

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

GENERAL VILLEGAS (ARGENTINA)

Altitude: 117 m.

Latitude: 35°1'S Longitude: 63°1'W

Temperature observation period.: 1941-1950 (10)

Rainfall observation period....: 1941-1950 (10)

| (C/mm) | Ti | Mi | mi | M'i | m'i | Pi | EPI |
|--------|-------|-------|-------|-------|--------|-------|--------|
| Jan. | 24.90 | 32.70 | 15.90 | 42.60 | 5.10 | 66.0 | 148.97 |
| Feb. | 23.80 | 31.60 | 15.30 | 42.60 | 4.80 | 96.0 | 117.77 |
| Mar. | 19.00 | 26.50 | 12.40 | 35.60 | 0.00 | 129.0 | 81.09 |
| Apr. | 15.80 | 23.20 | 9.20 | 34.00 | -2.00 | 65.0 | 52.56 |
| May. | 11.90 | 19.20 | 6.20 | 31.60 | -5.00 | 40.0 | 30.75 |
| Jun. | 8.50 | 15.50 | 3.00 | 26.00 | -10.00 | 23.0 | 15.99 |
| Jul. | 8.20 | 15.40 | 2.30 | 28.00 | -11.00 | 28.0 | 15.96 |
| Aug. | 9.50 | 17.20 | 3.40 | 33.40 | -9.20 | 20.0 | 22.15 |
| Sep. | 12.90 | 20.80 | 5.90 | 37.40 | -3.00 | 36.0 | 39.62 |
| Oct. | 16.40 | 24.30 | 8.90 | 35.20 | -3.00 | 68.0 | 67.32 |
| Nov. | 21.00 | 29.00 | 11.40 | 38.80 | -1.00 | 55.0 | 106.09 |
| Dec. | 23.90 | 32.10 | 14.80 | 41.40 | 0.00 | 78.0 | 141.21 |
| Year | 16.32 | 23.96 | 9.06 | 35.55 | -2.86 | 704 | 839.48 |

BIOCLIMATIC INDICES AND DIAGNOSIS

| | |
|---|------|
| Thermicity index.....(It): | 340 |
| Compensated thermicity index.....(Itc): | 340 |
| Simple continentality index.....(Ic): | 16.7 |
| Diurnality index.....(Id): | 17.6 |
| Annual ombrothermic index.....(Io): | 3.60 |
| Monthly estival ombrothermic index.....(Ios1): | 2.65 |
| Bimonthly estival ombrothermic index.....(Ios2): | 3.33 |
| Threemonthly estival ombrothermic index.....(Ios3): | 3.31 |
| Fourmonthly estival ombrothermic index.....(Ios4): | 3.15 |
| Annual ombro-evaporation index.....(Ioe): | 0.84 |
| Annual positive temperature.....(Tp): | 1958 |
| Annual negative temperature.....(Tn): | 0 |
| Estival temperature.....(Ts): | 726 |
| Positive precipitation.....(Pp): | 704 |

| N. of Months | P>4T | P:2T-4T | PT-2T | P<T | T<0 |
|--------------|------|---------|-------|-----|-----|
| | 4 | 8 | 0 | 0 | 0 |

Latitudinal Belt...: Subtropical

Continentality.....: Oceanic - Low Eucceanic

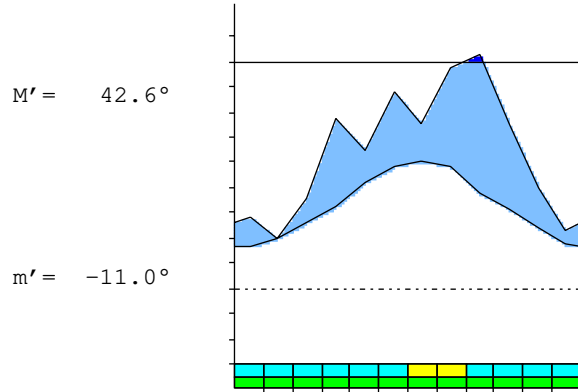
Bioclimate(Variant): TEMPERATE XERIC (SUBMEDITERRANEAN)

Bioclimatic Belt...: UPPER THERMOTEMPERATE UPPER DRY

GENERAL VILLEGAS (ARGENTINA)

117 m

P= 704 35° 1'S 63° 1'W 10/10 y.
 T= 16.3 ° Ic= 16.7 Tp= 1958 Tn= 0
 m= 2.3 ° M= 15.4 ° Itc= 340 Io= 3.6



TEMPERATE XERIC (SUBMEDITERRANEAN)
 UPPER THERMOTEMPERATE UPPER DRY

WATER INDEX CARD GENERAL VILLEGAS (ARGENTINA)
 Altitude: 117 m. Latitude: 35° 1'S

| (C/mm) | T | PE | P | VR | R | RE | DF | SP | DR | HC |
|--------|------|-----|-----|-----|----|-----|-----|----|----|------|
| Jul. | 8.2 | 16 | 28 | 12 | 89 | 16 | 0 | 0 | 0 | 0.7 |
| Aug. | 9.5 | 22 | 20 | -2 | 86 | 22 | 0 | 0 | 0 | 0.0 |
| Sep. | 12.9 | 40 | 36 | -4 | 83 | 40 | 0 | 0 | 0 | 0.0 |
| Oct. | 16.4 | 67 | 68 | 1 | 84 | 67 | 0 | 0 | 0 | 0.0 |
| Nov. | 21.0 | 106 | 55 | -51 | 32 | 106 | 0 | 0 | 0 | -0.4 |
| Dec. | 23.9 | 141 | 78 | -32 | 0 | 110 | 31 | 0 | 0 | -0.4 |
| Jan. | 24.9 | 149 | 66 | 0 | 0 | 66 | 83 | 0 | 0 | -0.5 |
| Feb. | 23.8 | 118 | 96 | 0 | 0 | 96 | 22 | 0 | 0 | -0.1 |
| Mar. | 19.0 | 81 | 129 | 48 | 48 | 81 | 0 | 0 | 0 | 0.5 |
| Apr. | 15.8 | 53 | 65 | 12 | 60 | 53 | 0 | 0 | 0 | 0.2 |
| May. | 11.9 | 31 | 40 | 9 | 70 | 31 | 0 | 0 | 0 | 0.3 |
| Jun. | 8.5 | 16 | 23 | 7 | 77 | 16 | 0 | 0 | 0 | 0.4 |
| Year | 16.3 | 839 | 704 | * | * | 704 | 135 | 0 | 0 | * |

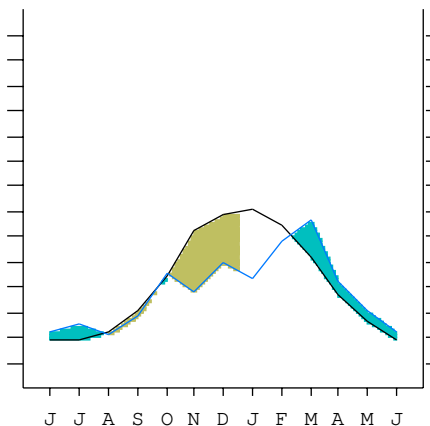
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

GENERAL VILLEGAS (ARGENTINA)

35°1'S 63°1'W 117 m 10/10 y.

T= 16.3 Ic= 16.7 TEMPERATE XERIC (SUBMEDITERRANEAN)
 m= 2.3 Tp= 1958 UPPER THERMOTEMPERATE
 M= 15.4 Tn= 0 UPPER DRY
 M' = 42.6 Itc= 340
 m' = -11.0 Io= 3.6
 P= 704 mm ———
 PE= 839 mm ———

| | |
|-------------|---------|
| Imbibing | 10 Feb. |
| Saturation | |
| Reserve Use | 1 Oct. |
| Deficit | 16 Dec. |



GENERAL VILLEGAS (ARGENTINA)

Latitude: 35°1'S Longitude: 63°1'W Altitude: 117 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B2b]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: b. Low
 Thermic types [B1.A3]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Subtropical
 + Thermic type: A. Warm
 + Thermic subtype: 3. Subwarm
 Bioclimatic types [C1b.2a.5a]
 + Macrobioclimate: C. TEMPERATE
 + Bioclimate: 1. XERIC
 + Bioclimatic variant .: SUBMEDITERRANEAN
 + Thermic type.....: 2. THERMOTEMPERATE
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : a. UPPER
 Bioclimatic ClassificationTexe (Sbm) .Tte.Dry.Euo

GENERAL VILLEGAS (ARGENTINA)

Latitude: 35°1'S Longitude: 63°1'W Altitude: 117 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 492
 Coldest semester of the year.....(Psw): 212
 Warmest four months period of the year.....(Pcm1): 295
 Following warmest four months period.....(Pcm2): 257
 Positive precipitation dryest 3 months.....(Ppd): 71
 Positive precipitation dryest 2 months.....(Ppd2): 48
 Positive precipitation dryest 1 month.....(Ppd1): 20
 Positive precipitation warmest 3 months.....(Pps): 240
 Positive precipitation warmest 2 months.....(Pps2): 144
 Positive precipitation warmest 1 month.....(Pps1): 66
 Positive precipitation coldest 3 months.....(Ppw): 71
 Positive precipitation coldest 2 months.....(Ppw2): 51
 Positive precipitation coldest 1 month.....(Ppw1): 28

| Seasons | Winter Tr1-W | Spring Tr2-P | Summer Tr3-S | Automn Tr4-F |
|----------|-----------------|-----------------|-----------------|-----------------|
| Rainfall | 71 | 159 | 240 | 234 |

Seasonal rainfall rhythms: S > F > P > W

GENERAL VILLEGAS (ARGENTINA)

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 24.9
 Average coldest month [T].....(Tmin): 8.2
 Maximum temp. warmest month [M].....(Tmax): 32.7
 Minimum temp. coldest month [m].....(Tmin): 2.3
 Absolute Max.temp. warmest month [M'].....(Tamax): 42.6
 Absolute Min.temp. coldest month [m'].....(Tamin): -11.0
 First warmest contrasted month [M].....(Tcmax): 29.0 (11)
 First coldest contrasted month [m].....(Tcmin): 11.4 (11)
 Estival temperature.....(Ts): 726
 Positive temperature dryest 3 months.....(Tpd): 262
 Positive temperature dryest 2 months.....(Tpd2): 177
 Positive temperature dryest 1 month.....(Tpd1): 95
 Positive temperature warmest 3 months.....(Tps): 726
 Positive temperature warmest 2 months.....(Tps2): 488
 Positive temperature warmest 1 month.....(Tps1): 249
 Positive temperature coldest 3 months.....(Tpw): 262
 Positive temperature coldest 2 months.....(Tpw2): 167
 Positive temperature coldest 1 month.....(Tpw1): 82

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

GENERAL VILLEGAS (ARGENTINA)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.19
 Mediterranean index of January.....(Im1): 2.26
 Mediterranean index of January & February....(Im2): 1.65
 Mediterranean index of December to February...(Im3): 1.70

| Months | Dec. | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. |
|------------|--------------|------|------|------------|------|------|---------------|------|------|------------|------|------|
| Pp(x10) | 780 | 660 | 960 | 1290 | 650 | 400 | 230 | 280 | 200 | 360 | 680 | 550 |
| Tp | 239 | 249 | 238 | 190 | 158 | 119 | 85 | 82 | 95 | 129 | 164 | 210 |
| Io (Iom) | 3.26 | 2.65 | 4.03 | 6.79 | 4.11 | 3.36 | 2.71 | 3.41 | 2.11 | 2.79 | 4.15 | 2.62 |
| Seasons | Summer | | | Autumn | | | Winter | | | Spring | | |
| Pp(x10)/Tp | 2400 / 726 | | | 2340 / 467 | | | 710 / 262 | | | 1590 / 503 | | |
| Io (Iot) | 3.306 | | | 5.011 | | | 2.710 | | | 3.161 | | |
| Semesters | December-May | | | | | | June-November | | | | | |
| Pp(x10)/Tp | 4740 / 1193 | | | | | | 2300 / 765 | | | | | |
| Io (Iosm) | 3.973 | | | | | | 3.007 | | | | | |

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 7040/1958=3.60 There is No Yearly Aridity

| Months | Dec. | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. |
|-----------------|------------|------|------|------------|------|------|-----------|------|------|------------|------|------|
| Pp [P*10] | 780 | 660 | 960 | 1290 | 650 | 400 | 230 | 280 | 200 | 360 | 680 | 550 |
| Tp [T*10] | 239 | 249 | 238 | 190 | 158 | 119 | 85 | 82 | 95 | 129 | 164 | 210 |
| Iom [Pp/Tp] | 326 | 265 | 403 | 679 | 411 | 336 | 271 | 341 | 211 | 279 | 415 | 262 |
| Avm [200-Iom] | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** |
| Seasons | Summer | | | Autumn | | | Winter | | | Spring | | |
| Pp / Tp | 2400 / 726 | | | 2340 / 467 | | | 710 / 262 | | | 1590 / 503 | | |
| Iot [Pp/Tp] | 331 | | | 501 | | | 271 | | | 316 | | |
| Avs E [Avm<200] | *** | | | *** | | | *** | | | *** | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

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BIOCLIMATIC INDICES I

| | |
|--|-------------|
| CI of Supan (1884) [Tmax-Tmin] | (Sp): 16.70 |
| CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] | 29.08 |
| CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] | 26.14 |
| + Oceanic (20<CI<40) | |
| CI of Currey (1974) [CI=Sp/(1+Lat/3)] | 1.32 |
| + Subcontinental (1.1<CI<1.7) | |
| Rainfall Index of Lang (1925) [R=P/T] | 43.15 |
| + Semiarid (60>R>40) | |
| Aridity Index of Martonne (1926) [Ia=P/(T+10)] | 26.75 |
| + Subhumid (30>Ia>20) | |
| I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)] | 66.17 |
| + Subhumid (90>Q>50) | |
| I of Dantin & Revenga (1940) [DR=100*T/P] | 2.32 |
| + Semiarid (3>DR>2) | |
| Aridity Index of UNEP [I=P/PE] | 0.84 |
| + Humid (I>0.65) | |
| Potencial Erosion I of Fournier (1960) [K=Pi ² /P]..... | 23.64 |
| + Very low (K<60) | |

GENERAL VILLEGAS (ARGENTINA)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate A. Warm and temperate warm
 + Region 7. Mesoaxeric (Axeric temperate)
 + Thermic type: 3. Macro-mesothermic

| Thornthwaite (1948) | | | | | | | | | | | | |
|---|-------|-------|------|------|------|-------------------------------------|------|------|------|------|------|-------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| P-E ratio | 0.23 | 0.36 | 0.57 | 0.29 | 0.19 | 0.11 | 0.14 | 0.09 | 0.16 | 0.30 | 0.21 | 0.29 |
| T-E ratio | 11.20 | 10.71 | 8.55 | 7.11 | 5.35 | 3.82 | 3.69 | 4.27 | 5.80 | 7.38 | 9.45 | 10.75 |
| Precipitation-effectiveness: 29.53 | | | | | | Temperature-efficiency: 88.11 | | | | | | |
| Moisture Index [MI=100*(P-PE)/PE] | | | | | | | | | | | | |
| + C1. Subhumid dry (-33.3<MI<0) | | | | | | | | | | | | |
| Index of dryness [DI=100*d/PE] | | | | | | | | | | | | |
| + No deficit (0<DI<16.7) | | | | | | | | | | | | |
| Index of humidity [HI=100*s/PE] | | | | | | | | | | | | |
| + No surplus (0<HI<10) | | | | | | | | | | | | |
| Potential Evapotranspiration PE | | | | | | | | | | | | |
| + Second mesothermic (712<PE<855) | | | | | | | | | | | | |

