

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

ZE DOCA (BRAZIL)

Altitude: 45 m.

Latitude: 3°43'S Longitude: 45°32'W

Temperature observation period.: 1976-1990 (15)

Rainfall observation period....: 1976-1990 (15)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	26.00	31.50	22.50	36.20	19.30	276.0	130.40
Feb.	26.00	31.10	22.50	34.00	19.80	314.0	117.98
Mar.	25.80	31.50	22.60	34.00	19.90	333.0	125.51
Apr.	26.00	31.30	22.80	34.10	20.30	294.0	124.19
May.	26.30	31.40	22.60	34.20	20.10	205.0	133.48
Jun.	26.00	31.40	21.70	33.70	18.70	89.0	122.95
Jul.	26.00	31.80	21.60	34.00	18.00	52.0	127.92
Aug.	26.40	32.80	21.30	36.80	17.20	31.0	135.37
Sep.	26.90	33.70	21.80	36.20	18.30	24.0	138.70
Oct.	27.40	33.70	22.30	37.70	19.40	52.0	149.84
Nov.	27.40	33.80	22.60	37.00	19.60	50.0	146.99
Dec.	27.40	33.20	22.80	37.20	19.70	117.0	151.27
Year	26.47	32.27	22.26	35.42	19.19	1837	1604.6

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	806
Compensated thermicity index.....(Itc):	806
Simple continentality index.....(Ic):	1.6
Diurnality index.....(Id):	11.9
Annual ombrothermic index.....(Io):	5.78
Monthly dry ombrothermic index.....(Iod1):	0.89
Bimonthly dry ombrothermic index.....(Iod2):	1.03
Threemonthly dry ombrothermic index.....(Iod3):	1.35
Fourmonthly dry ombrothermic index.....(Iod4):	1.86
Annual ombro-evaporation index.....(Ioe):	1.14
Annual positive temperature.....(Tp):	3176
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	793
Positive precipitation.....(Pp):	1837

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	6	1	4	1	0

Latitudinal Belt...: Equatorial

Continentalite.....: Hyperoceanic - High Ultrahyperoceanic

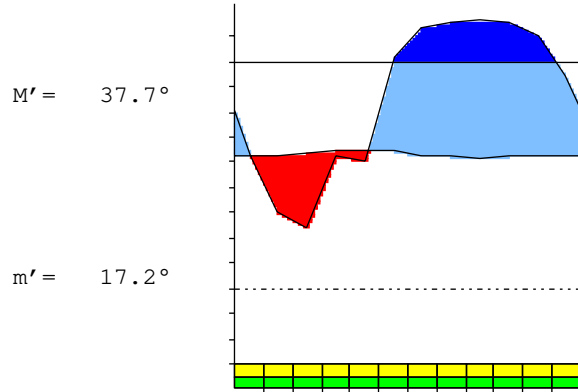
Bioclimate(Variant): TROPICAL PLUVISEASONAL (PLUVISEROTIN, SUBMESOPHYTIC)

Bioclimatic Belt...: UPPER INFRATROPICAL UPPER SUBHUMID

ZE DOCA (BRAZIL)

45 m

P= 1837 3° 43'S 45° 32'W 15/15 y.
 T= 26.5 ° Ic= 1.6 Tp= 3176 Tn= 0
 m= 22.6 ° M= 31.5 ° Itc= 806 Io= 5.8



TROPICAL PLUVISEASONAL (PLUVISEROTIN)
 UPPER INFRATROPICAL UPPER SUBHUMID

WATER INDEX CARD

ZE DOCA (BRAZIL)

Altitude: 45 m.

Latitude: 3° 43'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	26.0	128	52	-66	0	118	10	0	29	-0.5
Aug.	26.4	135	31	0	0	31	104	0	15	-0.7
Sep.	26.9	139	24	0	0	24	115	0	7	-0.8
Oct.	27.4	150	52	0	0	52	98	0	4	-0.6
Nov.	27.4	147	50	0	0	50	97	0	2	-0.6
Dec.	27.4	151	117	0	0	117	34	0	1	-0.2
Jan.	26.0	130	276	100	100	130	0	46	23	1.1
Feb.	26.0	118	314	0	100	118	0	196	110	1.6
Mar.	25.8	126	333	0	100	126	0	207	159	1.6
Apr.	26.0	124	294	0	100	124	0	170	164	1.3
May.	26.3	133	205	0	100	133	0	72	118	0.5
Jun.	26.0	123	89	-34	66	123	0	0	59	-0.2
Year	26.5	1605	1837	*	*	1147	458	690	690	*

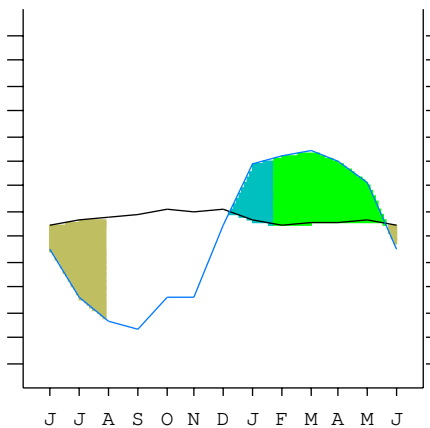
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

ZE DOCA (BRAZIL)

3°43'S 45°32'W 45 m 15/15 y.

T= 26.5 Ic= 1.6 TROPICAL PLUVISEASONAL (PLUVISEROTIN)
 m= 22.6 Tp= 3176 UPPER INFRATROPICAL
 M= 31.5 Tn= 0 UPPER SUBHUMID
 M' = 37.7 Itc= 806
 m' = 17.2 Io= 5.8
 P= 1837 mm ———
 PE= 1605 mm ———

Imbibing	6 Dec.
Saturation	21 Jan.
Reserve Use	21 May.
Deficit	27 Jul.



ZE DOCA (BRAZIL)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [A1a]
 + Type: A. Hyperoceanic
 + Subtype: 1. Ultrahyperoceanic
 + Variant: a. High

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

Bioclimatic types [A4e.1a.6a]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 4. PLUVISEASONAL
 + Bioclimatic variant .: PLUVISEROTIN, SUBMESOPHYTIC
 + Thermic type.....: 1. INFRATROPICAL
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : a. UPPER

Bioclimatic ClassificationTrps(Pse).Itr.Shu.Uho

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 326
 Coldest semester of the year.....(Psw): 1511
 Warmest four months period of the year.....(Pcm1): 243
 Following warmest four months period.....(Pcm2): 1217
 Positive precipitation dryest 3 months.....(Ppd): 107
 Positive precipitation dryest 2 months.....(Ppd2): 55
 Positive precipitation dryest 1 month.....(Ppd1): 24
 Positive precipitation warmest 3 months.....(Pps): 219
 Positive precipitation warmest 2 months.....(Pps2): 102
 Positive precipitation warmest 1 month.....(Pps1): 52
 Positive precipitation coldest 3 months.....(Ppw): 923
 Positive precipitation coldest 2 months.....(Ppw2): 647
 Positive precipitation coldest 1 month.....(Ppw1): 333

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	172	126	707	832

Tropical rainfall rhythms: 2 > 1 > 3 > 4

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 27.4
 Average coldest month [T].....(Tmin): 25.8
 Maximum temp. warmest month [M].....(Tmmax): 33.8
 Minimum temp. coldest month [m].....(Tmmin): 21.3
 Absolute Max.temp. warmest month [M'].....(Tamax): 37.7
 Absolute Min.temp. coldest month [m'].....(Tamin): 17.2
 First warmest contrasted month [M].....(Tcmax): 33.7 (9)
 First coldest contrasted month [m].....(Tcmin): 21.8 (9)
 Dry station temperature.....(Td): 793
 Positive temperature dryest 3 months.....(Tpd): 793
 Positive temperature dryest 2 months.....(Tpd2): 533
 Positive temperature dryest 1 month.....(Tpd1): 269
 Positive temperature warmest 3 months.....(Tps): 822
 Positive temperature warmest 2 months.....(Tps2): 548
 Positive temperature warmest 1 month.....(Tps1): 274
 Positive temperature coldest 3 months.....(Tpw): 778
 Positive temperature coldest 2 months.....(Tpw2): 518
 Positive temperature coldest 1 month.....(Tpw1): 258

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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): 0.87
 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)	1170	2760	3140	3330	2940	2050	890	520	310	240	520	500
Tp	274	260	260	258	260	263	260	260	264	269	274	274
Io (Iom)	4.27	10.6	12.1	12.9	11.3	7.79	3.42	2.00	1.17	0.89	1.90	1.82
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	7070 / 794			8320 / 781			1720 / 784			1260 / 817		
Io (Iot)	8.904			10.65			2.194			1.542		
Semesters	December-May						June-November					
Pp(x10)/Tp	15390 / 1575						2980 / 1601					
Io (Iosm)	9.771						1.861					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 18370/3176=5.78 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1170	2760	3140	3330	2940	2050	890	520	310	240	520	500
TP [T*10]	274	260	260	258	260	263	260	260	264	269	274	274
Iom [Pp/TP]	427	\$\$\$	\$\$\$	\$\$\$	\$\$\$	779	342	200	117	89	190	182
Avm [200-Iom]	***	***	***	***	***	***	***	0	83	111	10	18
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	7070 / 794			8320 / 781			1720 / 784			1260 / 817		
Iot [Pp/TP]	890			1065			219			154		
Avs E[Avm<200]	***			***			***			139		
Weak upper arid [1]						Strong lower semiarid [1]						
Strong upper semiarid [1]						Weak upper semiarid [2]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 1.60
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 21.56
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: -2.53
 + 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]: 69.41
 + Temperate warm (100>R>60)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 50.37
 + Humid (60>Ia>30)
 I of Emberger (1930) [Q=100*P/(Tmmax²-Tmmin²)]: 266.72
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 1.44
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 1.14
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 60.36
 + Low (60<K<90)

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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	1.11	1.29	1.38	1.20	0.80	0.32	0.17	0.10	0.07	0.17	0.16	0.42
T-E ratio	11.70	11.70	11.61	11.70	11.83	11.70	11.70	11.88	12.10	12.33	12.33	12.33
Precipitation-effectiveness: 71.78						Temperature-efficiency: 142.92						
Moisture Index [MI=100*(P-PE)/PE]: 14.48 + C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE]: 28.54 + Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE]: 43.03 + Strong surplus (20<HI)												
Potential Evapotranspiration PE: 1604.59 + Megathermic (PE>1440)												

