

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

CIPO (BRAZIL)

Altitude: 145 m.

Latitude: 11°5'S Longitude: 38°31'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.	26.90	34.20	20.50	38.80	14.00	71.0	151.19
Feb.	26.80	33.80	20.60	39.40	15.60	70.0	133.77
Mar.	26.60	33.60	19.80	40.70	14.00	89.0	143.12
Apr.	25.70	32.10	18.10	37.80	14.00	145.0	121.32
May.	24.50	30.70	19.10	37.60	12.40	168.0	105.00
Jun.	23.10	28.90	17.60	36.00	11.60	137.0	83.34
Jul.	22.50	28.20	16.80	34.60	11.00	96.0	78.93
Aug.	22.50	28.80	16.50	36.00	11.20	72.0	81.32
Sep.	23.00	30.50	17.80	38.00	12.00	54.0	85.60
Oct.	25.20	32.60	19.20	39.20	13.60	33.0	121.91
Nov.	26.20	33.60	20.50	39.60	13.00	61.0	136.95
Dec.	26.20	34.20	20.30	38.90	13.00	73.0	143.47
Year	24.93	31.77	18.90	38.05	12.95	1069	1385.9

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	699
Compensated thermicity index.....(Itc):	699
Simple continentality index.....(Ic):	4.4
Diurnality index.....(Id):	14.0
Annual ombrothermic index.....(Io):	3.57
Monthly dry ombrothermic index.....(Iod1):	1.31
Bimonthly dry ombrothermic index.....(Iod2):	1.80
Threemonthly dry ombrothermic index.....(Iod3):	1.99
Fourmonthly dry ombrothermic index.....(Iod4):	2.27
Annual ombro-evaporation index.....(Ioe):	0.77
Annual positive temperature.....(Tp):	2992
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	744
Positive precipitation.....(Pp):	1069

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	4	7	1	0	0

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - High Euhyperoceanic

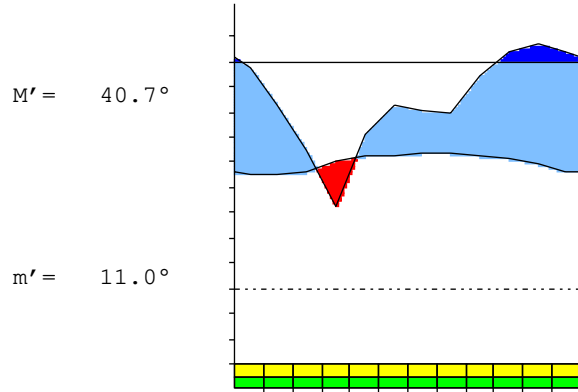
Bioclimate(Variant): TROPICAL XERIC (DRY)

Bioclimatic Belt...: UPPER INFRATROPICAL UPPER DRY

CIPO (BRAZIL)

145 m

P= 1069 11° 5'S 38° 31'W 30/30 y.
 T= 24.9 ° Ic= 4.4 Tp= 2992 Tn= 0
 m= 16.8 ° M= 28.2 ° Itc= 699 Io= 3.6



TROPICAL XERIC (DRY)
 UPPER INFRATROPICAL UPPER DRY

WATER INDEX CARD CIPO (BRAZIL)
 Altitude: 145 m. Latitude: 11° 5'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	22.5	79	96	0	100	79	0	17	19	0.2
Aug.	22.5	81	72	-9	91	81	0	0	9	-0.1
Sep.	23.0	86	54	-32	59	86	0	0	5	-0.3
Oct.	25.2	122	33	-59	0	92	30	0	2	-0.7
Nov.	26.2	137	61	0	0	61	76	0	1	-0.5
Dec.	26.2	143	73	0	0	73	70	0	1	-0.4
Jan.	26.9	151	71	0	0	71	80	0	0	-0.5
Feb.	26.8	134	70	0	0	70	64	0	0	-0.4
Mar.	26.6	143	89	0	0	89	54	0	0	-0.3
Apr.	25.7	121	145	24	24	121	0	0	0	0.1
May.	24.5	105	168	63	87	105	0	0	0	0.6
Jun.	23.1	83	137	13	100	83	0	40	20	0.6
Year	24.9	1386	1069	*	*	1012	374	57	57	*

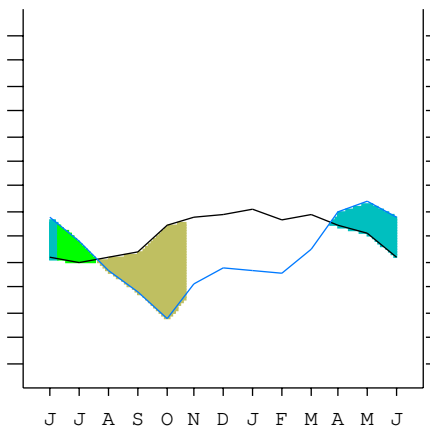
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

CIPO (BRAZIL)

11°5'S 38°31'W 145 m 30/30 y.

T= 24.9 Ic= 4.4 TROPICAL XERIC (DRY)
 m= 16.8 Tp= 2992 UPPER INFRATROPICAL
 M= 28.2 Tn= 0 UPPER DRY
 M' = 40.7 Itc= 699
 m' = 11.0 Io= 3.6
 P= 1069 mm ———
 PE= 1386 mm ———

Imbibing	21 Mar.
Saturation	8 Jun.
Reserve Use	20 Jul.
Deficit	20 Oct.



CIPO (BRAZIL)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality 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 [A3.1a.5a]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 3. XERIC
 + Bioclimatic variant .: DRY
 + Thermic type.....: 1. INFRATROPICAL
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : a. UPPER

Bioclimatic ClassificationTrxe (Dry) .Itr.Dry.Eho

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 509
 Coldest semester of the year.....(Psw): 560
 Warmest four months period of the year.....(Pcm1): 303
 Following warmest four months period.....(Pcm2): 546
 Positive precipitation dryest 3 months.....(Ppd): 148
 Positive precipitation dryest 2 months.....(Ppd2): 87
 Positive precipitation dryest 1 month.....(Ppd1): 33
 Positive precipitation warmest 3 months.....(Pps): 230
 Positive precipitation warmest 2 months.....(Pps2): 141
 Positive precipitation warmest 1 month.....(Pps1): 71
 Positive precipitation coldest 3 months.....(Ppw): 222
 Positive precipitation coldest 2 months.....(Ppw2): 168
 Positive precipitation coldest 1 month.....(Ppw1): 96

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	305	148	214	402

Tropical rainfall rhythms: 2 > 3 > 1 > 4

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 26.9
 Average coldest month [T].....(Tmin): 22.5
 Maximum temp. warmest month [M].....(Tmmax): 34.2
 Minimum temp. coldest month [m].....(Tmmin): 16.5
 Absolute Max.temp. warmest month [M'].....(Tamax): 40.7
 Absolute Min.temp. coldest month [m'].....(Tamin): 11.0
 First warmest contrasted month [M].....(Tcmax): 32.1 (4)
 First coldest contrasted month [m].....(Tcmin): 18.1 (4)
 Dry station temperature.....(Td): 744
 Positive temperature dryest 3 months.....(Tpd): 744
 Positive temperature dryest 2 months.....(Tpd2): 482
 Positive temperature dryest 1 month.....(Tpd1): 252
 Positive temperature warmest 3 months.....(Tps): 803
 Positive temperature warmest 2 months.....(Tps2): 537
 Positive temperature warmest 1 month.....(Tps1): 269
 Positive temperature coldest 3 months.....(Tpw): 680
 Positive temperature coldest 2 months.....(Tpw2): 450
 Positive temperature coldest 1 month.....(Tpw1): 225

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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): 1.30
 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)	730	710	700	890	1450	1680	1370	960	720	540	330	610
Tp	262	269	268	266	257	245	231	225	225	230	252	262
Io (Iom)	2.79	2.64	2.61	3.35	5.64	6.86	5.93	4.27	3.20	2.35	1.31	2.33
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	2140 / 799			4020 / 768			3050 / 681			1480 / 744		
Io (Iot)	2.678			5.234			4.479			1.989		
Semesters	December-May						June-November					
Pp(x10)/Tp	6160 / 1567						4530 / 1425					
Io (Iosm)	3.931						3.179					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 10690/2992=3.57 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	730	710	700	890	1450	1680	1370	960	720	540	330	610
Tp [T*10]	262	269	268	266	257	245	231	225	225	230	252	262
Iom [Pp/Tp]	279	264	261	335	564	686	593	427	320	235	131	233
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	69	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	2140 / 799			4020 / 768			3050 / 681			1480 / 744		
Iot [Pp/Tp]	268			523			448			199		
Avs E[Avm<200]	***			***			***			***		
Weak lower semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 4.40
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 18.51
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 6.79
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 0.94
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: 42.87
 + Semiarid (60>R>40)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 30.60
 + Humid (60>Ia>30)
 I of Emberger (1930) [Q=100*P/(Tmmax²-Tmmin²)]: 119.12
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 2.33
 + Semiarid (3>DR>2)
 Aridity Index of UNEP [I=P/PE]: 0.77
 + Humid (I>0.65)
 Potencial Erosion I of Fournier (1960) [K=Pi²/P].....: 26.40
 + 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	0.24	0.24	0.31	0.55	0.66	0.55	0.37	0.27	0.19	0.11	0.21	0.25
T-E ratio	12.10	12.06	11.97	11.57	11.02	10.40	10.13	10.13	10.35	11.34	11.79	11.79
Precipitation-effectiveness:	39.61					Temperature-efficiency: 134.64						
Moisture Index [MI=100*(P-PE)/PE]	-22.87											
+ C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE]	27.01											
+ Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE]	4.14											
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE	1385.90											
+ Forth mesothermic (997<PE<1440)												

