

# Phytosociological Research Center

www.globalbioclimatics.org

## Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

TEFE (BRAZIL)

Altitude: 47 m.

Latitude: 3°22'S Longitude: 64°42'W

Temperature observation period.: 1969-1990 (22)

Rainfall observation period....: 1969-1990 (22)

| (C/mm) | Ti    | Mi    | mi    | M'i   | m'i   | Pi    | EPI    |
|--------|-------|-------|-------|-------|-------|-------|--------|
| Jan.   | 26.00 | 31.10 | 22.80 | 36.80 | 18.00 | 260.0 | 131.09 |
| Feb.   | 26.20 | 31.20 | 22.90 | 35.50 | 15.80 | 238.0 | 120.66 |
| Mar.   | 26.20 | 31.30 | 22.90 | 35.00 | 18.60 | 275.0 | 133.50 |
| Apr.   | 26.20 | 31.30 | 22.90 | 35.00 | 18.90 | 287.0 | 129.65 |
| May.   | 26.10 | 30.90 | 22.90 | 35.00 | 18.40 | 272.0 | 130.40 |
| Jun.   | 25.80 | 30.70 | 22.30 | 34.40 | 15.40 | 176.0 | 121.41 |
| Jul.   | 25.80 | 31.10 | 21.90 | 36.00 | 14.90 | 129.0 | 125.05 |
| Aug.   | 26.30 | 31.90 | 22.30 | 35.90 | 17.10 | 102.0 | 135.35 |
| Sep.   | 26.40 | 32.20 | 22.50 | 36.60 | 19.00 | 149.0 | 131.95 |
| Oct.   | 26.60 | 32.40 | 22.50 | 36.40 | 19.40 | 169.0 | 141.75 |
| Nov.   | 26.60 | 31.90 | 22.90 | 36.00 | 18.90 | 192.0 | 139.03 |
| Dec.   | 26.40 | 31.50 | 22.70 | 35.40 | 19.00 | 216.0 | 138.55 |
| Year   | 26.22 | 31.46 | 22.63 | 35.67 | 17.78 | 2465  | 1578.4 |

### BIOCLIMATIC INDICES AND DIAGNOSIS

|  |      |
|--|------|
| Thermicity index.....(It):                       | 792  |
| Compensated thermicity index.....(Itc):          | 792  |
| Simple continentality index.....(Ic):            | 0.8  |
| Diurnality index.....(Id):                       | 9.9  |
| Annual ombrothermic index.....(Io):              | 7.84 |
| Monthly dry ombrothermic index.....(Iod1):       | 3.88 |
| Bimonthly dry ombrothermic index.....(Iod2):     | 4.43 |
| Three monthly dry ombrothermic index.....(Iod3): | 4.84 |
| Four monthly dry ombrothermic index.....(Iod4):  | 5.33 |
| Annual ombro-evaporation index.....(Ioe):        | 0.79 |
| Annual positive temperature.....(Tp):            | 3146 |
| Annual negative temperature.....(Tn):            | 0    |
| Dry station temperature.....(Td):                | 785  |
| Positive precipitation.....(Pp):                 | 2465 |

| N. of  | P>4T | P:2T-4T | PT-2T | P<T | T<0 |
|--------|------|---------|-------|-----|-----|
| Months | 11   | 1       | 0     | 0   | 0   |

Latitudinal Belt...: Equatorial

Continentality.....: Hyperoceanic - High Ultrahyperoceanic

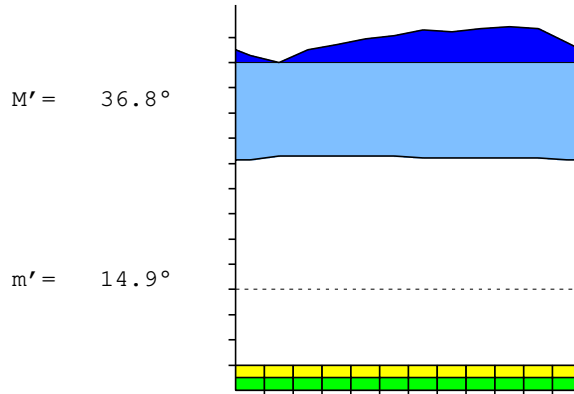
Bioclimate(Variant): TROPICAL PLUVIAL (HYGROPHYTIC)

Bioclimatic Belt...: UPPER INFRATROPICAL LOW HUMID

TEFE (BRAZIL)

47 m

P= 2465      3° 22' S      64° 42' W      22/22 y.  
 T= 26.2°      Ic= 0.8      Tp= 3146      Tn= 0  
 m= 22.3°      M= 30.7°      Itc= 792      Io= 7.8



TROPICAL PLUVIAL (HYGROPHYTIC)  
 UPPER INFRATROPICAL LOW HUMID

WATER INDEX CARD

TEFE (BRAZIL)

Altitude: 47 m.

Latitude: 3° 22' S

| (C/mm) | T    | PE   | P    | VR  | R   | RE   | DF | SP  | DR  | HC   |
|--------|------|------|------|-----|-----|------|----|-----|-----|------|
| Jul.   | 25.8 | 125  | 129  | 0   | 100 | 125  | 0  | 4   | 51  | 0.0  |
| Aug.   | 26.3 | 135  | 102  | -33 | 67  | 135  | 0  | 0   | 25  | -0.2 |
| Sep.   | 26.4 | 132  | 149  | 17  | 84  | 132  | 0  | 0   | 13  | 0.1  |
| Oct.   | 26.6 | 142  | 169  | 16  | 100 | 142  | 0  | 11  | 12  | 0.1  |
| Nov.   | 26.6 | 139  | 192  | 0   | 100 | 139  | 0  | 53  | 32  | 0.3  |
| Dec.   | 26.4 | 139  | 216  | 0   | 100 | 139  | 0  | 77  | 55  | 0.5  |
| Jan.   | 26.0 | 131  | 260  | 0   | 100 | 131  | 0  | 129 | 92  | 0.9  |
| Feb.   | 26.2 | 121  | 238  | 0   | 100 | 121  | 0  | 117 | 105 | 0.9  |
| Mar.   | 26.2 | 133  | 275  | 0   | 100 | 133  | 0  | 142 | 123 | 1.0  |
| Apr.   | 26.2 | 130  | 287  | 0   | 100 | 130  | 0  | 157 | 140 | 1.2  |
| May.   | 26.1 | 130  | 272  | 0   | 100 | 130  | 0  | 142 | 141 | 1.0  |
| Jun.   | 25.8 | 121  | 176  | 0   | 100 | 121  | 0  | 55  | 98  | 0.4  |
| Year   | 26.2 | 1578 | 2465 | *   | *   | 1578 | 0  | 887 | 887 | *    |

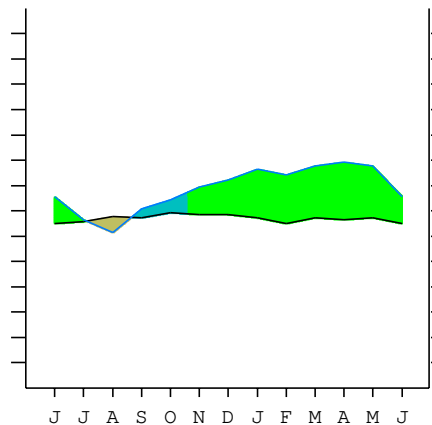
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

TEFE (BRAZIL)

3°22' S    64°42' W    47 m 22/22 y.

T= 26.2    Ic= 0.8    TROPICAL PLUVIAL (HYGROPHYTIC)  
 m= 22.3    Tp= 3146    UPPER INFRATROPICAL  
 M= 30.7    Tn= 0    LOW HUMID  
 M' = 36.8    Itc= 792  
 m' = 14.9    Io= 7.8  
 P= 2465    mm    ———  
 PE= 1578    mm    ———

|             |         |
|-------------|---------|
| Imbibing    | 20 Aug. |
| Saturation  | 18 Oct. |
| Reserve Use | 4 Jul.  |
| Deficit     |         |



TEFE (BRAZIL)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A1a]  
 + Type .....: A. Hyperoceanic  
 + Subtype .....: 1. Ultrahyperoceanic  
 + 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 [A5.1a.7b]  
 + Macrobioclimate .....: A. TROPICAL  
 + Bioclimate .....: 5. PLUVIAL  
 + Bioclimatic variant ..:  
 + Thermic type.....: 1. INFRATROPICAL  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 7. HUMID  
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification .....: Trhd.Itr.Hum

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 1088  
 Coldest semester of the year.....(Psw): 1377  
 Warmest four months period of the year.....(Pcm1): 726  
 Following warmest four months period.....(Pcm2): 1060  
 Positive precipitation dryest 3 months.....(Ppd): 380  
 Positive precipitation dryest 2 months.....(Ppd2): 231  
 Positive precipitation dryest 1 month.....(Ppd1): 102  
 Positive precipitation warmest 3 months.....(Pps): 510  
 Positive precipitation warmest 2 months.....(Pps2): 361  
 Positive precipitation warmest 1 month.....(Pps1): 169  
 Positive precipitation coldest 3 months.....(Ppw): 577  
 Positive precipitation coldest 2 months.....(Ppw2): 305  
 Positive precipitation coldest 1 month.....(Ppw1): 176

| Seasons  | Jun+Jul+Aug<br>Ttr3-3 | Sep+Oct+Nov<br>Ttr4-4 | Dec+Jan+Feb<br>Ttr1-1 | Mar+Apr+May<br>Ttr2-2 |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Rainfall | 407                   | 510                   | 714                   | 834                   |

Tropical rainfall rhythms: 2 > 1 > 4 > 3

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 26.6  
 Average coldest month [T].....(Tmin): 25.8  
 Maximum temp. warmest month [M].....(Tmmax): 32.4  
 Minimum temp. coldest month [m].....(Tmmin): 21.9  
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.8  
 Absolute Min.temp. coldest month [m'].....(Tamin): 14.9  
 First warmest contrasted month [M].....(Tcmax): 32.4 (10)  
 First coldest contrasted month [m].....(Tcmin): 22.5 (10)  
 Dry station temperature.....(Td): 785  
 Positive temperature dryest 3 months.....(Tpd): 785  
 Positive temperature dryest 2 months.....(Tpd2): 521  
 Positive temperature dryest 1 month.....(Tpd1): 263  
 Positive temperature warmest 3 months.....(Tps): 796  
 Positive temperature warmest 2 months.....(Tps2): 532  
 Positive temperature warmest 1 month.....(Tps1): 266  
 Positive temperature coldest 3 months.....(Tpw): 777  
 Positive temperature coldest 2 months.....(Tpw2): 516  
 Positive temperature coldest 1 month.....(Tpw1): 258

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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): 0.64  
 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)    | 2160         | 2600 | 2380 | 2750        | 2870 | 2720 | 1760          | 1290 | 1020 | 1490        | 1690 | 1920 |
| Tp         | 264          | 260  | 262  | 262         | 262  | 261  | 258           | 258  | 263  | 264         | 266  | 266  |
| Io (Iom)   | 8.18         | 10.0 | 9.08 | 10.5        | 11.0 | 10.4 | 6.82          | 5.00 | 3.88 | 5.64        | 6.35 | 7.22 |
| Seasons    | Dec+Jan+Feb  |      |      | Mar+Apr+May |      |      | Jun+Jul+Aug   |      |      | Sep+Oct+Nov |      |      |
| Pp(x10)/Tp | 7140 / 786   |      |      | 8340 / 785  |      |      | 4070 / 779    |      |      | 5100 / 796  |      |      |
| Io (Iot)   | 9.084        |      |      | 10.62       |      |      | 5.225         |      |      | 6.407       |      |      |
| Semesters  | December-May |      |      |             |      |      | June-November |      |      |             |      |      |
| Pp(x10)/Tp | 15480 / 1571 |      |      |             |      |      | 9170 / 1575   |      |      |             |      |      |
| Io (Iosm)  | 9.854        |      |      |             |      |      | 5.822         |      |      |             |      |      |

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 24650/3146=7.84 **There is No Yearly Aridity**

| Months          | Dec.        | Jan.   | Feb. | Mar.        | Apr. | May. | Jun.        | Jul. | Aug. | Sep.        | Oct. | Nov. |
|-----------------|-------------|--------|------|-------------|------|------|-------------|------|------|-------------|------|------|
| Pp [P*10]       | 2160        | 2600   | 2380 | 2750        | 2870 | 2720 | 1760        | 1290 | 1020 | 1490        | 1690 | 1920 |
| Tp [T*10]       | 264         | 260    | 262  | 262         | 262  | 261  | 258         | 258  | 263  | 264         | 266  | 266  |
| Iom [Pp/Tp]     | 818         | \$\$\$ | 908  | \$\$        | \$\$ | \$\$ | 682         | 500  | 388  | 564         | 635  | 722  |
| Avm [200-Iom]   | ***         | ***    | ***  | ***         | ***  | ***  | ***         | ***  | ***  | ***         | ***  | ***  |
| Seasons         | Dec+Jan+Feb |        |      | Mar+Apr+May |      |      | Jun+Jul+Aug |      |      | Sep+Oct+Nov |      |      |
| Pp / Tp         | 7140 / 786  |        |      | 8340 / 785  |      |      | 4070 / 779  |      |      | 5100 / 796  |      |      |
| Iot [Pp/Tp]     | 908         |        |      | 1062        |      |      | 522         |      |      | 641         |      |      |
| Avs E [Avm<200] | ***         |        |      | ***         |      |      | ***         |      |      | ***         |      |      |
|                 |             |        |      |             |      |      |             |      |      |             |      |      |
|                 |             |        |      |             |      |      |             |      |      |             |      |      |
|                 |             |        |      |             |      |      |             |      |      |             |      |      |
|                 |             |        |      |             |      |      |             |      |      |             |      |      |

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 0.80  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 2.76  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: -8.12  
 + Hyperoceanic (-20<CI<20)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 0.38  
 + Hyperoceanic (0<CI<0.6)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 94.02  
 + Temperate warm (100>R>60)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 68.06  
 + Perhumid (Ia>60)  
 I of Emberger (1930) [Q=100\*P/(Tmax<sup>2</sup>-Tmin<sup>2</sup>)] .....: 432.34  
 + Humid (Q>90)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 1.06  
 + Humid (2>DR>0)  
 Aridity Index of UNEP [I=P/PE] .....: 1.56  
 + Humid (I>0.65)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 33.42  
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....: A. Warm and temperate warm  
 + Region .....: 6. Termoaxeric (Axeric warm)  
 + Thermic type: 1. Megathermic

| Thornthwaite (1948)  |       |       |       |       |       |                                      |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|--------------------------------------|-------|-------|-------|-------|-------|-------|
|  | Jan.  | Feb.  | Mar.  | Apr.  | May.  | Jun.                                 | Jul.  | Aug.  | Sep.  | Oct.  | Nov.  | Dec.  |
| P-E ratio  | 1.04  | 0.94  | 1.10  | 1.16  | 1.09  | 0.68                                 | 0.48  | 0.37  | 0.56  | 0.64  | 0.73  | 0.84  |
| T-E ratio  | 11.70 | 11.79 | 11.79 | 11.79 | 11.75 | 11.61                                | 11.61 | 11.83 | 11.88 | 11.97 | 11.97 | 11.88 |
| Precipitation-effectiveness:   | 96.37 |       |       |       |       | Temperature-efficiency .....: 141.57 |       |       |       |       |       |       |
| Moisture Index [MI=100*(P-PE)/PE] .....: 56.17<br>+ B2.Humid medium-humid (40<MI<60) |       |       |       |       |       |                                      |       |       |       |       |       |       |
| Index of dryness [DI=100*d/PE] .....: 0.00<br>+ No deficit (0<DI<16.7)               |       |       |       |       |       |                                      |       |       |       |       |       |       |
| Index of humidity [HI=100*s/PE] .....: 56.17<br>+ Strong surplus (20<HI)             |       |       |       |       |       |                                      |       |       |       |       |       |       |
| Potential Evapotranspiration PE .....: 1578.39<br>+ Megathermic (PE>1440)            |       |       |       |       |       |                                      |       |       |       |       |       |       |

