

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

PASO DE INDIOS (ARGENTINA)

Altitude: 460 m.

Latitude: 43°49'S Longitude: 68°53'W

Temperature observation period.: 1971-1993 (23)

Rainfall observation period....: 1971-1993 (23)

| (C/mm) | Ti | Mi | mi | M'i | m'i | Pi | EPi |
|--------|-------|-------|-------|------|------|------|--------|
| Jan. | 18.53 | 28.26 | 9.09 | 0.00 | 0.00 | 9.9 | 114.57 |
| Feb. | 18.01 | 24.88 | 11.23 | 0.00 | 0.00 | 12.9 | 91.99 |
| Mar. | 15.13 | 18.73 | 11.58 | 0.00 | 0.00 | 11.0 | 73.96 |
| Apr. | 11.10 | 17.60 | 4.60 | 0.00 | 0.00 | 18.9 | 43.87 |
| May. | 6.88 | 11.73 | 1.98 | 0.00 | 0.00 | 23.4 | 22.31 |
| Jun. | 4.04 | 13.11 | -4.76 | 0.00 | 0.00 | 27.0 | 10.51 |
| Jul. | 4.00 | 8.38 | -0.08 | 0.00 | 0.00 | 22.8 | 11.36 |
| Aug. | 5.72 | 11.00 | 0.60 | 0.00 | 0.00 | 17.1 | 19.38 |
| Sep. | 8.71 | 12.68 | 4.22 | 0.00 | 0.00 | 16.8 | 35.30 |
| Oct. | 11.47 | 18.93 | 3.98 | 0.00 | 0.00 | 13.1 | 57.53 |
| Nov. | 14.69 | 21.38 | 7.73 | 0.00 | 0.00 | 10.6 | 82.06 |
| Dec. | 17.20 | 22.91 | 11.54 | 0.00 | 0.00 | 18.0 | 107.20 |
| Year | 11.29 | 17.47 | 5.14 | 0.00 | 0.00 | 202 | 670.03 |

BIOCLIMATIC INDICES AND DIAGNOSIS

| | |
|---|------|
| Thermicity index.....(It): | 196 |
| Compensated thermicity index.....(Itc): | 196 |
| Simple continentality index.....(Ic): | 14.5 |
| Diurnality index.....(Id): | 19.2 |
| Annual ombrothermic index.....(Io): | 1.49 |
| Monthly estival ombrothermic index.....(Ios1): | 0.54 |
| Bimonthly estival ombrothermic index.....(Ios2): | 0.62 |
| Threemonthly estival ombrothermic index.....(Ios3): | 0.76 |
| Fourmonthly estival ombrothermic index.....(Ios4): | 0.75 |
| Annual ombro-evaporation index.....(Ioe): | 0.60 |
| Annual positive temperature.....(Tp): | 1355 |
| Annual negative temperature.....(Tn): | 0 |
| Estival temperature.....(Ts): | 537 |
| Positive precipitation.....(Pp): | 202 |

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

Latitudinal Belt...: High eutemperate

Continentalty.....: Oceanic - High Euoceanic

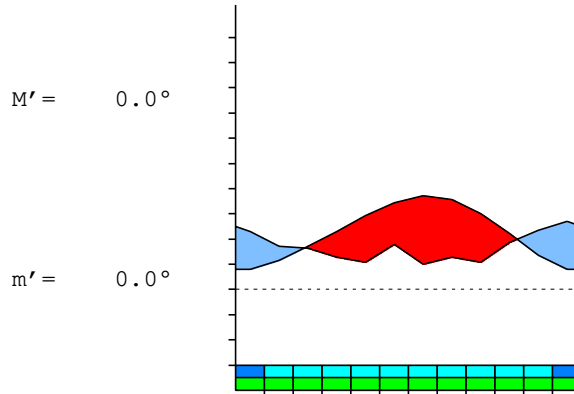
Bioclimate.....: MEDITERRANEAN XERIC-OCEANIC

Bioclimatic Belt...: LOW SUPRAMEDITERRANEAN LOW SEMIARID

PASO DE INDIOS (ARGENTINA)

460 m

P= 202 43° 49'S 68° 53'W 23/23 y.
 T= 11.3° Ic= 14.5 Tp= 1355 Tn= 0
 m= -0.1° M= 8.4° Itc= 196 Io= 1.5



MEDITERRANEAN XERIC-OCEANIC
 LOW SUPRAMEDITERRANEAN LOW SEMIARID

WATER INDEX CARD PASO DE INDIOS (ARGENTINA)
 Altitude: 460 m. Latitude: 43° 49'S

| (C/mm) | T | PE | P | VR | R | RE | DF | SP | DR | HC |
|--------|------|-----|-----|-----|----|-----|-----|----|----|------|
| Jul. | 4.0 | 11 | 23 | 11 | 29 | 11 | 0 | 0 | 0 | 1.0 |
| Aug. | 5.7 | 19 | 17 | -2 | 27 | 19 | 0 | 0 | 0 | -0.1 |
| Sep. | 8.7 | 35 | 17 | -19 | 8 | 35 | 0 | 0 | 0 | -0.5 |
| Oct. | 11.5 | 58 | 13 | -8 | 0 | 21 | 36 | 0 | 0 | -0.7 |
| Nov. | 14.7 | 82 | 11 | 0 | 0 | 11 | 71 | 0 | 0 | -0.8 |
| Dec. | 17.2 | 107 | 18 | 0 | 0 | 18 | 89 | 0 | 0 | -0.8 |
| Jan. | 18.5 | 115 | 10 | 0 | 0 | 10 | 105 | 0 | 0 | -0.9 |
| Feb. | 18.0 | 92 | 13 | 0 | 0 | 13 | 79 | 0 | 0 | -0.8 |
| Mar. | 15.1 | 74 | 11 | 0 | 0 | 11 | 63 | 0 | 0 | -0.8 |
| Apr. | 11.1 | 44 | 19 | 0 | 0 | 19 | 25 | 0 | 0 | -0.5 |
| May. | 6.9 | 22 | 23 | 1 | 1 | 22 | 0 | 0 | 0 | 0.0 |
| Jun. | 4.0 | 11 | 27 | 17 | 18 | 11 | 0 | 0 | 0 | 1.5 |
| Year | 11.3 | 670 | 202 | * | * | 202 | 469 | 0 | 0 | * |

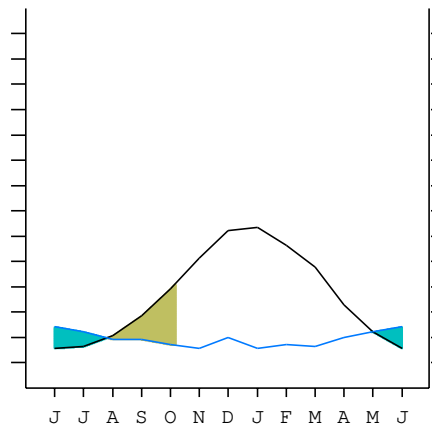
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

PASO DE INDIOS (ARGENTINA)

43°49'S 68°53'W 460 m 23/23 y.

T= 11.3 Ic= 14.5 MEDITERRANEAN XERIC-OCEANIC
 m= -0.1 Tp= 1355 LOW SUPRAMEDITERRANEAN
 M= 8.4 Tn= 0 LOW SEMIARID
 M' = 0.0 Itc= 196
 m' = 0.0 Io= 1.5
 P= 202 mm ———
 PE= 670 mm ———

| | |
|-------------|---------|
| Imbibing | 29 Apr. |
| Saturation | 26 Jul. |
| Reserve Use | 6 Oct. |
| Deficit | |



PASO DE INDIOS (ARGENTINA)

Latitude: 43°49'S Longitude: 68°53'W Altitude: 460 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2a]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: a. High
 Thermic types [B1.B4]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. High eutemperate
 + Thermic type: B. Temperate
 + Thermic subtype: 4. Temperate
 Bioclimatic types [B6.4b.4b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 6. XERIC-OCEANIC
 + Bioclimatic variant ..:
 + Thermic type.....: 4. SUPRAMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 4. SEMIARID
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: MepDC.Sme.Sar

PASO DE INDIOS (ARGENTINA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 76
 Coldest semester of the year.....(Psw): 126
 Warmest four months period of the year.....(Pcm1): 52
 Following warmest four months period.....(Pcm2): 92
 Positive precipitation dryest 3 months.....(Ppd): 34
 Positive precipitation dryest 2 months.....(Ppd2): 23
 Positive precipitation dryest 1 month.....(Ppd1): 10
 Positive precipitation warmest 3 months.....(Pps): 41
 Positive precipitation warmest 2 months.....(Pps2): 23
 Positive precipitation warmest 1 month.....(Pps1): 10
 Positive precipitation coldest 3 months.....(Ppw): 67
 Positive precipitation coldest 2 months.....(Ppw2): 50
 Positive precipitation coldest 1 month.....(Ppw1): 23

| Seasons | Winter Tr1-W | Spring Tr2-P | Summer Tr3-S | Automn Tr4-F |
|----------|-----------------|-----------------|-----------------|-----------------|
| Rainfall | 66 | 40 | 40 | 53 |

Seasonal rainfall rhythms: W > F > P > S

PASO DE INDIOS (ARGENTINA)

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 18.5
 Average coldest month [T].....(Tmin): 4.0
 Maximum temp. warmest month [M].....(Tmmax): 28.3
 Minimum temp. coldest month [m].....(Tmmin): -4.8
 Absolute Max.temp. warmest month [M'].....(Tamax): 0.0
 Absolute Min.temp. coldest month [m'].....(Tamin): 0.0
 First warmest contrasted month [M].....(Tcmax): 28.3 (1)
 First coldest contrasted month [m].....(Tcmin): 9.1 (1)
 Estival temperature.....(Ts): 537
 Positive temperature dryest 3 months.....(Tpd): 517
 Positive temperature dryest 2 months.....(Tpd2): 365
 Positive temperature dryest 1 month.....(Tpd1): 185
 Positive temperature warmest 3 months.....(Tps): 537
 Positive temperature warmest 2 months.....(Tps2): 365
 Positive temperature warmest 1 month.....(Tps1): 185
 Positive temperature coldest 3 months.....(Tpw): 138
 Positive temperature coldest 2 months.....(Tpw2): 80
 Positive temperature coldest 1 month.....(Tpw1): 40

PASO DE INDIOS (ARGENTINA)

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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) | | | | | | o | o | | | | | |
| Pregelid.....[m' <=0] (Pf) | | | | | | | | | | | | |
| Agelid.....[m' > 0] (Pf) | | | | | | | | | | | | |
| HiperAgelid..[all>0] (Pf) | o | o | o | o | o | | | o | o | o | o | o |

PASO DE INDIOS (ARGENTINA)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 3.33
 Mediterranean index of January.....(Im1): 11.51
 Mediterranean index of January & February.....(Im2): 9.06
 Mediterranean index of December to February...(Im3): 7.69

| Months | Dec. | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. |
|------------|--------------|------|------|-----------|------|------|---------------|------|------|-----------|------|------|
| Pp(x10) | 180 | 100 | 129 | 110 | 189 | 234 | 270 | 228 | 171 | 168 | 131 | 106 |
| Tp | 172 | 185 | 180 | 151 | 111 | 69 | 40 | 40 | 57 | 87 | 115 | 147 |
| Io (Iom) | 1.05 | 0.54 | 0.71 | 0.73 | 1.70 | 3.40 | 6.69 | 5.70 | 3.00 | 1.93 | 1.14 | 0.72 |
| Seasons | Summer | | | Autumn | | | Winter | | | Spring | | |
| Pp(x10)/Tp | 408 / 537 | | | 533 / 331 | | | 670 / 138 | | | 405 / 349 | | |
| Io (Iot) | 0.759 | | | 1.608 | | | 4.868 | | | 1.160 | | |
| Semesters | December-May | | | | | | June-November | | | | | |
| Pp(x10)/Tp | 941 / 869 | | | | | | 1074 / 486 | | | | | |
| Io (Iosm) | 1.083 | | | | | | 2.209 | | | | | |

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 2015/1355=1.49 **There is No Yearly Aridity**

| Months | Dec. | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. |
|---------------------------|-----------|------|------|-----------|------|-------------------------|-----------|------|------|-----------|------|------|
| Pp [P*10] | 180 | 100 | 129 | 110 | 189 | 234 | 270 | 228 | 171 | 168 | 131 | 106 |
| Tp [T*10] | 172 | 185 | 180 | 151 | 111 | 69 | 40 | 40 | 57 | 87 | 115 | 147 |
| Iom [Pp/Tp] | 105 | 54 | 71 | 73 | 170 | 340 | 669 | 570 | 300 | 193 | 114 | 72 |
| Avm [200-Iom] | 95 | 146 | 129 | 127 | 30 | *** | *** | *** | *** | 7 | 86 | 128 |
| Seasons | Summer | | | Autumn | | | Winter | | | Spring | | |
| Pp / Tp | 408 / 537 | | | 533 / 331 | | | 670 / 138 | | | 405 / 349 | | |
| Iot [Pp/Tp] | 76 | | | 161 | | | 487 | | | 116 | | |
| Avs E[Avm<200] | 370 | | | *** | | | *** | | | 221 | | |
| Weak lower arid [1] | | | | | | Strong upper arid [4] | | | | | | |
| Strong lower semiarid [2] | | | | | | Weak lower semiarid [1] | | | | | | |
| Strong upper semiarid [1] | | | | | | Weak upper semiarid [1] | | | | | | |

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BIOCLIMATIC INDICES I

| | | |
|--|-------|-------|
| CI of Supan (1884) [Tmax-Tmin] | (Sp): | 14.53 |
| CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] | | 15.28 |
| CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] | | 16.60 |
| + Hyperoceanic (-20<CI<20) | | |
| CI of Currey (1974) [CI=Sp/(1+Lat/3)] | | 0.93 |
| + Oceanic (0.6<CI<1.1) | | |
| Rainfall Index of Lang (1925) [R=P/T] | | 17.85 |
| + Steppic (40>R>0) | | |
| Aridity Index of Martonne (1926) [Ia=P/(T+10)] | | 9.46 |
| + Arid -steppic- (15>Ia>5) | | |
| I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)] | | 25.97 |
| + Arid (30>Q>0) | | |
| I of Dantin & Revenga (1940) [DR=100*T/P] | | 5.60 |
| + Arid (6>DR>3) | | |
| Aridity Index of UNEP [I=P/PE] | | 0.30 |
| + Semiarid (0.5>Im>0.2) | | |
| Potential Erosion I of Fournier (1960) [K=Pi ² /P] | | 3.63 |
| + Very low (K<60) | | |

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 4. Mesothermic

| Thornthwaite (1948) | | | | | | | | | | | | |
|---|------|------|------|------|------|------------------------------|------|------|------|------|------|--------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| P-E ratio | 0.03 | 0.04 | 0.04 | 0.08 | 0.12 | 0.16 | 0.13 | 0.09 | 0.08 | 0.06 | 0.04 | 0.07 |
| T-E ratio | 8.34 | 8.10 | 6.81 | 5.00 | 3.10 | 1.82 | 1.80 | 2.57 | 3.92 | 5.16 | 6.61 | 7.74 |
| Precipitation-effectiveness: 9.58 | | | | | | Temperature-efficiency | | | | | | 60.97 |
| Moisture Index [MI=100*(P-PE)/PE] | | | | | | | | | | | | -69.93 |
| + E.Dry (-110<MI<-66.7) | | | | | | | | | | | | |
| Index of dryness [DI=100*d/PE] | | | | | | | | | | | | 69.92 |
| + Strong deficit (33.3<DI) | | | | | | | | | | | | |
| Index of humidity [HI=100*s/PE] | | | | | | | | | | | | 0.00 |
| + No surplus (0<HI<10) | | | | | | | | | | | | |
| Potential Evapotranspiration PE | | | | | | | | | | | | 670.03 |
| + First mesothermic (570<PE<712) | | | | | | | | | | | | |

