

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

JAGUARUANA (BRAZIL)

Altitude: 12 m.

Latitude: 4°47'S Longitude: 37°36'W

Temperature observation period.: 1970-1989 (20)

Rainfall observation period....: 1970-1989 (20)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	27.90	33.80	23.70	37.30	19.90	30.0	155.51
Feb.	24.00	32.90	23.50	37.50	20.80	123.0	87.53
Mar.	26.90	29.40	23.50	36.90	21.20	231.0	144.25
Apr.	26.90	31.80	23.40	36.30	19.20	181.0	138.70
May.	25.20	32.00	22.90	36.00	19.00	115.0	112.69
Jun.	26.10	31.50	21.80	36.20	16.90	55.0	124.62
Jul.	26.00	32.00	21.20	37.10	17.50	46.0	126.58
Aug.	26.00	32.00	21.20	37.10	17.10	55.0	127.82
Sep.	27.30	34.00	21.80	37.20	17.90	48.0	141.90
Oct.	27.50	34.10	22.60	36.90	18.20	3.0	150.68
Nov.	28.10	34.00	23.80	36.90	17.30	1.0	152.76
Dec.	26.00	33.70	23.50	36.30	20.10	18.0	131.54
Year	26.49	32.60	22.74	36.81	18.76	906	1594.6

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	829
Compensated thermicity index.....(Itc):	829
Simple continentality index.....(Ic):	4.1
Diurnality index.....(Id):	12.2
Annual ombrothermic index.....(Io):	2.85
Monthly dry ombrothermic index.....(Iod1):	0.04
Bimonthly dry ombrothermic index.....(Iod2):	0.07
Three monthly dry ombrothermic index.....(Iod3):	0.27
Four monthly dry ombrothermic index.....(Iod4):	0.64
Annual ombro-evaporation index.....(Ioe):	0.21
Annual positive temperature.....(Tp):	3179
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	816
Positive precipitation.....(Pp):	906

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

Latitudinal Belt...: Equatorial

Continentality.....: Hyperoceanic - High Euhyperoceanic

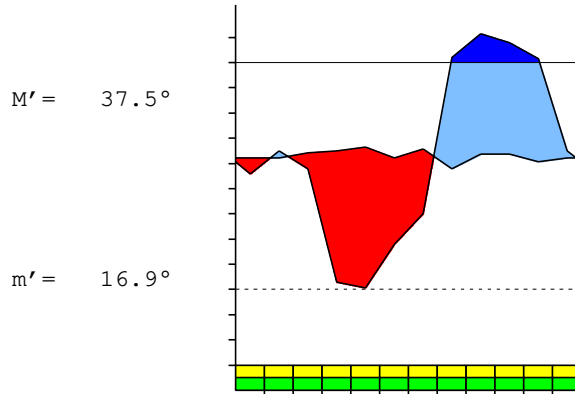
Bioclimate(Variant): TROPICAL XERIC (PLUVISEROTIN, DRY)

Bioclimatic Belt...: UPPER INFRATROPICAL UPPER DRY

JAGUARUANA (BRAZIL)

12 m

P= 906 4° 47' S 37° 36' W 20/20 y.
 T= 26.5° Ic= 4.1 Tp= 3179 Tn= 0
 m= 23.5° M= 32.9° Itc= 829 Io= 2.8



TROPICAL XERIC (PLUVISEROTIN)
 UPPER INFRATROPICAL UPPER DRY

WATER INDEX CARD

JAGUARUANA (BRAZIL)

Altitude: 12 m.

Latitude: 4° 47' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	26.0	127	46	-30	0	76	50	0	4	-0.6
Aug.	26.0	128	55	0	0	55	73	0	2	-0.5
Sep.	27.3	142	48	0	0	48	94	0	1	-0.6
Oct.	27.5	151	3	0	0	3	148	0	0	-0.9
Nov.	28.1	153	1	0	0	1	152	0	0	-0.9
Dec.	26.0	132	18	0	0	18	114	0	0	-0.8
Jan.	27.9	156	30	0	0	30	126	0	0	-0.8
Feb.	24.0	88	123	35	35	88	0	0	0	0.4
Mar.	26.9	144	231	65	100	144	0	22	11	0.6
Apr.	26.9	139	181	0	100	139	0	42	27	0.3
May.	25.2	113	115	0	100	113	0	2	15	0.0
Jun.	26.1	125	55	-70	30	125	0	0	7	-0.5
Year	26.5	1595	906	*	*	839	755	67	67	*

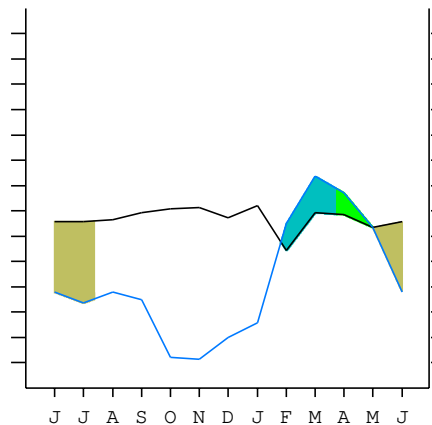
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

JAGUARUANA (BRAZIL)

4°47' S 37°36' W 12 m 20/20 y.

T= 26.5 Ic= 4.1 TROPICAL XERIC (PLUVISEROTIN)
 m= 23.5 Tp= 3179 UPPER INFRATROPICAL
 M= 32.9 Tn= 0 UPPER DRY
 M' = 37.5 Itc= 829
 m' = 16.9 Io= 2.8
 P= 906 mm ———
 PE= 1595 mm ———

Imbibing	24 Jan.
Saturation	23 Mar.
Reserve Use	1 May.
Deficit	12 Jul.



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality 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): 155
 Coldest semester of the year.....(Psw): 751
 Warmest four months period of the year.....(Pcm1): 52
 Following warmest four months period.....(Pcm2): 650
 Positive precipitation dryest 3 months.....(Ppd): 22
 Positive precipitation dryest 2 months.....(Ppd2): 4
 Positive precipitation dryest 1 month.....(Ppd1): 1
 Positive precipitation warmest 3 months.....(Pps): 52
 Positive precipitation warmest 2 months.....(Pps2): 4
 Positive precipitation warmest 1 month.....(Pps1): 1
 Positive precipitation coldest 3 months.....(Ppw): 216
 Positive precipitation coldest 2 months.....(Ppw2): 354
 Positive precipitation coldest 1 month.....(Ppw1): 123

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	156	52	171	527

Tropical rainfall rhythms: 2 > 1 > 3 > 4

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 28.1
 Average coldest month [T].....(Tmin): 24.0
 Maximum temp. warmest month [M].....(Tmmax): 34.1
 Minimum temp. coldest month [m].....(Tmmin): 21.2
 Absolute Max.temp. warmest month [M'].....(Tamax): 37.5
 Absolute Min.temp. coldest month [m'].....(Tamin): 16.9
 First warmest contrasted month [M].....(Tcmax): 34.0 (9)
 First coldest contrasted month [m].....(Tcmin): 21.8 (9)
 Dry station temperature.....(Td): 816
 Positive temperature dryest 3 months.....(Tpd): 816
 Positive temperature dryest 2 months.....(Tpd2): 556
 Positive temperature dryest 1 month.....(Tpd1): 281
 Positive temperature warmest 3 months.....(Tps): 829
 Positive temperature warmest 2 months.....(Tps2): 556
 Positive temperature warmest 1 month.....(Tps1): 281
 Positive temperature coldest 3 months.....(Tpw): 773
 Positive temperature coldest 2 months.....(Tpw2): 509
 Positive temperature coldest 1 month.....(Tpw1): 240

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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)	180	300	1230	2310	1810	1150	550	460	550	480	30	10
Tp	260	279	240	269	269	252	261	260	260	273	275	281
Io (Iom)	0.69	1.08	5.13	8.59	6.73	4.56	2.11	1.77	2.12	1.76	0.11	0.04
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	1710 / 779			5270 / 790			1560 / 781			520 / 829		
Io (Iot)	2.195			6.671			1.997			0.627		
Semesters	December-May						June-November					
Pp(x10)/Tp	6980 / 1569						2080 / 1610					
Io (Iosm)	4.449						1.292					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 9060/3179=2.85 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	180	300	1230	2310	1810	1150	550	460	550	480	30	10
Tp [T*10]	260	279	240	269	269	252	261	260	260	273	275	281
Iom [Pp/Tp]	69	108	513	859	673	456	211	177	212	176	11	4
Avm [200-Iom]	131	92	***	***	***	***	***	23	***	24	189	196
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	1710 / 779			5270 / 790			1560 / 781			520 / 829		
Iot [Pp/Tp]	220			667			200			63		
Avs E[Avm<200]	***			***			***			410		
Lower ultrahyperarid [1]						Upper ultrahyperarid [1]						
Weak lower arid [2]						Strong lower semiarid [1]						
Weak upper semiarid [2]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp):	4.10
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]		63.19
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]		13.32
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)]		1.58
+ Subcontinental (1.1<CI<1.7)		
Rainfall Index of Lang (1925) [R=P/T]		34.20
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)]		24.83
+ Subhumid (30>Ia>20)		
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]		127.00
+ Humid (Q>90)		
I of Dantin & Revenga (1940) [DR=100*T/P]		2.92
+ 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 ² /P]		58.90
+ Very low (K<60)		

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 1. Megathermic

Thornthwaite (1948)													
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
P-E ratio	0.09	0.48	0.90	0.68	0.43	0.19	0.15	0.19	0.16	0.01	0.00	0.05	
T-E ratio	12.55	10.80	12.10	12.10	11.34	11.75	11.70	11.70	12.28	12.38	12.65	11.70	
Precipitation-effectiveness:	33.15					Temperature-efficiency							143.05
Moisture Index [MI=100*(P-PE)/PE]	-43.18												
+ D.Semiarid (-66.7<MI<-33.3)													
Index of dryness [DI=100*d/PE]	47.37												
+ Strong deficit (33.3<DI)													
Index of humidity [HI=100*s/PE]	4.19												
+ No surplus (0<HI<10)													
Potential Evapotranspiration PE	1594.58												
+ Megathermic (PE>1440)													

