Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

STA. MARIA-ARACAJU (BRAZIL) Altitude: 15 m.

Latitude: 10°59'S Longitude: 37°4'W
Temperature observation period.: 1979-1994 (16)
Rainfall observation period....: 1977-1994 (18)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPi
Jan.	26.39	29.44	23.33	36.11	18.89	37.8	144.89
Feb.	26.95	30.00	23.89	38.89	13.89	44.7	134.93
Mar.	26.95	30.00	23.89	37.22	15.00	88.1	146.06
Apr.	26.39	29.44	23.33	36.11	17.78	153.2	131.59
May.	25.28	28.33	22.22	31.11	8.89	260.1	114.89
Jun.	24.45	27.22	21.67	32.78	12.22	242.1	98.48
Jul.	23.89	26.67	21.11	30.00	8.89	156.7	93.87
Aug.	23.62	26.67	20.56	33.89	10.00	127.0	93.06
Sep.	24.45	27.22	21.67	32.22	12.78	87.1	102.58
Oct.	25.56	28.33	22.78	37.78	16.11	61.7	126.42
Nov.	25.84	28.89	22.78	32.22	12.22	51.6	129.94
Dec.	26.11	29.44	22.78	33.89	17.78	39.1	141.02
Year	25.49	28.47	22.50	34.35	13.70	1349	1457.7

BIOCLIMATIC INDICES AND DIAGNOSIS

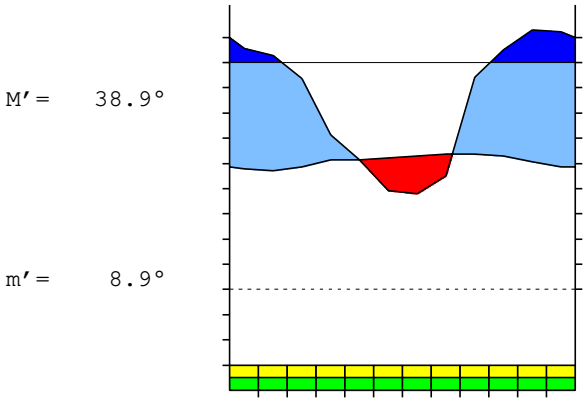
Thermicity index.....(It): 727
Compensated thermicity index.....(Itc): 727
Simple continentality index.....(Ic): 3.3
Diurnality index.....(Id): 6.7
Annual ombrothermic index.....(Io): 4.41
Monthly dry ombrothermic index.....(Iod1): 1.43
Bimonthly dry ombrothermic index.....(Iod2): 1.46
Threemonthly dry ombrothermic index.....(Iod3): 1.53
Fourmonthly dry ombrothermic index.....(Iod4): 1.64
Annual ombro-evaporation index.....(Ioe): 0.44
Annual positive temperature.....(Tp): 3059
Annual negative temperature.....(Tn): 0
Dry station temperature.....(Td): 795
Positive precipitation.....(Pp): 1349

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	5	3	4	0	0

Latitudinal Belt...: Eutropical
Continentality.....: Hyperoceanic - Low Ultrahyperoceanic
Bioclimate(Variant): TROPICAL PLUVISEASONAL (PLUVISEROTIN,SUBMESOPHYTIC)
Bioclimatic Belt...: UPPER INFRATROPICAL LOW SUBHUMID

STA. MARIA-ARACAJU (BRAZIL) 15 m

P= 1349 10° 59'S 37° 4'W 16/18 y.
T= 25.5° Ic= 3.3 Tp= 3059 Tn= 0
m= 20.6° M= 26.7° Itc= 727 Io= 4.4



TROPICAL PLUVISEASONAL (PLUVISEROTIN)
UPPER INFRATROPICAL LOW SUBHUMID

WATER INDEX CARD STA. MARIA-ARACAJU (BRAZIL)
Altitude: 15 m. Latitude: 10° 59'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	23.9	94	157	0	100	94	0	63	76	0.6
Aug.	23.6	93	127	0	100	93	0	34	55	0.3
Sep.	24.5	103	87	-15	85	103	0	0	27	-0.1
Oct.	25.6	126	62	-65	20	126	0	0	14	-0.5
Nov.	25.8	130	52	-20	0	71	59	0	7	-0.6
Dec.	26.1	141	39	0	0	39	102	0	3	-0.7
Jan.	26.4	145	38	0	0	38	107	0	2	-0.7
Feb.	27.0	135	45	0	0	45	90	0	1	-0.6
Mar.	27.0	146	88	0	0	88	58	0	0	-0.3
Apr.	26.4	132	153	22	22	132	0	0	0	0.1
May.	25.3	115	260	78	100	115	0	67	34	1.2
Jun.	24.5	98	242	0	100	98	0	144	89	1.4
Year	25.5	1458	1349	*	*	1042	416	307	307	*

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

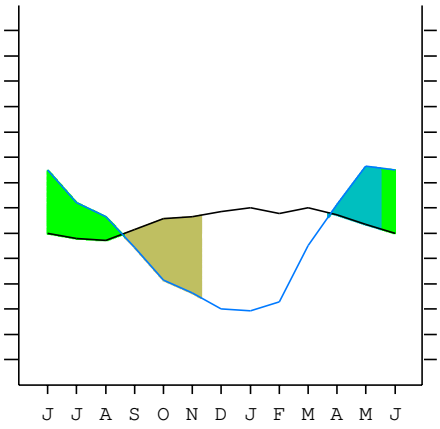
STA. MARIA-ARACAJU (BRAZIL)

10°59'S 37°4'W 15 m 16/18 y.

T= 25.5 Ic= 3.3
m= 20.6 Tp= 3059
M= 26.7 Tn= 0
M'= 38.9 Itc= 727
m'= 8.9 Io= 4.4
P= 1349 mm
PE= 1458 mm

TROPICAL PLUVISEASONAL (PLUVISEROTIN)
UPPER INFRATROPICAL
LOW SUBHUMID

Imbibing	22 Mar.
Saturation	17 May.
Reserve Use	21 Aug.
Deficit	8 Nov.



STA. MARIA-ARACAJU (BRAZIL)

Latitude: 10°59'S Longitude: 37°4'W Altitude: 15 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 [A4e.1a.6b]
- + Macrobioclimate .....: A. TROPICAL
- + Bioclimate .....: 4. PLUVISEASONAL
- + Bioclimatic variant .: e. PLUVISEROTIN,SUBMESOPHYTIC
- + Thermic type.....: 1. INFRATROPICAL
- + Thermic subtype.....: a. UPPER
- + Ombrothermic type ...: 6. SUBHUMID
- + Ombrothermic subtype : b. LOW

Bioclimatic Classification .....: Trde(Pse).Itr.Shu

STA. MARIA-ARACAJU (BRAZIL)

Latitude: 10°59'S Longitude: 37°4'W Altitude: 15 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 415
Coldest semester of the year.....(Psw): 935
Warmest four months period of the year.....(Pcm1): 324
Following warmest four months period.....(Pcm2): 786
Positive precipitation dryest 3 months.....(Ppd): 122
Positive precipitation dryest 2 months.....(Ppd2): 77
Positive precipitation dryest 1 month.....(Ppd1): 38
Positive precipitation warmest 3 months.....(Pps): 171
Positive precipitation warmest 2 months.....(Pps2): 133
Positive precipitation warmest 1 month.....(Pps1): 45
Positive precipitation coldest 3 months.....(Ppw): 526
Positive precipitation coldest 2 months.....(Ppw2): 284
Positive precipitation coldest 1 month.....(Ppw1): 127

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	525	200	121	501

Tropical rainfall rhythms: 3 > 2 > 4 > 1

STA. MARIA-ARACAJU (BRAZIL)

Latitude: 10°59'S Longitude: 37°4'W Altitude: 15 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 27.0
Average coldest month [T].....(Tmin): 23.6
Maximum temp. warmest month [M].....(Tmmax): 30.0
Minimum temp. coldest month [m].....(Tmmin): 20.6
Absolute Max.temp. warmest month [M'].....(Tamax): 38.9
Absolute Min.temp. coldest month [m'].....(Tamin): 8.9
First warmest contrasted month [M].....(Tcmax): 29.4 (12)
First coldest contrasted month [m].....(Tcmin): 22.8 (12)
Dry station temperature.....(Td): 795
Positive temperature dryest 3 months.....(Tpd): 795
Positive temperature dryest 2 months.....(Tpd2): 525
Positive temperature dryest 1 month.....(Tpd1): 264
Positive temperature warmest 3 months.....(Tps): 803
Positive temperature warmest 2 months.....(Tps2): 539
Positive temperature warmest 1 month.....(Tps1): 270
Positive temperature coldest 3 months.....(Tpw): 720
Positive temperature coldest 2 months.....(Tpw2): 475
Positive temperature coldest 1 month.....(Tpw1): 236

STA. MARIA-ARACAJU (BRAZIL)

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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

STA. MARIA-ARACAJU (BRAZIL)

Latitude: 10°59'S Longitude: 37°4'W Altitude: 15 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.08
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)	391	378	447	881	1532	2601	2421	1567	1270	871	617	516
Tp	261	264	270	270	264	253	245	239	236	245	256	258
Io (Iom)	1.50	1.43	1.66	3.27	5.81	10.3	9.90	6.56	5.38	3.56	2.41	2.00
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	1216 / 795			5014 / 786			5258 / 720			2004 / 759		
Io (Iot)	1.531			6.378			7.307			2.642		
Semesters	December-May						June-November					
Pp(x10)/Tp	6230 / 1581						7262 / 1478					
Io (Iosm)	3.941						4.913					

STA. MARIA-ARACAJU (BRAZIL)

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 13492/3059=4.41 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	391	378	447	881	1532	2601	2421	1567	1270	871	617	516
Tp [T*10]	261	264	270	270	264	253	245	239	236	245	256	258
Iom [Pp/Tp]	150	143	166	327	581	$$	990	656	538	356	241	200
Avm [200-Iom]	50	57	34	***	***	***	***	***	***	***	***	0
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	1216 / 795			5014 / 786			5258 / 720			2004 / 759		
Iot [Pp/Tp]	153			638			731			264		
Avs E[Avm<200]	141			***			***			***		

Weak lower semiarid [2]	Strong upper semiarid [2]

STA. MARIA-ARACAJU (BRAZIL)

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 3.33
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....: 9.31
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....: 1.81
  + Hyperoceanic (-20<CI<20)
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 0.71
  + Oceanic (0.6<CI<1.1)
Rainfall Index of Lang (1925) [R=P/T] .....: 52.93
  + Semiarid (60>R>40)
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 38.02
  + Humid (60>Ia>30)
I of Emberger (1930) [Q=100*P/(Tmmax²-Tmmin²)] .....: 282.68
  + Humid (Q>90)
I of Dantin & Revenga (1940) [DR=100*T/P] .....: 1.89
  + Humid (2>DR>0)
Aridity Index of UNEP [I=P/PE] .....: 0.93
  + Humid (I>0.65)
Potencial Erosion I of Fournier (1960) [K=Pi²/P].....: 50.14
  + Very low (K<60)

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BIOCLIMATIC INDICES II

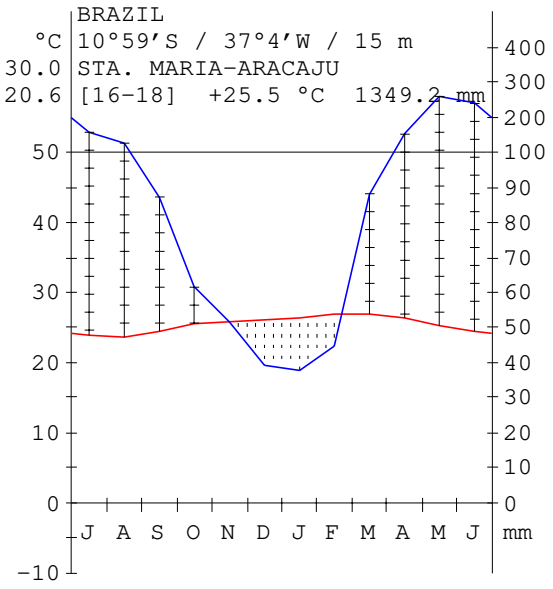
Bioclimatic classification of Gaussen & Bagnouls (1957)
  + Climate ....: A. Warm and temperate warm
  + Region .....: 3. Termoxeroteric (Mediterranean warm)
  + Thermic type: 1. Megathermic

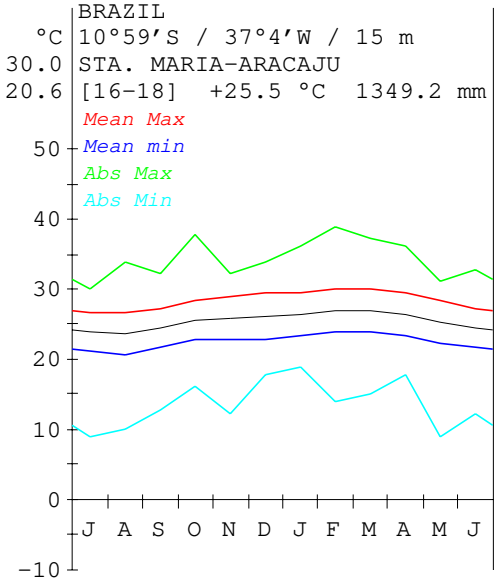
Thornthwaite (1948)

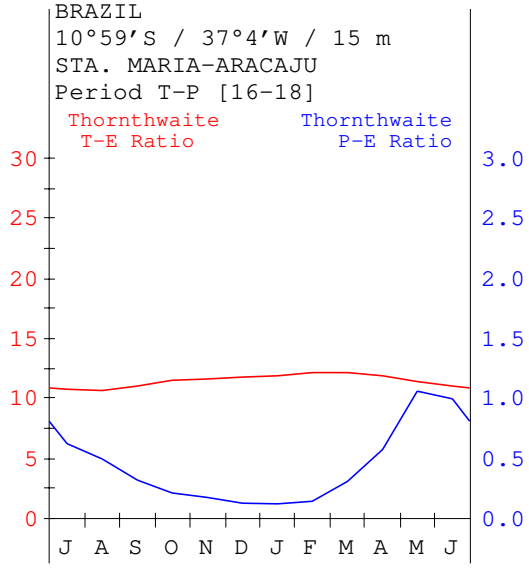
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.12	0.14	0.31	0.57	1.06	1.00	0.62	0.50	0.32	0.21	0.17	0.13
T-E ratio	11.88	12.13	12.13	11.88	11.38	11.00	10.75	10.63	11.00	11.50	11.63	11.75

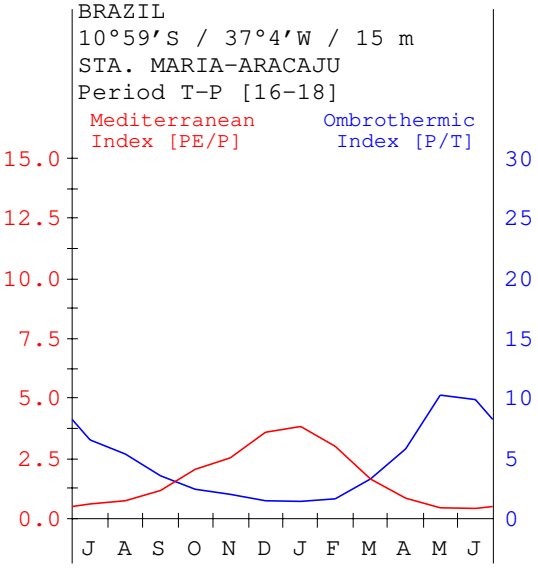
Precipitation-effectiveness: 51.59 Temperature-efficiency ....: 137.65

Moisture Index [MI=100*(P-PE)/PE] .....: -7.44
  + C1.Subhumid dry (-33.3<MI<0)
Index of dryness [DI=100*d/PE] .....: 28.52
  + Moderate deficit (16.7<DI<33.3)
Index of humidity [HI=100*s/PE] .....: 21.07
  + Strong surplus (20<HI)
Potential Evapotranspiration PE .....: 1457.72
  + Megathermic (PE>1440)




BRAZIL
°C
10°59'S / 37°4'W / 15 m
30.0
STA. MARIA-ARACAJU
20.6
[16-18] +25.5 °C 1349.2 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
10°59'S / 37°4'W / 15 m
STA. MARIA-ARACAJU
Period T-P [16-18]
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
10°59'S / 37°4'W / 15 m
STA. MARIA-ARACAJU
Period T-P [16-18]
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