

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

APODI (BRAZIL)

Altitude: 65 m.

Latitude: 0°39'S Longitude: 37°48'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.	28.20	34.30	23.60	38.00	19.60	48.0	155.07
Feb.	27.90	34.40	23.50	38.20	19.30	101.0	137.90
Mar.	27.30	33.10	23.50	37.50	20.40	208.0	147.58
Apr.	27.00	32.30	23.60	37.20	20.40	180.0	140.90
May.	26.80	32.20	23.10	36.20	19.70	112.0	143.42
Jun.	23.50	32.10	22.30	36.30	19.50	143.0	84.54
Jul.	25.10	31.50	21.90	36.60	17.20	55.0	111.99
Aug.	23.50	33.80	22.40	37.60	17.40	9.0	87.05
Sep.	27.50	35.30	22.90	38.00	15.20	11.0	144.94
Oct.	27.90	36.10	22.50	39.30	19.00	11.0	152.57
Nov.	28.30	36.10	22.80	38.50	18.60	10.0	151.41
Dec.	28.30	34.50	23.20	36.80	19.60	31.0	155.90
Year	26.77	33.81	22.94	37.52	18.83	919	1613.3

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	812
Compensated thermicity index.....(Itc):	812
Simple continentality index.....(Ic):	4.8
Diurnality index.....(Id):	13.6
Annual ombrothermic index.....(Io):	2.86
Monthly dry ombrothermic index.....(Iod1):	0.38
Bimonthly dry ombrothermic index.....(Iod2):	0.39
Three monthly dry ombrothermic index.....(Iod3):	0.39
Four monthly dry ombrothermic index.....(Iod4):	0.83
Annual ombro-evaporation index.....(Ioe):	0.30
Annual positive temperature.....(Tp):	3213
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	789
Positive precipitation.....(Pp):	919

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

Latitudinal Belt...: Equatorial

Continentality.....: Hyperoceanic - High Euhyperoceanic

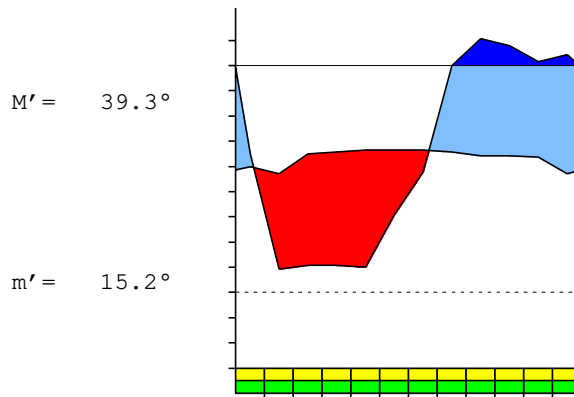
Bioclimate(Variant): TROPICAL XERIC (PLUVISEROTIN, DRY)

Bioclimatic Belt...: UPPER INFRATROPICAL UPPER DRY

APODI (BRAZIL)

65 m

P= 919      0° 39'S      37° 48'W      30/30 y.  
 T= 26.8°    Ic= 4.8      Tp= 3213      Tn= 0  
 m= 22.3°    M= 32.1°      Itc= 812      Io= 2.9



TROPICAL XERIC (PLUVISEROTIN)  
 UPPER INFRATROPICAL UPPER DRY

WATER INDEX CARD

APODI (BRAZIL)

Altitude: 65 m.

Latitude: 0° 39'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	25.1	112	55	-57	43	112	0	0	7	-0.5
Aug.	23.5	87	9	-43	0	52	35	0	3	-0.8
Sep.	27.5	145	11	0	0	11	134	0	2	-0.9
Oct.	27.9	153	11	0	0	11	142	0	1	-0.9
Nov.	28.3	151	10	0	0	10	141	0	0	-0.9
Dec.	28.3	156	31	0	0	31	125	0	0	-0.8
Jan.	28.2	155	48	0	0	48	107	0	0	-0.6
Feb.	27.9	138	101	0	0	101	37	0	0	-0.2
Mar.	27.3	148	208	60	60	148	0	0	0	0.4
Apr.	27.0	141	180	39	100	141	0	0	0	0.2
May.	26.8	143	112	-31	68	143	0	0	0	-0.2
Jun.	23.5	85	143	32	100	85	0	27	13	0.6
Year	26.8	1613	919	*	*	892	721	27	27	*

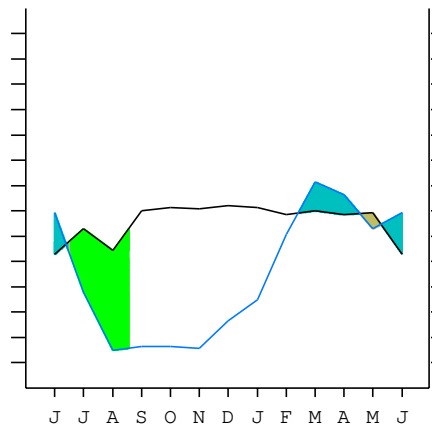
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

APODI (BRAZIL)

0°39'S    37°48'W    65 m 30/30 y.

T= 26.8    Ic= 4.8    TROPICAL XERIC (PLUVISEROTIN)  
 m= 22.3    Tp= 3213    UPPER INFRATROPICAL  
 M= 32.1    Tn= 0    UPPER DRY  
 M' = 39.3    Itc= 812  
 m' = 15.2    Io= 2.9  
 P= 919    mm    ———  
 PE= 1613    mm    ———

Imbibing	11 May.
Saturation	17 Jun.
Reserve Use	17 Apr.
Deficit	17 Aug.



APODI (BRAZIL)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A2a]  
 + Type .....: A. Hyperoceanic  
 + Subtype .....: 2. Euhyperoceanic  
 + 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 [A3e.1a.5a]  
 + Macrobioclimate .....: A. TROPICAL  
 + Bioclimate .....: 3. XERIC  
 + Bioclimatic variant .: e. PLUVISEROTIN, DRY  
 + Thermic type.....: 1. INFRATROPICAL  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : a. UPPER  
 Bioclimatic Classification .....: Trxe(Pse).Itr.Dry

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 212  
 Coldest semester of the year.....(Psw): 707  
 Warmest four months period of the year.....(Pcm1): 100  
 Following warmest four months period.....(Pcm2): 601  
 Positive precipitation dryest 3 months.....(Ppd): 31  
 Positive precipitation dryest 2 months.....(Ppd2): 20  
 Positive precipitation dryest 1 month.....(Ppd1): 9  
 Positive precipitation warmest 3 months.....(Pps): 89  
 Positive precipitation warmest 2 months.....(Pps2): 41  
 Positive precipitation warmest 1 month.....(Pps1): 10  
 Positive precipitation coldest 3 months.....(Ppw): 207  
 Positive precipitation coldest 2 months.....(Ppw2): 198  
 Positive precipitation coldest 1 month.....(Ppw1): 143

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	207	32	180	500

Tropical rainfall rhythms: 2 > 3 > 1 > 4

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 28.3  
 Average coldest month [T].....(Tmin): 23.5  
 Maximum temp. warmest month [M].....(Tmmax): 36.1  
 Minimum temp. coldest month [m].....(Tmmin): 21.9  
 Absolute Max.temp. warmest month [M'].....(Tamax): 39.3  
 Absolute Min.temp. coldest month [m'].....(Tamin): 15.2  
 First warmest contrasted month [M].....(Tcmax): 36.1 (10)  
 First coldest contrasted month [m].....(Tcmin): 22.5 (10)  
 Dry station temperature.....(Td): 789  
 Positive temperature dryest 3 months.....(Tpd): 789  
 Positive temperature dryest 2 months.....(Tpd2): 510  
 Positive temperature dryest 1 month.....(Tpd1): 235  
 Positive temperature warmest 3 months.....(Tps): 848  
 Positive temperature warmest 2 months.....(Tps2): 566  
 Positive temperature warmest 1 month.....(Tps1): 283  
 Positive temperature coldest 3 months.....(Tpw): 721  
 Positive temperature coldest 2 months.....(Tpw2): 486  
 Positive temperature coldest 1 month.....(Tpw1): 235

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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): 1.76  
 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)	310	480	1010	2080	1800	1120	1430	550	90	110	110	100
Tp	283	282	279	273	270	268	235	251	235	275	279	283
Io (Iom)	1.10	1.70	3.62	7.62	6.67	4.18	6.09	2.19	0.38	0.40	0.39	0.35
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	1800 / 844			5000 / 811			2070 / 721			320 / 837		
Io (Iot)	2.133			6.165			2.871			0.382		
Semesters	December-May						June-November					
Pp(x10)/Tp	6800 / 1655						2390 / 1558					
Io (Iosm)	4.109						1.534					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 9190/3213=2.86 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	310	480	1010	2080	1800	1120	1430	550	90	110	110	100
Tp [T*10]	283	282	279	273	270	268	235	251	235	275	279	283
Iom [Pp/Tp]	110	170	362	762	667	418	609	219	38	40	39	35
Avm [200-Iom]	90	30	***	***	***	***	***	***	162	160	161	165
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	1800 / 844			5000 / 811			2070 / 721			320 / 837		
Iot [Pp/Tp]	213			617			287			38		
Avs E[Avm<200]	***			***			***			485		
Upper hyperarid [5]							Strong lower semiarid [1]					
Weak upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 4.80  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 698.90  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 30.15  
 + Oceanic (20<CI<40)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 3.95  
 + Hypercontinental (2.3<CI<5)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 34.32  
 + Steppic (40>R>0)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 24.99  
 + Subhumid (30>Ia>20)  
 I of Emberger (1930) [Q=100\*P/(Tmax<sup>2</sup>-Tmin<sup>2</sup>)] .....: 111.58  
 + Humid (Q>90)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 2.91  
 + Semiarid (3>DR>2)  
 Aridity Index of UNEP [I=P/PE] .....: 0.57  
 + Subhumid - dry (0.65>I>0.5)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 47.08  
 + 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	0.15	0.35	0.79	0.68	0.40	0.57	0.19	0.03	0.03	0.03	0.03	0.09
T-E ratio	12.69	12.55	12.28	12.15	12.06	10.57	11.30	10.57	12.38	12.55	12.73	12.73
Precipitation-effectiveness:	33.36					Temperature-efficiency .....: 144.58						
Moisture Index [MI=100*(P-PE)/PE] .....: -43.04 + D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE] .....: 44.68 + Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....: 1.64 + No surplus (0<HI<10)												
Potential Evapotranspiration PE .....: 1613.27 + Megathermic (PE>1440)												

