

Phytosociological Research Center
 www.globalbioclimatics.org
 Worldwide Bioclimatic Classification System
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 (Adapted to Synoptical Table 30/08/2017)

TCHOUROU (BENIN) Altitude: 325 m.
 Latitude: 8°52'N Longitude: 2°36'E
 Temperature observation period.: 1989-1994 (6)
 Rainfall observation period....: 1974-1994 (21)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPi
Jan.	26.94	34.44	19.44	37.22	13.33	7.1	139.02
Feb.	28.62	35.56	21.67	38.89	14.44	15.0	140.27
Mar.	29.17	35.56	22.78	38.33	19.44	57.9	161.58
Apr.	28.61	34.44	22.78	38.33	19.44	103.9	156.96
May.	27.50	32.78	22.22	36.11	19.44	141.0	154.99
Jun.	26.39	31.11	21.67	35.00	18.89	161.0	137.43
Jul.	24.72	28.33	21.11	32.22	17.78	165.1	110.54
Aug.	23.89	27.22	20.56	32.22	17.22	162.1	95.41
Sep.	25.28	29.44	21.11	32.22	18.33	214.1	113.58
Oct.	25.56	30.56	20.56	33.89	18.33	161.0	118.38
Nov.	26.67	32.78	20.56	35.00	13.89	16.0	134.12
Dec.	25.84	33.89	17.78	36.11	12.22	7.1	120.92
Year	26.60	32.18	21.02	35.46	16.90	1211	1583.2

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	744
Compensated thermicity index.....(Itc):	744
Simple continentality index.....(Ic):	5.3
Diurnality index.....(Id):	16.1
Annual ombrothermic index.....(Io):	3.79
Monthly dry ombrothermic index.....(Iod1):	0.27
Bimonthly dry ombrothermic index.....(Iod2):	0.27
Three monthly dry ombrothermic index.....(Iod3):	0.36
Four monthly dry ombrothermic index.....(Iod4):	0.42
Annual ombro-evaporation index.....(Ioe):	0.67
Annual positive temperature.....(Tp):	3192
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	814
Positive precipitation.....(Pp):	1211

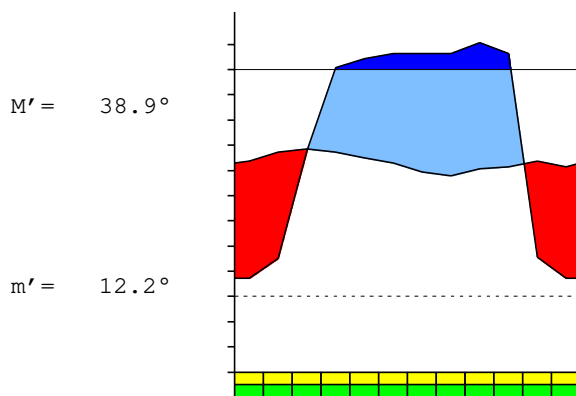
N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	6	1	1	4	0

Latitudinal Belt...: Eutropical
 Continentality.....: Hyperoceanic - High Euhyperoceanic
 Bioclimate(Variant): TROPICAL PLUVISEASONAL (SUBXEROPHYTIC)
 Bioclimatic Belt...: UPPER INFRATROPICAL LOW SUBHUMID

TCHOUROU (BENIN)

325 m

P= 1211 8° 52'N 2° 36'E 6/21 y.
 T= 26.6° Ic= 5.3 Tp= 3192 Tn= 0
 m= 20.6° M= 27.2° Itc= 744 Io= 3.8



TROPICAL PLUVISEASONAL (SUBXEROPHYTIC)
 UPPER INFRATROPICAL LOW SUBHUMID

WATER INDEX CARD TCHOUROU (BENIN)
 Altitude: 325 m. Latitude: 8° 52'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	26.9	139	7	0	0	7	132	0	7	-0.9
Feb.	28.6	140	15	0	0	15	125	0	3	-0.8
Mar.	29.2	162	58	0	0	58	104	0	2	-0.6
Apr.	28.6	157	104	0	0	104	53	0	1	-0.3
May.	27.5	155	141	0	0	141	14	0	0	0.0
Jun.	26.4	137	161	24	24	137	0	0	0	0.1
Jul.	24.7	111	165	55	78	111	0	0	0	0.4
Aug.	23.9	95	162	22	100	95	0	45	22	0.6
Sep.	25.3	114	214	0	100	114	0	101	61	0.8
Oct.	25.6	118	161	0	100	118	0	43	52	0.3
Nov.	26.7	134	16	-100	0	116	18	0	26	-0.8
Dec.	25.8	121	7	0	0	7	114	0	13	-0.9
Year	26.6	1583	1211	*	*	1023	560	188	188	*

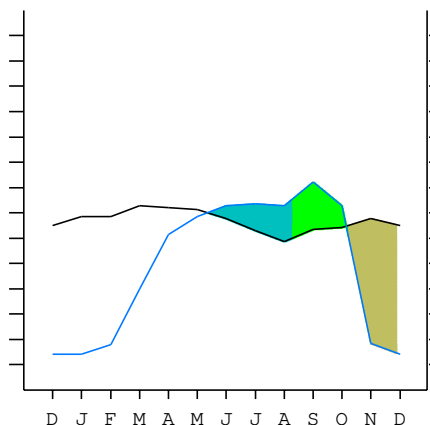
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

TCHOUROU (BENIN)

8°52'N 2°36'E 325 m 6/21 y.

T= 26.6 Ic= 5.3 TROPICAL PLUVISEASONAL (SUBXEROPHYTIC)
 m= 20.6 Tp= 3192 UPPER INFRATROPICAL
 M= 27.2 Tn= 0 LOW SUBHUMID
 M' = 38.9 Itc= 744
 m' = 12.2 Io= 3.8
 P= 1211 mm ———
 PE= 1583 mm ———

Imbibing	12 May.
Saturation	10 Aug.
Reserve Use	8 Oct.
Deficit	26 Nov.



TCHOUROU (BENIN)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental 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 [A4.1a.6b]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 4. PLUVISEASONAL
 + Bioclimatic variant .:
 + Thermic type.....: 1. INFRATROPICAL
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification: Trde.Itr.Shu

TCHOUROU (BENIN)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 486
 Coldest semester of the year.....(Psw): 725
 Warmest four months period of the year.....(Pcm1): 318
 Following warmest four months period.....(Pcm2): 702
 Positive precipitation dryest 3 months.....(Ppd): 29
 Positive precipitation dryest 2 months.....(Ppd2): 14
 Positive precipitation dryest 1 month.....(Ppd1): 7
 Positive precipitation warmest 3 months.....(Pps): 177
 Positive precipitation warmest 2 months.....(Pps2): 73
 Positive precipitation warmest 1 month.....(Pps1): 58
 Positive precipitation coldest 3 months.....(Ppw): 541
 Positive precipitation coldest 2 months.....(Ppw2): 327
 Positive precipitation coldest 1 month.....(Ppw1): 162

Seasons	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4
Rainfall	29	302	488	391

Tropical rainfall rhythms: 3 > 4 > 2 > 1

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 29.2
 Average coldest month [T].....(Tmin): 23.9
 Maximum temp. warmest month [M].....(Tmmax): 35.6
 Minimum temp. coldest month [m].....(Tmmin): 17.8
 Absolute Max.temp. warmest month [M'].....(Tamax): 38.9
 Absolute Min.temp. coldest month [m'].....(Tamin): 12.2
 First warmest contrasted month [M].....(Tcmax): 33.9 (12)
 First coldest contrasted month [m].....(Tcmin): 17.8 (12)
 Dry station temperature.....(Td): 814
 Positive temperature dryest 3 months.....(Tpd): 814
 Positive temperature dryest 2 months.....(Tpd2): 528
 Positive temperature dryest 1 month.....(Tpd1): 269
 Positive temperature warmest 3 months.....(Tps): 864
 Positive temperature warmest 2 months.....(Tps2): 578
 Positive temperature warmest 1 month.....(Tps1): 292
 Positive temperature coldest 3 months.....(Tpw): 739
 Positive temperature coldest 2 months.....(Tpw2): 486
 Positive temperature coldest 1 month.....(Tpw1): 239

TCHOUROU (BENIN)

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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

TCHOUROU (BENIN)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.31
 Mediterranean index of July.[PE/P].....(Im1): No
 Mediterranean index of July & August.....(Im2): No
 Mediterranean index of June, July & August....(Im3): No

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	71	71	150	579	1039	1410	1610	1651	1621	2141	1610	160
Tp	258	269	286	292	286	275	264	247	239	253	256	267
Io (Iom)	0.27	0.26	0.52	1.98	3.63	5.13	6.10	6.68	6.79	8.47	6.30	0.60
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	292 / 814			3028 / 853			4882 / 750			3911 / 775		
Io (Iot)	0.359			3.551			6.509			5.046		
Semesters	December-May						June-November					
Pp(x10)/Tp	3320 / 1667						8793 / 1525					
Io (Iosm)	1.992						5.766					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 12113/3192=3.79 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	71	71	150	579	1039	1410	1610	1651	1621	2141	1610	160
Tp [T*10]	258	269	286	292	286	275	264	247	239	253	256	267
Iom [Pp/Tp]	27	26	52	198	363	513	610	668	679	847	630	60
Avm [200-Iom]	173	174	148	2	***	***	***	***	***	***	***	140
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	292 / 814			3028 / 853			4882 / 750			3911 / 775		
Iot [Pp/Tp]	36			355			651			505		
Avs E[Avm<200]	494			***			***			***		
Lower hyperarid [2]							Upper hyperarid [1]					
Weak lower arid [2]							Weak upper semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp):	5.28
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]		37.83
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]		13.76
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)]		1.33
+ Subcontinental (1.1<CI<1.7)		
Rainfall Index of Lang (1925) [R=P/T]		45.54
+ Semiarid (60>R>40)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)]		33.10
+ Humid (60>Ia>30)		
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]		127.72
+ Humid (Q>90)		
I of Dantin & Revenga (1940) [DR=100*T/P]		2.20
+ Semiarid (3>DR>2)		
Aridity Index of UNEP [I=P/PE]		0.77
+ Humid (I>0.65)		
Potential Erosion I of Fournier (1960) [K=Pi ² /P]		37.84
+ 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	0.02	0.04	0.18	0.36	0.51	0.61	0.65	0.65	0.85	0.62	0.05	0.02	
T-E ratio	12.12	12.88	13.13	12.87	12.38	11.88	11.12	10.75	11.38	11.50	12.00	11.63	
Precipitation-effectiveness:	45.50						Temperature-efficiency						143.64
Moisture Index [MI=100*(P-PE)/PE]												-23.49	
+ C1.Subhumid dry (-33.3<MI<0)													
Index of dryness [DI=100*d/PE]												35.36	
+ Strong deficit (33.3<DI)													
Index of humidity [HI=100*s/PE]												11.87	
+ Moderate surplus (10<HI<20)													
Potential Evapotranspiration PE												1583.20	
+ Megathermic (PE>1440)													

