

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

SURUBIM (BRAZIL)

Altitude: 418 m.

Latitude: 7°50'S Longitude: 35°43'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.	24.00	31.40	20.50	36.00	16.00	33.0	109.66
Feb.	25.90	31.30	20.70	35.70	18.60	38.0	122.16
Mar.	25.70	30.60	20.70	35.40	17.80	90.0	130.70
Apr.	23.20	29.80	20.60	35.20	16.00	112.0	92.14
May.	23.40	28.60	22.90	31.20	14.50	92.0	96.33
Jun.	21.60	26.80	18.90	30.80	14.30	97.0	73.70
Jul.	21.80	26.10	18.40	30.60	14.40	113.0	78.77
Aug.	21.00	27.00	18.20	30.80	14.20	44.0	71.54
Sep.	22.70	27.90	19.40	31.50	14.20	30.0	87.49
Oct.	23.00	30.00	19.60	34.00	15.30	17.0	96.26
Nov.	24.50	31.00	20.10	35.60	16.20	13.0	113.01
Dec.	24.70	30.10	20.40	35.40	16.80	28.0	121.21
Year	23.46	29.22	20.03	33.52	15.69	707	1193.0

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	687
Compensated thermicity index.....(Itc):	687
Simple continentality index.....(Ic):	4.9
Diurnality index.....(Id):	10.9
Annual ombrothermic index.....(Io):	2.51
Monthly dry ombrothermic index.....(Iod1):	0.53
Bimonthly dry ombrothermic index.....(Iod2):	0.63
Three monthly dry ombrothermic index.....(Iod3):	0.80
Four monthly dry ombrothermic index.....(Iod4):	0.93
Annual ombro-evaporation index.....(Ioe):	0.80
Annual positive temperature.....(Tp):	2815
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	722
Positive precipitation.....(Pp):	707

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

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - High Euhyperoceanic

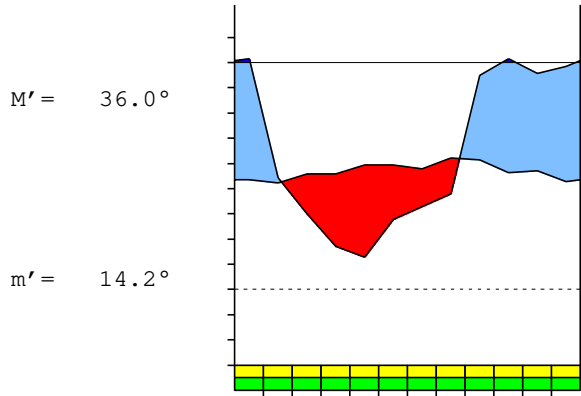
Bioclimate(Variant): TROPICAL XERIC (PLUVISEROTIN, DRY)

Bioclimatic Belt...: UPPER INFRATROPICAL LOW DRY

SURUBIM (BRAZIL)

418 m

P= 707 7° 50' S 35° 43' W 30/30 y.
 T= 23.5° Ic= 4.9 Tp= 2815 Tn= 0
 m= 18.2° M= 27.0° Itc= 687 Io= 2.5



TROPICAL XERIC (PLUVISEROTIN)
 UPPER INFRATROPICAL LOW DRY

WATER INDEX CARD
 Altitude: 418 m.

SURUBIM (BRAZIL)
 Latitude: 7° 50' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	21.8	79	113	34	73	79	0	0	0	0.4
Aug.	21.0	72	44	-28	46	72	0	0	0	-0.3
Sep.	22.7	87	30	-46	0	76	12	0	0	-0.6
Oct.	23.0	96	17	0	0	17	79	0	0	-0.8
Nov.	24.5	113	13	0	0	13	100	0	0	-0.8
Dec.	24.7	121	28	0	0	28	93	0	0	-0.7
Jan.	24.0	110	33	0	0	33	77	0	0	-0.6
Feb.	25.9	122	38	0	0	38	84	0	0	-0.6
Mar.	25.7	131	90	0	0	90	41	0	0	-0.3
Apr.	23.2	92	112	20	20	92	0	0	0	0.2
May.	23.4	96	92	-4	16	96	0	0	0	0.0
Jun.	21.6	74	97	23	39	74	0	0	0	0.3
Year	23.5	1193	707	*	*	707	486	0	0	*

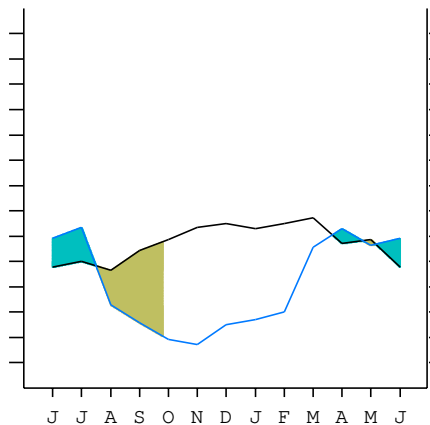
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

SURUBIM (BRAZIL)

7°50' S 35°43' W 418 m 30/30 y.

T= 23.5 Ic= 4.9 TROPICAL XERIC (PLUVISEROTIN)
 m= 18.2 Tp= 2815 UPPER INFRATROPICAL
 M= 27.0 Tn= 0 LOW DRY
 M' = 36.0 Itc= 687
 m' = 14.2 Io= 2.5
 P= 707 mm ———
 PE= 1193 mm ———

Imbibing	5 May.
Saturation	25 Apr.
Reserve Use	24 Sep.
Deficit	



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

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

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

Bioclimatic types [A3e.1a.5b]
 + Macroclimate: A. TROPICAL
 + Bioclimate: 3. XERIC
 + Bioclimatic variant .: e. PLUVISEROTIN, DRY
 + Thermic type.....: 1. INFRATROPICAL
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Trxe (Pse).Itr.Dry

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 314
 Coldest semester of the year.....(Psw): 393
 Warmest four months period of the year.....(Pcm1): 189
 Following warmest four months period.....(Pcm2): 414
 Positive precipitation dryest 3 months.....(Ppd): 58
 Positive precipitation dryest 2 months.....(Ppd2): 30
 Positive precipitation dryest 1 month.....(Ppd1): 13
 Positive precipitation warmest 3 months.....(Pps): 161
 Positive precipitation warmest 2 months.....(Pps2): 128
 Positive precipitation warmest 1 month.....(Pps1): 38
 Positive precipitation coldest 3 months.....(Ppw): 254
 Positive precipitation coldest 2 months.....(Ppw2): 157
 Positive precipitation coldest 1 month.....(Ppw1): 44

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	254	60	99	294

Tropical rainfall rhythms: 2 > 3 > 1 > 4

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 25.9
 Average coldest month [T].....(Tmin): 21.0
 Maximum temp. warmest month [M].....(Tmmax): 31.4
 Minimum temp. coldest month [m].....(Tmmin): 18.2
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.0
 Absolute Min.temp. coldest month [m'].....(Tamin): 14.2
 First warmest contrasted month [M].....(Tcmax): 31.4 (1)
 First coldest contrasted month [m].....(Tcmin): 20.5 (1)
 Dry station temperature.....(Td): 722
 Positive temperature dryest 3 months.....(Tpd): 722
 Positive temperature dryest 2 months.....(Tpd2): 475
 Positive temperature dryest 1 month.....(Tpd1): 245
 Positive temperature warmest 3 months.....(Tps): 756
 Positive temperature warmest 2 months.....(Tps2): 516
 Positive temperature warmest 1 month.....(Tps1): 259
 Positive temperature coldest 3 months.....(Tpw): 644
 Positive temperature coldest 2 months.....(Tpw2): 428
 Positive temperature coldest 1 month.....(Tpw1): 210

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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): 1.69
 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)	280	330	380	900	1120	920	970	1130	440	300	170	130
Tp	247	240	259	257	232	234	216	218	210	227	230	245
Io (Iom)	1.13	1.38	1.47	3.50	4.83	3.93	4.49	5.18	2.10	1.32	0.74	0.53
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	990 / 746			2940 / 723			2540 / 644			600 / 702		
Io (Iot)	1.327			4.066			3.944			0.855		
Semesters	December-May						June-November					
Pp(x10)/Tp	3930 / 1469						3140 / 1346					
Io (Iosm)	2.675						2.333					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 7070/2815=2.51 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	280	330	380	900	1120	920	970	1130	440	300	170	130
Tp [T*10]	247	240	259	257	232	234	216	218	210	227	230	245
Iom [Pp/Tp]	113	138	147	350	483	393	449	518	210	132	74	53
Avm [200-Iom]	87	63	53	***	***	***	***	***	***	68	126	147
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	990 / 746			2940 / 723			2540 / 644			600 / 702		
Iot [Pp/Tp]	133			407			394			85		
Avs E[Avm<200]	202			***			***			341		
Weak lower arid [1]							Strong upper arid [1]					
Weak upper arid [1]							Strong lower semiarid [1]					
Weak lower semiarid [4]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 4.90
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	40.72
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	13.20
+ Hyperoceanic (-20<CI<20)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.36
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	30.14
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	21.13
+ Subhumid (30>Ia>20)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	107.99
+ Humid (Q>90)	
I of Dantin & Revenga (1940) [DR=100*T/P]	3.32
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE]	0.59
+ Subhumid - dry (0.65>I>0.5)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	18.06
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 2. Macrothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.11	0.12	0.32	0.44	0.35	0.39	0.46	0.16	0.10	0.05	0.04	0.09
T-E ratio	10.80	11.65	11.57	10.44	10.53	9.72	9.81	9.45	10.22	10.35	11.02	11.12
Precipitation-effectiveness: 26.33						Temperature-efficiency						126.68
Moisture Index [MI=100*(P-PE)/PE]												-40.74
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]												40.73
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE												1192.97
+ Forth mesothermic (997<PE<1440)												

