

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

ITAPEVA (BRAZIL)

Altitude: 647 m.

Latitude: 23°57'S Longitude: 48°53'W

Temperature observation period.: 1969-1989 (21)

Rainfall observation period....: 1969-1989 (21)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	21.50	27.70	17.20	37.00	11.20	160.0	105.55
Feb.	21.80	28.30	17.40	36.00	12.00	146.0	94.32
Mar.	21.00	27.50	16.50	35.10	7.80	92.0	91.42
Apr.	18.70	25.20	14.00	32.50	2.40	62.0	67.27
May.	16.30	22.90	11.50	33.10	-1.30	96.0	50.92
Jun.	14.40	21.50	9.40	30.30	-1.10	74.0	38.23
Jul.	14.20	21.70	9.00	30.30	-3.70	58.0	38.91
Aug.	15.50	23.00	10.20	32.20	0.30	51.0	48.81
Sep.	16.60	23.20	12.50	35.90	2.10	89.0	56.06
Oct.	18.30	25.00	14.10	36.10	6.00	116.0	74.02
Nov.	19.60	26.10	15.60	37.00	6.20	121.0	84.93
Dec.	19.60	25.30	15.50	35.40	0.00	168.0	90.29
Year	18.13	24.78	13.58	34.24	3.49	1233	840.73

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	488
Compensated thermicity index.....(Itc):	484
Simple continentality index.....(Ic):	7.6
Diurnality index.....(Id):	12.8
Annual ombrothermic index.....(Io):	5.67
Monthly dry ombrothermic index.....(Iod1):	3.29
Bimonthly dry ombrothermic index.....(Iod2):	3.67
Three monthly dry ombrothermic index.....(Iod3):	4.15
Four monthly dry ombrothermic index.....(Iod4):	4.62
Annual ombro-evaporation index.....(Ioe):	1.55
Annual positive temperature.....(Tp):	2175
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	441
Positive precipitation.....(Pp):	1233

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	10	2	0	0	0

Latitudinal Belt...: Subtropical

Continentalty.....: Hyperoceanic - Low Euhyperoceanic

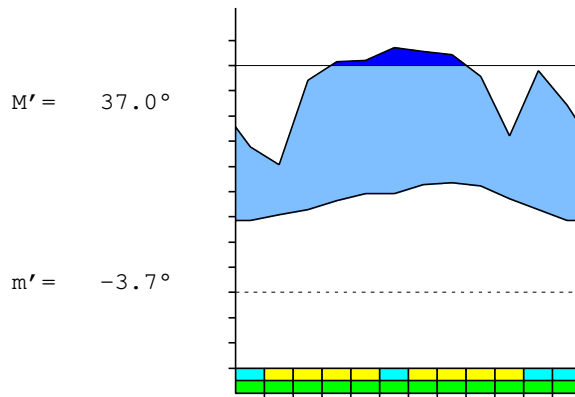
Bioclimate(Variant): TROPICAL PLUVIAL (HYGROPHYTIC)

Bioclimatic Belt...: LOW MESOTROPICAL UPPER SUBHUMID

ITAPEVA (BRAZIL)

647 m

P= 1233 23° 57' S 48° 53' W 21/21 y.
 T= 18.1° Ic= 7.6 Tp= 2175 Tn= 0
 m= 9.0° M= 21.7° Itc= 484 Io= 5.7



TROPICAL PLUVIAL (HYGROPHYTIC)
 LOW MESOTROPICAL UPPER SUBHUMID

WATER INDEX CARD ITAPEVA (BRAZIL)
 Altitude: 647 m. Latitude: 23° 57' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	14.2	39	58	0	100	39	0	19	25	0.4
Aug.	15.5	49	51	0	100	49	0	2	14	0.0
Sep.	16.6	56	89	0	100	56	0	33	23	0.5
Oct.	18.3	74	116	0	100	74	0	42	33	0.5
Nov.	19.6	85	121	0	100	85	0	36	34	0.4
Dec.	19.6	90	168	0	100	90	0	78	56	0.8
Jan.	21.5	106	160	0	100	106	0	54	55	0.5
Feb.	21.8	94	146	0	100	94	0	52	53	0.5
Mar.	21.0	91	92	0	100	91	0	1	27	0.0
Apr.	18.7	67	62	-5	95	67	0	0	14	0.0
May.	16.3	51	96	5	100	51	0	40	27	0.8
Jun.	14.4	38	74	0	100	38	0	36	31	0.9
Year	18.1	841	1233	*	*	841	0	392	392	*

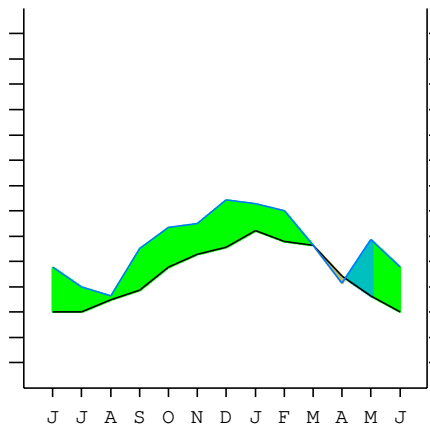
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

ITAPEVA (BRAZIL)

23°57' S 48°53' W 647 m 21/21 y.

T= 18.1 Ic= 7.6 TROPICAL PLUVIAL (HYGROPHYTIC)
 m= 9.0 Tp= 2175 LOW MESOTROPICAL
 M= 21.7 Tn= 0 UPPER SUBHUMID
 M' = 37.0 Itc= 484
 m' = -3.7 Io= 5.7
 P= 1233 mm ———
 PE= 841 mm ———

Imbibing	4 Apr.
Saturation	4 May.
Reserve Use	3 Mar.
Deficit	



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A2b]
 + Type: A. Hyperoceanic
 + Subtype: 2. Euhyperoceanic
 + Variant: b. Low

Thermic types [A3.A3]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 3. Subtropical
 + Thermic type: A. Warm
 + Thermic subtype: 3. Subwarm

Bioclimatic types [A5.3b.6a]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 5. PLUVIAL
 + Bioclimatic variant ..:
 + Thermic type.....: 3. MESOTROPICAL
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : a. UPPER

Bioclimatic Classification: Trhd.Mtr.Shu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 749
 Coldest semester of the year.....(Psw): 484
 Warmest four months period of the year.....(Pcm1): 566
 Following warmest four months period.....(Pcm2): 290
 Positive precipitation dryest 3 months.....(Ppd): 183
 Positive precipitation dryest 2 months.....(Ppd2): 109
 Positive precipitation dryest 1 month.....(Ppd1): 51
 Positive precipitation warmest 3 months.....(Pps): 398
 Positive precipitation warmest 2 months.....(Pps2): 306
 Positive precipitation warmest 1 month.....(Pps1): 146
 Positive precipitation coldest 3 months.....(Ppw): 183
 Positive precipitation coldest 2 months.....(Ppw2): 132
 Positive precipitation coldest 1 month.....(Ppw1): 58

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	183	326	474	250

Seasonal rainfall rhythms: S > P > F > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 21.8
 Average coldest month [T].....(Tmin): 14.2
 Maximum temp. warmest month [M].....(Tmmax): 28.3
 Minimum temp. coldest month [m].....(Tmmin): 9.0
 Absolute Max.temp. warmest month [M'].....(Tamax): 37.0
 Absolute Min.temp. coldest month [m'].....(Tamin): -3.7
 First warmest contrasted month [M].....(Tcmax): 23.0 (8)
 First coldest contrasted month [m].....(Tcmin): 10.2 (8)
 Dry station temperature.....(Td): 441
 Positive temperature dryest 3 months.....(Tpd): 441
 Positive temperature dryest 2 months.....(Tpd2): 297
 Positive temperature dryest 1 month.....(Tpd1): 155
 Positive temperature warmest 3 months.....(Tps): 643
 Positive temperature warmest 2 months.....(Tps2): 433
 Positive temperature warmest 1 month.....(Tps1): 218
 Positive temperature coldest 3 months.....(Tpw): 441
 Positive temperature coldest 2 months.....(Tpw2): 286
 Positive temperature coldest 1 month.....(Tpw1): 142

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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)					o	o	o					o
Agelid.....[m' > 0] (Pf)	o	o	o	o				o	o	o	o	
HiperAgelid..[all>0] (Pf)	o	o	o	o				o	o	o	o	

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.68
 Mediterranean index of January.....(Im1): 0.66
 Mediterranean index of January & February.....(Im2): 0.65
 Mediterranean index of December to February...(Im3): 0.61

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1680	1600	1460	920	620	960	740	580	510	890	1160	1210
Tp	196	215	218	210	187	163	144	142	155	166	183	196
Io (Iom)	8.57	7.44	6.70	4.38	3.32	5.89	5.14	4.08	3.29	5.36	6.34	6.17
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	4740 / 629			2500 / 560			1830 / 441			3260 / 545		
Io (Iot)	7.536			4.464			4.150			5.982		
Semesters	December-May						June-November					
Pp(x10)/Tp	7240 / 1189						5090 / 986					
Io (Iosm)	6.089						5.162					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 12330/2175=5.67 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1680	1600	1460	920	620	960	740	580	510	890	1160	1210
TP [T*10]	196	215	218	210	187	163	144	142	155	166	183	196
Iom [Pp/TP]	857	744	670	438	332	589	514	408	329	536	634	617
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	4740 / 629			2500 / 560			1830 / 441			3260 / 545		
Iot [Pp/TP]	754			446			415			598		
Avs E [Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 7.60
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 11.43
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 9.13
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 0.85
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: 68.03
 + Temperate warm (100>R>60)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 43.84
 + Humid (60>Ia>30)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 171.28
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 1.47
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 1.47
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 22.89
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: A. Warm and temperate warm
 + Region: 7. Mesoaxeric (Axeric temperate)
 + Thermic type: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.68	0.61	0.37	0.25	0.44	0.35	0.27	0.22	0.40	0.51	0.52	0.75
T-E ratio	9.67	9.81	9.45	8.42	7.33	6.48	6.39	6.97	7.47	8.23	8.82	8.82
Precipitation-effectiveness:	53.66					Temperature-efficiency: 97.87						
Moisture Index [MI=100*(P-PE)/PE]: 46.66 + B2.Humid medium-humid (40<MI<60)												
Index of dryness [DI=100*d/PE]: 0.00 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE]: 46.65 + Strong surplus (20<HI)												
Potential Evapotranspiration PE: 840.73 + Second mesothermic (712<PE<855)												

