

Phytosociological Research Center

www.globalbioclimatics.org

Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

BOMBAY-SANTA CRUZ (INDIA)

Altitude: 11 m.

Latitude: 19°5'N Longitude: 72°52'E

Temperature observation period.: 1934-1994 (61)

Rainfall observation period....: 1934-1994 (61)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	23.89	31.11	16.67	35.56	7.78	3.6	83.06
Feb.	24.45	31.67	17.22	39.44	11.67	2.0	86.22
Mar.	26.67	33.33	20.00	43.33	12.78	1.3	140.97
Apr.	28.61	33.89	23.33	40.56	18.89	0.8	160.01
May.	29.73	33.89	25.56	38.89	20.00	16.5	182.33
Jun.	28.89	33.89	23.89	38.89	21.11	484.1	170.09
Jul.	27.50	31.11	23.89	35.56	21.67	616.5	163.60
Aug.	27.50	30.56	24.44	32.22	21.11	340.1	157.86
Sep.	27.22	31.11	23.33	35.00	20.00	263.9	144.09
Oct.	28.34	33.89	22.78	38.89	19.44	64.5	150.23
Nov.	27.22	33.33	21.11	36.67	15.56	13.5	131.38
Dec.	25.28	32.22	18.33	38.33	12.78	2.0	103.83
Year	27.11	32.50	21.71	37.78	16.90	1809	1673.7

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	749
Compensated thermicity index.....(Itc):	749
Simple continentality index.....(Ic):	5.8
Diurnality index.....(Id):	14.5
Annual ombrothermic index.....(Io):	5.56
Monthly dry ombrothermic index.....(Iod1):	0.03
Bimonthly dry ombrothermic index.....(Iod2):	0.04
Three monthly dry ombrothermic index.....(Iod3):	0.05
Four monthly dry ombrothermic index.....(Iod4):	0.07
Annual ombro-evaporation index.....(Ioe):	19.81
Annual positive temperature.....(Tp):	3253
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	797
Positive precipitation.....(Pp):	1809

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	4	1	0	7	0

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - High Euhyperoceanic

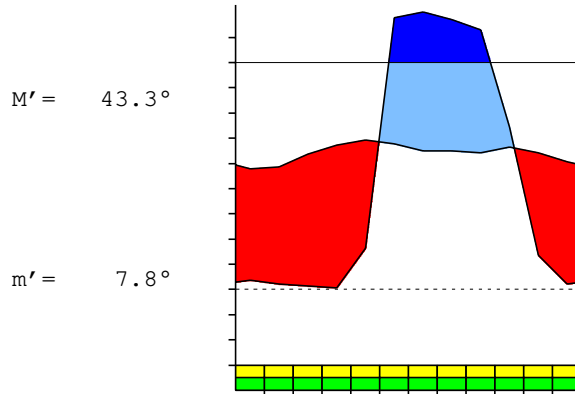
Bioclimatic(Variant): TROPICAL PLUVISEASONAL (XEROPHYTIC)

Bioclimatic Belt...: UPPER INFRATROPICAL UPPER SUBHUMID

BOMBAY-SANTA CRUZ (INDIA)

11 m

P= 1809 19° 5'N 72° 52'E 61/61 y.
 T= 27.1° Ic= 5.8 Tp= 3253 Tn= 0
 m= 16.7° M= 31.1° Itc= 749 Io= 5.6



TROPICAL PLUVISEASONAL (XEROPHYTIC)
 UPPER INFRATROPICAL UPPER SUBHUMID

WATER INDEX CARD

BOMBAY-SANTA CRUZ (INDIA)

Altitude: 11 m.

Latitude: 19° 5'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	23.9	83	4	0	0	4	79	0	11	-0.9
Feb.	24.5	86	2	0	0	2	84	0	5	-0.9
Mar.	26.7	141	1	0	0	1	140	0	3	-0.9
Apr.	28.6	160	1	0	0	1	159	0	1	-0.9
May.	29.7	182	17	0	0	17	166	0	1	-0.9
Jun.	28.9	170	484	100	100	170	0	214	107	1.8
Jul.	27.5	164	617	0	100	164	0	453	280	2.7
Aug.	27.5	158	340	0	100	158	0	182	231	1.1
Sep.	27.2	144	264	0	100	144	0	120	175	0.8
Oct.	28.3	150	65	-86	14	150	0	0	88	-0.5
Nov.	27.2	131	14	-14	0	28	104	0	44	-0.8
Dec.	25.3	104	2	0	0	2	102	0	22	-0.9
Year	27.1	1674	1809	*	*	840	834	969	969	*

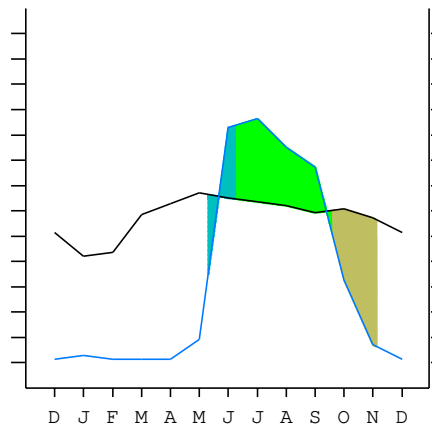
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

BOMBAY-SANTA CRUZ (INDIA)

19°5'N 72°52'E 11 m 61/61 y.

T= 27.1 Ic= 5.8 TROPICAL PLUVISEASONAL (XEROPHYTIC)
 m= 16.7 Tp= 3253 UPPER INFRATROPICAL
 M= 31.1 Tn= 0 UPPER SUBHUMID
 M' = 43.3 Itc= 749
 m' = 7.8 Io= 5.6
 P= 1809 mm ———
 PE= 1674 mm ———

Imbibing	11 May.
Saturation	10 Jun.
Reserve Use	18 Sep.
Deficit	4 Nov.



BOMBAY-SANTA CRUZ (INDIA)

Latitude: 19°5'N Longitude: 72°52'E Altitude: 11 m

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.6a]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 4. PLUVISEASONAL
 + Bioclimatic variant ..:
 + Thermic type.....: 1. INFRATROPICAL
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : a. UPPER
 Bioclimatic Classification: Trde.Itr.Shu

BOMBAY-SANTA CRUZ (INDIA)

Latitude: 19°5'N Longitude: 72°52'E Altitude: 11 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 1722
 Coldest semester of the year.....(Psw): 87
 Warmest four months period of the year.....(Pcm1): 1118
 Following warmest four months period.....(Pcm2): 682
 Positive precipitation dryest 3 months.....(Ppd): 4
 Positive precipitation dryest 2 months.....(Ppd2): 2
 Positive precipitation dryest 1 month.....(Ppd1): 1
 Positive precipitation warmest 3 months.....(Pps): 501
 Positive precipitation warmest 2 months.....(Pps2): 501
 Positive precipitation warmest 1 month.....(Pps1): 17
 Positive precipitation coldest 3 months.....(Ppw): 8
 Positive precipitation coldest 2 months.....(Ppw2): 6
 Positive precipitation coldest 1 month.....(Ppw1): 4

Seasons	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4
Rainfall	7	18	1440	341

Tropical rainfall rhythms: 3 > 4 > 2 > 1

BOMBAY-SANTA CRUZ (INDIA)

Latitude: 19°5'N Longitude: 72°52'E Altitude: 11 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 29.7
 Average coldest month [T].....(Tmin): 23.9
 Maximum temp. warmest month [M].....(Tmmax): 33.9
 Minimum temp. coldest month [m].....(Tmmin): 16.7
 Absolute Max.temp. warmest month [M'].....(Tamax): 43.3
 Absolute Min.temp. coldest month [m'].....(Tamin): 7.8
 First warmest contrasted month [M].....(Tcmax): 31.7 (2)
 First coldest contrasted month [m].....(Tcmin): 17.2 (2)
 Dry station temperature.....(Td): 797
 Positive temperature dryest 3 months.....(Tpd): 797
 Positive temperature dryest 2 months.....(Tpd2): 553
 Positive temperature dryest 1 month.....(Tpd1): 286
 Positive temperature warmest 3 months.....(Tps): 872
 Positive temperature warmest 2 months.....(Tps2): 586
 Positive temperature warmest 1 month.....(Tps1): 297
 Positive temperature coldest 3 months.....(Tpw): 736
 Positive temperature coldest 2 months.....(Tpw2): 483
 Positive temperature coldest 1 month.....(Tpw1): 239

BOMBAY-SANTA CRUZ (INDIA)

Latitude: 19°5'N Longitude: 72°52'E Altitude: 11 m

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

BOMBAY-SANTA CRUZ (INDIA)

Latitude: 19°5'N Longitude: 72°52'E Altitude: 11 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.93
 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)	20	36	20	13	8	165	4841	6165	3401	2639	645	135
Tp	253	239	245	267	286	297	289	275	275	272	283	272
Io (Iom)	0.08	0.15	0.08	0.05	0.03	0.55	16.8	22.4	12.4	9.70	2.28	0.50
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	76 / 736			186 / 850			14407 / 839			3419 / 828		
Io (Iot)	0.103			0.219			17.17			4.130		
Semesters	December-May						June-November					
Pp(x10)/Tp	262 / 1586						17826 / 1667					
Io (Iosm)	0.165						10.70					

BOMBAY-SANTA CRUZ (INDIA)

Latitude: 19°5'N Longitude: 72°52'E Altitude: 11 m

Aridity Value Index (AVI)

[10xPP/TP=IO]: 18088/3253=5.56 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	20	36	20	13	8	165	4841	6165	3401	2639	645	135
Tp [T*10]	253	239	245	267	286	297	289	275	275	272	283	272
Iom [Pp/Tp]	8	15	8	5	3	55	\$\$	\$\$	\$\$	970	228	50
Avm [200-Iom]	192	185	192	195	197	145	***	***	***	***	***	150
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	76 / 736			186 / 850			14407 / 839			3419 / 828		
Iot [Pp/Tp]	10			22			1717			413		
Avs E[Avm<200]	569			537			***			***		
Lower ultrahyperarid [4]							Upper ultrahyperarid [2]					
Lower hyperarid [1]							Strong lower arid [1]					
Weak lower arid [1]												

BOMBAY-SANTA CRUZ (INDIA)

Latitude: 19°5'N Longitude: 72°52'E Altitude: 11 m

BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 5.84
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 9.97
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 6.42
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 0.79
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: 66.72
 + Temperate warm (100>R>60)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 48.74
 + Humid (60>Ia>30)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 207.75
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 1.50
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 1.08
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 210.12
 + Very high (160<K)

BOMBAY-SANTA CRUZ (INDIA)

Latitude: 19°5'N Longitude: 72°52'E Altitude: 11 m

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	0.01	0.00	0.00	0.00	0.04	1.95	2.63	1.36	1.03	0.21	0.04	0.00
T-E ratio	10.75	11.00	12.00	12.87	13.38	13.00	12.38	12.38	12.25	12.75	12.25	11.38
Precipitation-effectiveness:	72.93					Temperature-efficiency: 146.38						
Moisture Index [MI=100*(P-PE)/PE]: 8.07 + C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE]: 49.82 + Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]: 57.89 + Strong surplus (20<HI)												
Potential Evapotranspiration PE: 1673.66 + Megathermic (PE>1440)												

