

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

BANGALORE (INDIA)

Altitude: 920 m.

Latitude: 12°57'N Longitude: 77°37'E

Temperature observation period.: 1955-1980 (26)

Rainfall observation period....: 1920-1980 (61)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPi
Jan.	20.60	27.20	13.90	32.20	11.10	5.0	64.59
Feb.	22.80	30.00	15.60	34.40	11.10	8.0	81.13
Mar.	25.60	32.80	18.30	37.20	13.30	10.0	126.66
Apr.	27.20	33.90	20.60	38.30	16.70	41.0	146.75
May.	27.00	33.30	20.60	38.90	17.20	107.0	153.45
Jun.	24.40	29.40	19.40	37.80	17.80	74.0	114.64
Jul.	23.30	27.80	18.90	33.30	17.20	99.0	103.24
Aug.	23.30	27.80	18.90	32.20	17.20	127.0	101.36
Sep.	23.10	27.80	18.30	32.80	16.10	170.0	93.39
Oct.	23.10	27.80	18.30	32.20	14.40	150.0	92.48
Nov.	21.70	26.70	16.70	31.10	11.10	69.0	73.46
Dec.	20.60	26.10	15.00	31.10	11.10	10.0	64.59
Year	23.56	29.22	17.88	34.29	14.53	870	1215.7

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	647
Compensated thermicity index.....(Itc):	647
Simple continentality index.....(Ic):	6.6
Diurnality index.....(Id):	14.5
Annual ombrothermic index.....(Io):	3.08
Monthly dry ombrothermic index.....(Iod1):	0.24
Bimonthly dry ombrothermic index.....(Iod2):	0.30
Three monthly dry ombrothermic index.....(Iod3):	0.33
Four monthly dry ombrothermic index.....(Iod4):	0.37
Annual ombro-evaporation index.....(Ioe):	1.11
Annual positive temperature.....(Tp):	2827
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	690
Positive precipitation.....(Pp):	870

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	4	3	1	4	0

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - Low Euhyperoceanic

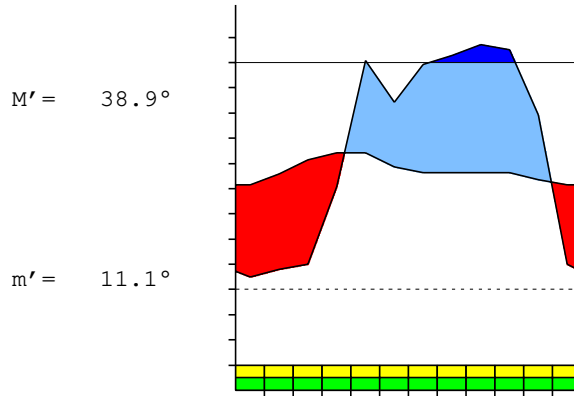
Bioclimate(Variant): TROPICAL XERIC (PLUVISEROTIN, DRY)

Bioclimatic Belt...: LOW THERMOTROPICAL UPPER DRY

BANGALORE (INDIA)

920 m

P= 870 12° 57'N 77° 37'E 26/61 y.
 T= 23.6° Ic= 6.6 Tp= 2827 Tn= 0
 m= 13.9° M= 27.2° Itc= 647 Io= 3.1



TROPICAL XERIC (PLUVISEROTIN)
 LOW THERMOTROPICAL UPPER DRY

WATER INDEX CARD

BANGALORE (INDIA)

Altitude: 920 m.

Latitude: 12° 57'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	20.6	65	5	-41	0	46	19	0	4	-0.9
Feb.	22.8	81	8	0	0	8	73	0	2	-0.9
Mar.	25.6	127	10	0	0	10	117	0	1	-0.9
Apr.	27.2	147	41	0	0	41	106	0	0	-0.7
May.	27.0	153	107	0	0	107	46	0	0	-0.3
Jun.	24.4	115	74	0	0	74	41	0	0	-0.3
Jul.	23.3	103	99	0	0	99	4	0	0	0.0
Aug.	23.3	101	127	26	26	101	0	0	0	0.2
Sep.	23.1	93	170	74	100	93	0	2	1	0.8
Oct.	23.1	92	150	0	100	92	0	58	29	0.6
Nov.	21.7	73	69	-4	96	73	0	0	15	0.0
Dec.	20.6	65	10	-55	41	65	0	0	7	-0.8
Year	23.6	1216	870	*	*	810	406	60	60	*

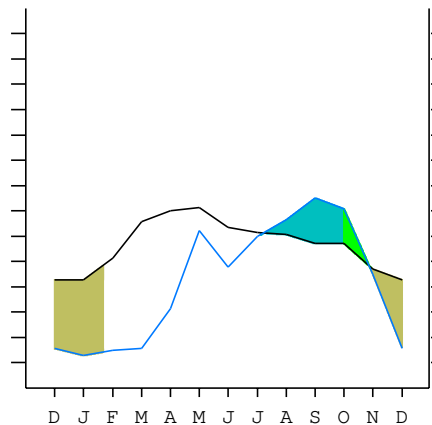
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

BANGALORE (INDIA)

12°57'N 77°37'E 920 m 26/61 y.

T= 23.6 Ic= 6.6 TROPICAL XERIC (PLUVISEROTIN)
 m= 13.9 Tp= 2827 LOW THERMOTROPICAL
 M= 27.2 Tn= 0 UPPER DRY
 M' = 38.9 Itc= 647
 m' = 11.1 Io= 3.1
 P= 870 mm ———
 PE= 1216 mm ———

Imbibing	5 Jul.
Saturation	30 Sep.
Reserve Use	28 Oct.
Deficit	21 Jan.



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

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

Thermic types [A2.A2]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 2. Warm

Bioclimatic types [A3e.2b.5a]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 3. XERIC
 + Bioclimatic variant .: e. PLUVISEROTIN, DRY
 + Thermic type.....: 2. THERMOTROPICAL
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : a. UPPER
 Bioclimatic Classification: Trxe (Pse).Ttr.Dry

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 458
 Coldest semester of the year.....(Psw): 412
 Warmest four months period of the year.....(Pcm1): 232
 Following warmest four months period.....(Pcm2): 546
 Positive precipitation dryest 3 months.....(Ppd): 23
 Positive precipitation dryest 2 months.....(Ppd2): 13
 Positive precipitation dryest 1 month.....(Ppd1): 5
 Positive precipitation warmest 3 months.....(Pps): 158
 Positive precipitation warmest 2 months.....(Pps2): 148
 Positive precipitation warmest 1 month.....(Pps1): 41
 Positive precipitation coldest 3 months.....(Ppw): 84
 Positive precipitation coldest 2 months.....(Ppw2): 15
 Positive precipitation coldest 1 month.....(Ppw1): 5

Seasons	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4
Rainfall	23	158	300	389

Tropical rainfall rhythms: 4 > 3 > 2 > 1

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 27.2
 Average coldest month [T].....(Tmin): 20.6
 Maximum temp. warmest month [M].....(Tmmax): 33.9
 Minimum temp. coldest month [m].....(Tmmin): 13.9
 Absolute Max.temp. warmest month [M'].....(Tamax): 38.9
 Absolute Min.temp. coldest month [m'].....(Tamin): 11.1
 First warmest contrasted month [M].....(Tcmax): 32.8 (3)
 First coldest contrasted month [m].....(Tcmin): 18.3 (3)
 Dry station temperature.....(Td): 690
 Positive temperature dryest 3 months.....(Tpd): 690
 Positive temperature dryest 2 months.....(Tpd2): 434
 Positive temperature dryest 1 month.....(Tpd1): 206
 Positive temperature warmest 3 months.....(Tps): 798
 Positive temperature warmest 2 months.....(Tps2): 542
 Positive temperature warmest 1 month.....(Tps1): 272
 Positive temperature coldest 3 months.....(Tpw): 629
 Positive temperature coldest 2 months.....(Tpw2): 412
 Positive temperature coldest 1 month.....(Tpw1): 206

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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): 1.40
 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)	100	50	80	100	410	1070	740	990	1270	1700	1500	690
Tp	206	206	228	256	272	270	244	233	233	231	231	217
Io (Iom)	0.49	0.24	0.35	0.39	1.51	3.96	3.03	4.25	5.45	7.36	6.49	3.18
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	230 / 640			1580 / 798			3000 / 710			3890 / 679		
Io (Iot)	0.359			1.980			4.225			5.729		
Semesters	December-May						June-November					
Pp(x10)/Tp	1810 / 1438						6890 / 1389					
Io (Iosm)	1.259						4.960					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 8700/2827=3.08 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	100	50	80	100	410	1070	740	990	1270	1700	1500	690
Tp [T*10]	206	206	228	256	272	270	244	233	233	231	231	217
Iom [Pp/Tp]	49	24	35	39	151	396	303	425	545	736	649	318
Avm [200-Iom]	151	176	165	161	49	***	***	***	***	***	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	230 / 640			1580 / 798			3000 / 710			3890 / 679		
Iot [Pp/Tp]	36			198			423			573		
Avs E[Avm<200]	492			***			***			***		
Lower hyperarid [1]						Upper hyperarid [3]						
Strong lower arid [1]						Strong upper semiarid [1]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp):	6.60
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]		29.67
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]		14.77
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)]		1.24
+ Subcontinental (1.1<CI<1.7)		
Rainfall Index of Lang (1925) [R=P/T]		36.93
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)]		25.93
+ Subhumid (30>Ia>20)		
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]		91.00
+ Humid (Q>90)		
I of Dantin & Revenga (1940) [DR=100*T/P]		2.71
+ Semiarid (3>DR>2)		
Aridity Index of UNEP [I=P/PE]		0.72
+ Humid (I>0.65)		
Potential Erosion I of Fournier (1960) [K=Pi ² /P]		33.22
+ Very low (K<60)		

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 2. Macrothermic

Thornthwaite (1948)													
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
P-E ratio	0.01	0.02	0.03	0.13	0.38	0.27	0.38	0.50	0.70	0.61	0.26	0.03	
T-E ratio	9.27	10.26	11.52	12.24	12.15	10.98	10.48	10.48	10.40	10.40	9.77	9.27	
Precipitation-effectiveness:	33.22					Temperature-efficiency							127.22
Moisture Index [MI=100*(P-PE)/PE]													
+ C1.Subhumid dry (-33.3<MI<0)													
Index of dryness [DI=100*d/PE]													
+ Strong deficit (33.3<DI)													
Index of humidity [HI=100*s/PE]													
+ No surplus (0<HI<10)													
Potential Evapotranspiration PE													
+ Forth mesothermic (997<PE<1440)													

