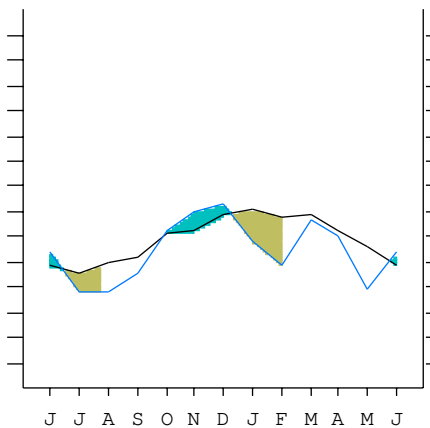
VITORIA (BRAZIL)

20°16'S    40°17'W

4 m 13/15 y.

T= 24.2    Ic= 5.0    TROPICAL PLUVIAL (SUBHYGROPHYTIC)  
 m= 18.3    Tp= 2900    UPPER INFRATROPICAL  
 M= 25.0    Tn= 0    LOW SUBHUMID  
 M' = 38.9    Itc= 675  
 m' = 6.1    Io= 3.9  
 P= 1133    mm ———  
 PE= 1294    mm ———

Imbibing	24 May.
Saturation	8 Dec.
Reserve Use	29 Jan.
Deficit	



VITORIA (BRAZIL)

Latitude: 20°16'S Longitude: 40°17'W Altitude: 4 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [A2a]  
 + Type .....: A. Hyperoceanic  
 + Subtype .....: 2. Euhyperoceanic  
 + Variant .....: a. High

Thermic types [A2.A1]  
 + Latitudinal zone ....: A. Warm  
 + Latitudinal belt ....: 2. Eutropical  
 + Thermic type .....: A. Warm  
 + Thermic subtype .....: 1. Torrid

Bioclimatic types [A5.1a.6b]  
 + Macrobioclimate .....: A. TROPICAL  
 + Bioclimate .....: 5. PLUVIAL  
 + Bioclimatic variant .: SUBHYGROPHYTIC  
 + Thermic type.....: 1. INFRATROPICAL  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 6. SUBHUMID  
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification .....Trpl(Shi).Itr.Shu.Eho

VITORIA (BRAZIL)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 704  
 Coldest semester of the year.....(Psw): 429  
 Warmest four months period of the year.....(Pcm1): 461  
 Following warmest four months period.....(Pcm2): 297  
 Positive precipitation dryest 3 months.....(Ppd): 179  
 Positive precipitation dryest 2 months.....(Ppd2): 110  
 Positive precipitation dryest 1 month.....(Ppd1): 54  
 Positive precipitation warmest 3 months.....(Pps): 300  
 Positive precipitation warmest 2 months.....(Pps2): 169  
 Positive precipitation warmest 1 month.....(Pps1): 75  
 Positive precipitation coldest 3 months.....(Ppw): 195  
 Positive precipitation coldest 2 months.....(Ppw2): 110  
 Positive precipitation coldest 1 month.....(Ppw1): 56

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	195	321	329	286

Tropical rainfall rhythms: 1 > 4 > 2 > 3

VITORIA (BRAZIL)

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 26.7  
 Average coldest month [T].....(Tmin): 21.7  
 Maximum temp. warmest month [M].....(Tmmax): 30.6  
 Minimum temp. coldest month [m].....(Tmmin): 18.3  
 Absolute Max.temp. warmest month [M'].....(Tamax): 38.9  
 Absolute Min.temp. coldest month [m'].....(Tamin): 6.1  
 First warmest contrasted month [M].....(Tcmax): 30.6 (2)  
 First coldest contrasted month [m].....(Tcmin): 22.8 (2)  
 Dry station temperature.....(Td): 661  
 Positive temperature dryest 3 months.....(Tpd): 661  
 Positive temperature dryest 2 months.....(Tpd2): 436  
 Positive temperature dryest 1 month.....(Tpd1): 220  
 Positive temperature warmest 3 months.....(Tps): 795  
 Positive temperature warmest 2 months.....(Tps2): 531  
 Positive temperature warmest 1 month.....(Tps1): 267  
 Positive temperature coldest 3 months.....(Tpw): 661  
 Positive temperature coldest 2 months.....(Tpw2): 436  
 Positive temperature coldest 1 month.....(Tpw1): 217

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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): 1.14  
 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)	1603	940	752	1311	983	574	856	556	541	691	1072	1448
Tp	256	264	267	264	250	236	225	217	220	225	236	242
Io (Iom)	6.27	3.56	2.82	4.97	3.93	2.43	3.80	2.57	2.46	3.07	4.54	5.99
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	3295 / 786			2868 / 750			1953 / 661			3211 / 703		
Io (Iot)	4.191			3.824			2.954			4.568		
Semesters	December-May						June-November					
Pp(x10)/Tp	6163 / 1536						5164 / 1364					
Io (Iosm)	4.012						3.786					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 11327/2900=3.91 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1603	940	752	1311	983	574	856	556	541	691	1072	1448
Tp [T*10]	256	264	267	264	250	236	225	217	220	225	236	242
Iom [Pp/Tp]	627	356	282	497	393	243	380	257	246	307	454	599
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	3295 / 786			2868 / 750			1953 / 661			3211 / 703		
Iot [Pp/Tp]	419			382			295			457		
Avs E [Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp):	5.00
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....		4.14
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....		2.86
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....		0.64
+ Oceanic (0.6<CI<1.1)		
Rainfall Index of Lang (1925) [R=P/T] .....		46.87
+ Semiarid (60>R>40)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....		33.15
+ Humid (60>Ia>30)		
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....		189.44
+ Humid (Q>90)		
I of Dantin & Revenga (1940) [DR=100*T/P] .....		2.13
+ Semiarid (3>DR>2)		
Aridity Index of UNEP [I=P/PE] .....		0.88
+ Humid (I>0.65)		
Potencial Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P].....		22.69
+ Very low (K<60)		

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate ..... A. Warm and temperate warm  
 + Region ..... 6. Termoaxeric (Axeric warm)  
 + Thermic type: 1. Megathermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.33	0.26	0.48	0.36	0.21	0.33	0.21	0.20	0.26	0.41	0.57	0.62
T-E ratio	11.88	12.00	11.88	11.25	10.62	10.13	9.75	9.88	10.13	10.63	10.88	11.50
Precipitation-effectiveness: 42.35						Temperature-efficiency .....: 130.51						
Moisture Index [MI=100*(P-PE)/PE] .....												
+ C1. Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE] .....												
+ No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE] .....												
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												
+ Forth mesothermic (997<PE<1440)												

