

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

PAULO AFONSO (BRAZIL)

Altitude: 253 m.

Latitude: 9°24'S Longitude: 38°13'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.	27.40	34.10	22.10	39.30	17.00	61.0	154.12
Feb.	27.20	33.30	22.20	39.60	17.90	55.0	135.46
Mar.	27.10	33.20	22.40	39.00	19.30	93.0	147.32
Apr.	25.50	30.90	22.10	37.20	13.70	81.0	116.70
May.	24.20	29.20	21.10	36.40	13.00	55.0	99.40
Jun.	23.60	28.60	19.90	37.20	13.20	61.0	87.55
Jul.	23.00	28.10	19.00	34.60	10.10	53.0	82.59
Aug.	23.50	29.50	19.00	34.40	14.00	25.0	90.72
Sep.	24.90	31.30	20.00	37.00	13.10	19.0	108.59
Oct.	26.40	33.50	20.90	38.50	15.10	15.0	140.83
Nov.	27.70	34.60	22.00	39.40	16.00	18.0	152.36
Dec.	27.30	34.30	22.10	39.20	10.10	47.0	154.68
Year	25.65	31.72	21.07	37.65	14.38	583	1470.3

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	728
Compensated thermicity index.....(Itc):	728
Simple continentality index.....(Ic):	4.7
Diurnality index.....(Id):	12.6
Annual ombrothermic index.....(Io):	1.89
Monthly dry ombrothermic index.....(Iod1):	0.57
Bimonthly dry ombrothermic index.....(Iod2):	0.61
Three monthly dry ombrothermic index.....(Iod3):	0.66
Four monthly dry ombrothermic index.....(Iod4):	0.75
Annual ombro-evaporation index.....(Ioe):	0.98
Annual positive temperature.....(Tp):	3078
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	790
Positive precipitation.....(Pp):	583

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

Latitudinal Belt...: Eutropical

Continentality.....: Hyperoceanic - High Euhyperoceanic

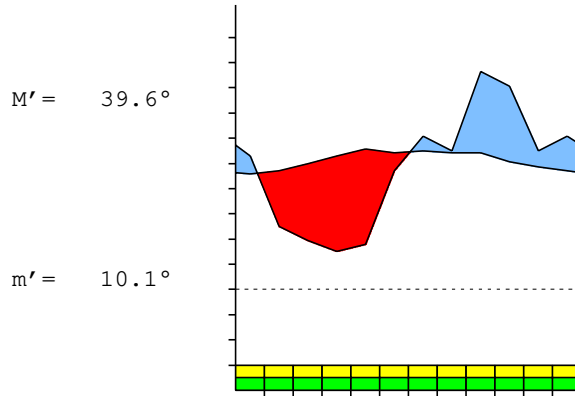
Bioclimate(Variant): TROPICAL XERIC (PLUVISEROTIN, SEMIARID)

Bioclimatic Belt...: UPPER INFRATROPICAL UPPER SEMIARID

PAULO AFONSO (BRAZIL)

253 m

P= 583 9° 24'S 38° 13'W 30/30 y.
 T= 25.6° Ic= 4.7 Tp= 3078 Tn= 0
 m= 19.0° M= 28.1° Itc= 728 Io= 1.9



TROPICAL XERIC (PLUVISEROTIN)
 UPPER INFRATROPICAL UPPER SEMIARID

WATER INDEX CARD PAULO AFONSO (BRAZIL)
 Altitude: 253 m. Latitude: 9° 24'S

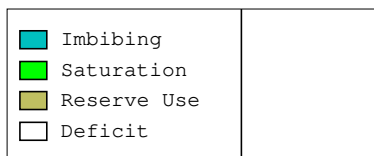
(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	23.0	83	53	0	0	53	30	0	0	-0.3
Aug.	23.5	91	25	0	0	25	66	0	0	-0.7
Sep.	24.9	109	19	0	0	19	90	0	0	-0.8
Oct.	26.4	141	15	0	0	15	126	0	0	-0.8
Nov.	27.7	152	18	0	0	18	134	0	0	-0.8
Dec.	27.3	155	47	0	0	47	108	0	0	-0.6
Jan.	27.4	154	61	0	0	61	93	0	0	-0.6
Feb.	27.2	135	55	0	0	55	80	0	0	-0.5
Mar.	27.1	147	93	0	0	93	54	0	0	-0.3
Apr.	25.5	117	81	0	0	81	36	0	0	-0.3
May.	24.2	99	55	0	0	55	44	0	0	-0.4
Jun.	23.6	88	61	0	0	61	27	0	0	-0.3
Year	25.6	1470	583	*	*	583	887	0	0	*

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

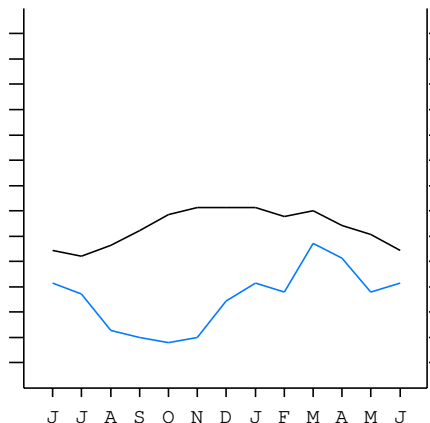
PAULO AFONSO (BRAZIL)

9°24'S 38°13'W 253 m 30/30 y.

T= 25.6 Ic= 4.7 TROPICAL XERIC (PLUVISEROTIN)
 m= 19.0 Tp= 3078 UPPER INFRATROPICAL
 M= 28.1 Tn= 0 UPPER SEMIARID
 M' = 39.6 Itc= 728
 m' = 10.1 Io= 1.9
 P= 583 mm ———
 PE= 1470 mm ———



All over the year,
 there is hydric deficit



PAULO AFONSO (BRAZIL)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental 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 [A3e.1a.4a]
+ Macrobioclimate: A. TROPICAL
+ Bioclimate: 3. XERIC
+ Bioclimatic variant .: e. PLUVISEROTIN, SEMIARID
+ Thermic type.....: 1. INFRATROPICAL
+ Thermic subtype.....: a. UPPER
+ Ombrothermic type ...: 4. SEMIARID
+ Ombrothermic subtype : a. UPPER
Bioclimatic Classification: Trxe(Pse).Itr.Sar

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 289
Coldest semester of the year.....(Psw): 294
Warmest four months period of the year.....(Pcm1): 181
Following warmest four months period.....(Pcm2): 290
Positive precipitation dryest 3 months.....(Ppd): 52
Positive precipitation dryest 2 months.....(Ppd2): 33
Positive precipitation dryest 1 month.....(Ppd1): 15
Positive precipitation warmest 3 months.....(Pps): 126
Positive precipitation warmest 2 months.....(Pps2): 65
Positive precipitation warmest 1 month.....(Pps1): 18
Positive precipitation coldest 3 months.....(Ppw): 139
Positive precipitation coldest 2 months.....(Ppw2): 78
Positive precipitation coldest 1 month.....(Ppw1): 53

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	139	52	163	229

Tropical rainfall rhythms: 2 > 1 > 3 > 4

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 27.7
Average coldest month [T].....(Tmin): 23.0
Maximum temp. warmest month [M].....(Tmmax): 34.6
Minimum temp. coldest month [m].....(Tmmin): 19.0
Absolute Max.temp. warmest month [M'].....(Tamax): 39.6
Absolute Min.temp. coldest month [m'].....(Tamin): 10.1
First warmest contrasted month [M].....(Tcmax): 33.5 (10)
First coldest contrasted month [m].....(Tcmin): 20.9 (10)
Dry station temperature.....(Td): 790
Positive temperature dryest 3 months.....(Tpd): 790
Positive temperature dryest 2 months.....(Tpd2): 541
Positive temperature dryest 1 month.....(Tpd1): 264
Positive temperature warmest 3 months.....(Tps): 824
Positive temperature warmest 2 months.....(Tps2): 550
Positive temperature warmest 1 month.....(Tps1): 277
Positive temperature coldest 3 months.....(Tpw): 701
Positive temperature coldest 2 months.....(Tpw2): 465
Positive temperature coldest 1 month.....(Tpw1): 230

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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): 2.52
 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)	470	610	550	930	810	550	610	530	250	190	150	180
Tp	273	274	272	271	255	242	236	230	235	249	264	277
Io (Iom)	1.72	2.23	2.02	3.43	3.18	2.27	2.58	2.30	1.06	0.76	0.57	0.65
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	1630 / 819			2290 / 768			1390 / 701			520 / 790		
Io (Iot)	1.990			2.982			1.983			0.658		
Semesters	December-May						June-November					
Pp(x10)/Tp	3920 / 1587						1910 / 1491					
Io (Iosm)	2.470						1.281					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5830/3078=1.89 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	470	610	550	930	810	550	610	530	250	190	150	180
Tp [T*10]	273	274	272	271	255	242	236	230	235	249	264	277
Iom [Pp/Tp]	172	223	202	343	318	227	258	230	106	76	57	65
Avm [200-Iom]	28	***	***	***	***	***	***	***	94	124	143	135
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	1630 / 819			2290 / 768			1390 / 701			520 / 790		
Iot [Pp/Tp]	199			298			198			66		
Avs E[Avm<200]	***			***			***			402		
Weak lower arid [3]							Strong upper arid [1]					
Strong lower semiarid [1]							Weak upper semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 4.70
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 28.52
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 10.05
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 1.14
 + Subcontinental (1.1<CI<1.7)
 Rainfall Index of Lang (1925) [R=P/T]: 22.73
 + Steppic (40>R>0)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 16.35
 + Semiarid -mediterranean- (20>Ia>15)
 I of Emberger (1930) [Q=100*P/(Tmmax²-Tmmmin²)]: 69.72
 + Subhumid (90>Q>50)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 4.40
 + Arid (6>DR>3)
 Aridity Index of UNEP [I=P/PE]: 0.40
 + Semiarid (0.5>Im>0.2)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 14.84
 + 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	0.20	0.18	0.32	0.29	0.19	0.22	0.19	0.08	0.06	0.04	0.05	0.15
T-E ratio	12.33	12.24	12.20	11.48	10.89	10.62	10.35	10.57	11.20	11.88	12.47	12.28
Precipitation-effectiveness: 19.87						Temperature-efficiency: 138.51						
Moisture Index [MI=100*(P-PE)/PE]: -60.35 + D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]: 60.35 + Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]: 0.00 + No surplus (0<HI<10)												
Potential Evapotranspiration PE: 1470.31 + Megathermic (PE>1440)												

