Phytosociological Research Center

www.globalbioclimatics.org

Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

SALVADOR (BRAZIL) Altitude: 6 m.

Latitude: 12°55'S Longitude: 38°20'W
Temperature observation period.: 1969-1994 (26)
Rainfall observation period....: 1974-1994 (21)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPi
Jan.	26.67	30.00	23.33	34.44	20.00	66.0	150.55
Feb.	26.67	30.00	23.33	37.78	11.11	134.6	134.12
Mar.	26.67	30.00	23.33	37.78	17.22	154.9	143.71
Apr.	26.11	28.89	23.33	34.44	20.00	284.5	126.05
May.	25.00	27.78	22.22	36.11	17.78	274.3	110.28
Jun.	24.17	26.67	21.67	32.22	10.00	238.8	94.64
Jul.	23.34	26.11	20.56	29.44	12.22	182.9	86.96
Aug.	23.34	26.11	20.56	32.22	12.22	121.9	90.51
Sep.	24.17	27.22	21.11	32.22	12.22	83.8	99.62
Oct.	25.00	28.33	21.67	37.22	15.00	101.6	119.20
Nov.	25.56	28.89	22.22	36.11	12.78	114.3	127.07
Dec.	25.84	28.89	22.78	33.33	18.89	142.2	137.95
Year	25.21	28.24	22.18	34.44	14.95	1900	1420.7

BIOCLIMATIC INDICES AND DIAGNOSIS

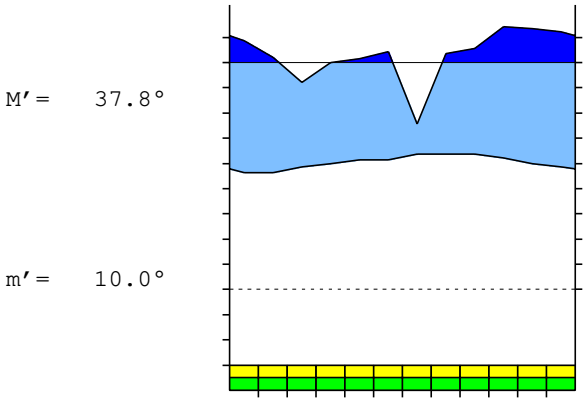
Thermicity index.....(It): 719
Compensated thermicity index.....(Itc): 719
Simple continentality index.....(Ic): 3.3
Diurnality index.....(Id): 6.7
Annual ombrothermic index.....(Io): 6.28
Monthly dry ombrothermic index.....(Iod1): 3.47
Bimonthly dry ombrothermic index.....(Iod2): 3.77
Threemonthly dry ombrothermic index.....(Iod3): 4.01
Fourmonthly dry ombrothermic index.....(Iod4): 4.30
Annual ombro-evaporation index.....(Ioe): 0.89
Annual positive temperature.....(Tp): 3025
Annual negative temperature.....(Tn): 0
Dry station temperature.....(Td): 747
Positive precipitation.....(Pp): 1900

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

Latitudinal Belt...: Eutropical
Continentality.....: Hyperoceanic - Low Ultrahyperoceanic
Bioclimate(Variant): TROPICAL PLUVIAL (SUBHYGROPHYTIC)
Bioclimatic Belt...: UPPER INFRATROPICAL LOW HUMID

SALVADOR (BRAZIL) 6 m

P= 1900 12° 55'S 38° 20'W 26/21 y.
T= 25.2° Ic= 3.3 Tp= 3025 Tn= 0
m= 20.6° M= 26.1° Itc= 719 Io= 6.3



TROPICAL PLUVIAL (SUBHYGROPHYTIC)
UPPER INFRATROPICAL LOW HUMID

WATER INDEX CARD SALVADOR (BRAZIL)
Altitude: 6 m. Latitude: 12° 55'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	23.3	87	183	0	100	87	0	96	109	1.1
Aug.	23.3	91	122	0	100	91	0	31	70	0.3
Sep.	24.2	100	84	-16	84	100	0	0	35	-0.1
Oct.	25.0	119	102	-18	67	119	0	0	18	-0.1
Nov.	25.6	127	114	-13	54	127	0	0	9	-0.1
Dec.	25.8	138	142	4	58	138	0	0	4	0.0
Jan.	26.7	151	66	-58	0	124	26	0	2	-0.5
Feb.	26.7	134	135	0	0	134	0	0	1	0.0
Mar.	26.7	144	155	11	12	144	0	0	1	0.0
Apr.	26.1	126	285	88	100	126	0	70	35	1.2
May.	25.0	110	274	0	100	110	0	164	100	1.4
Jun.	24.2	95	239	0	100	95	0	144	122	1.5
Year	25.2	1421	1900	*	*	1394	26	506	506	*

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

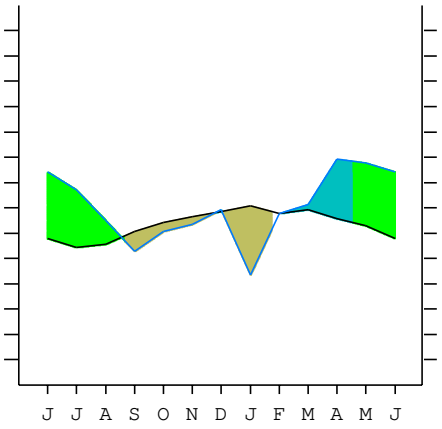
SALVADOR (BRAZIL)

12°55'S 38°20'W 6 m 26/21 y.

T= 25.2 Ic= 3.3
m= 20.6 Tp= 3025
M= 26.1 Tn= 0
M'= 37.8 Itc= 719
m'= 10.0 Io= 6.3
P= 1900 mm
PE= 1421 mm

TROPICAL PLUVIAL (SUBHYGROPHYTIC)
UPPER INFRATROPICAL
LOW HUMID

Imbibing	30 Jan.
Saturation	17 Apr.
Reserve Use	2 Dec.
Deficit	21 Jan.



SALVADOR (BRAZIL)

Latitude: 12°55'S Longitude: 38°20'W Altitude: 6 m

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 [A5.1a.7b]
- + Macrobioclimate .....: A. TROPICAL
- + Bioclimate .....: 5. PLUVIAL
- + Bioclimatic variant .:
- + Thermic type.....: 1. INFRATROPICAL
- + Thermic subtype.....: a. UPPER
- + Ombrothermic type ...: 7. HUMID
- + Ombrothermic subtype : b. LOW

Bioclimatic Classification .....: Trhd.Itr.Hum

SALVADOR (BRAZIL)

Latitude: 12°55'S Longitude: 38°20'W Altitude: 6 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 897
Coldest semester of the year.....(Psw): 1003
Warmest four months period of the year.....(Pcm1): 640
Following warmest four months period.....(Pcm2): 818
Positive precipitation dryest 3 months.....(Ppd): 300
Positive precipitation dryest 2 months.....(Ppd2): 185
Positive precipitation dryest 1 month.....(Ppd1): 66
Positive precipitation warmest 3 months.....(Pps): 356
Positive precipitation warmest 2 months.....(Pps2): 201
Positive precipitation warmest 1 month.....(Pps1): 66
Positive precipitation coldest 3 months.....(Ppw): 544
Positive precipitation coldest 2 months.....(Ppw2): 305
Positive precipitation coldest 1 month.....(Ppw1): 183

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	543	299	342	713

Tropical rainfall rhythms: 2 > 3 > 1 > 4

SALVADOR (BRAZIL)

Latitude: 12°55'S Longitude: 38°20'W Altitude: 6 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 26.7
Average coldest month [T].....(Tmin): 23.3
Maximum temp. warmest month [M].....(Tmmax): 30.0
Minimum temp. coldest month [m].....(Tmmin): 20.6
Absolute Max.temp. warmest month [M'].....(Tamax): 37.8
Absolute Min.temp. coldest month [m'].....(Tamin): 10.0
First warmest contrasted month [M].....(Tcmax): 30.0 (1)
First coldest contrasted month [m].....(Tcmin): 23.3 (1)
Dry station temperature.....(Td): 747
Positive temperature dryest 3 months.....(Tpd): 747
Positive temperature dryest 2 months.....(Tpd2): 492
Positive temperature dryest 1 month.....(Tpd1): 267
Positive temperature warmest 3 months.....(Tps): 800
Positive temperature warmest 2 months.....(Tps2): 533
Positive temperature warmest 1 month.....(Tps1): 267
Positive temperature coldest 3 months.....(Tpw): 709
Positive temperature coldest 2 months.....(Tpw2): 467
Positive temperature coldest 1 month.....(Tpw1): 233

SALVADOR (BRAZIL)

Latitude: 12°55'S Longitude: 38°20'W Altitude: 6 m

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

SALVADOR (BRAZIL)

Latitude: 12°55'S Longitude: 38°20'W Altitude: 6 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.75
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)	1422	660	1346	1549	2845	2743	2388	1829	1219	838	1016	1143
Tp	258	267	267	267	261	250	242	233	233	242	250	256
Io (Iom)	5.50	2.47	5.05	5.81	10.9	11.0	9.88	7.84	5.22	3.47	4.06	4.47
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	3428 / 792			7137 / 778			5436 / 709			2997 / 747		
Io (Iot)	4.329			9.176			7.673			4.010		
Semesters	December-May						June-November					
Pp(x10)/Tp	10565 / 1570						8433 / 1456					
Io (Iosm)	6.731						5.793					

SALVADOR (BRAZIL)

Latitude: 12°55'S Longitude: 38°20'W Altitude: 6 m

Aridity Value Index (AVI)

[10xPP/TP=IO]: 18998/3025=6.28 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1422	660	1346	1549	2845	2743	2388	1829	1219	838	1016	1143
Tp [T*10]	258	267	267	267	261	250	242	233	233	242	250	256
Iom [Pp/Tp]	550	247	505	581	$$	$$	988	784	522	347	406	447
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	3428 / 792			7137 / 778			5436 / 709			2997 / 747		
Iot [Pp/Tp]	433			918			767			401		
Avs E[Avm<200]	***			***			***			***		

SALVADOR (BRAZIL)

Latitude: 12°55'S Longitude: 38°20'W Altitude: 6 m

BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 3.33
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....: 4.93
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....: 0.54
  + Hyperoceanic (-20<CI<20)
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 0.63
  + Oceanic (0.6<CI<1.1)
Rainfall Index of Lang (1925) [R=P/T] .....: 75.35
  + Temperate warm (100>R>60)
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 53.95
  + Humid (60>Ia>30)
I of Emberger (1930) [Q=100*P/(Tmmax²-Tmmin²)] .....: 398.04
  + Humid (Q>90)
I of Dantin & Revenga (1940) [DR=100*T/P] .....: 1.33
  + Humid (2>DR>0)
Aridity Index of UNEP [I=P/PE] .....: 1.34
  + Humid (I>0.65)
Potencial Erosion I of Fournier (1960) [K=Pi²/P].....: 42.60
  + Very low (K<60)

SALVADOR (BRAZIL)

Latitude: 12°55'S Longitude: 38°20'W Altitude: 6 m

BIOCLIMATIC INDICES II

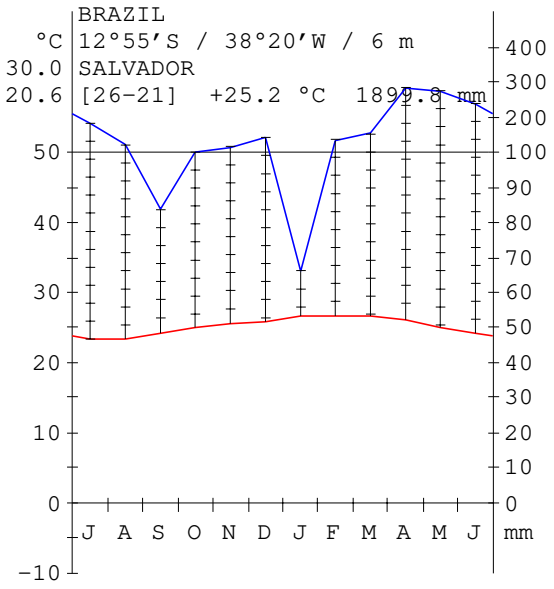
Bioclimatic classification of Gaussen & Bagnouls (1957)
  + Climate ....: A. Warm and temperate warm
  + Region .....: 6. Termoaxeric (Axeric warm)
  + Thermic type: 1. Megathermic

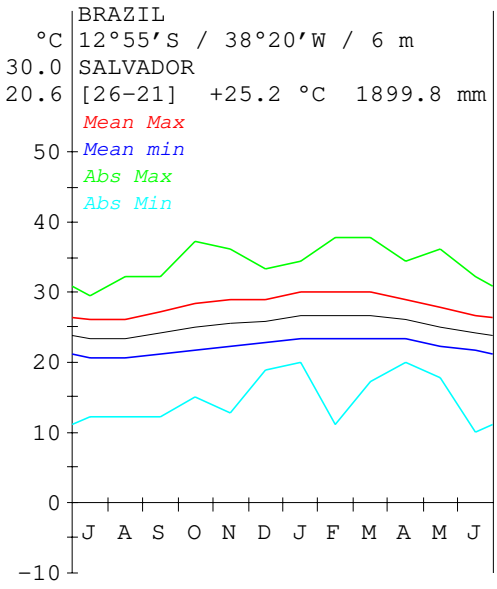
Thornthwaite (1948)

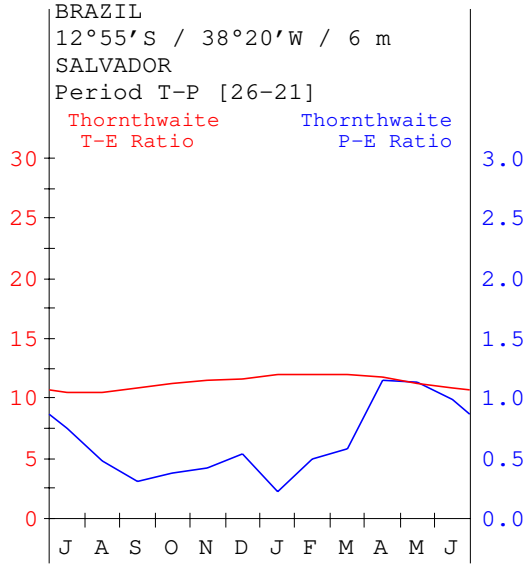
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.22	0.49	0.58	1.15	1.13	0.99	0.75	0.48	0.31	0.38	0.42	0.54
T-E ratio	12.00	12.00	12.00	11.75	11.25	10.88	10.50	10.50	10.88	11.25	11.50	11.63

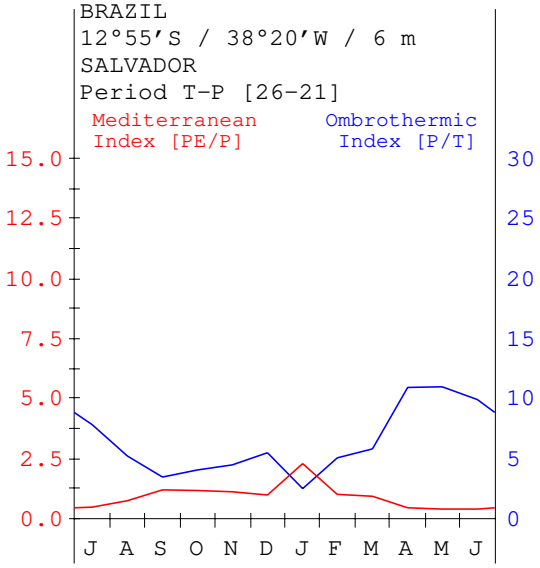
Precipitation-effectiveness: 74.38 Temperature-efficiency ....: 136.14

Moisture Index [MI=100*(P-PE)/PE] .....: 33.73
  + B1.Humid low-humid (20<MI<40)
Index of dryness [DI=100*d/PE] .....: 1.86
  + No deficit (0<DI<16.7)
Index of humidity [HI=100*s/PE] .....: 35.59
  + Strong surplus (20<HI)
Potential Evapotranspiration PE .....: 1420.65
  + Forth mesothermic (997<PE<1440)




BRAZIL
°C 12°55'S / 38°20'W / 6 m
30.0 SALVADOR
20.6 [26-21] +25.2 °C 1899.8 mm
Mean Max
Mean min
Abs Max
Abs Min
50
40
30
20
10
0
-10
J A S O N D J F M A M J


BRAZIL
12°55'S / 38°20'W / 6 m
SALVADOR
Period T-P [26-21]
Thornthwaite T-E Ratio
Thornthwaite P-E Ratio
30
25
20
15
10
5
0
3.0
2.5
2.0
1.5
1.0
0.5
0.0
J A S O N D J F M A M J


BRAZIL
12°55'S / 38°20'W / 6 m
SALVADOR
Period T-P [26-21]
Mediterranean Index [PE/P]
Ombrothermic Index [P/T]
15.0
12.5
10.0
7.5
5.0
2.5
0.0
30
25
20
15
10
5
0
J A S O N D J F M A M J