

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

S.Rivas-Martinez(+) & S.Rivas-Saenz

(Adapted to Synoptical Table 14/02/2020)

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):	0.30
Annual positive temperature.....(Tp):	1355
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	537
Positive precipitation.....(Pp):	202

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

Latitudinal Belt...: High Eutemperate

Continentality.....: Oceanic - High Euoceanic

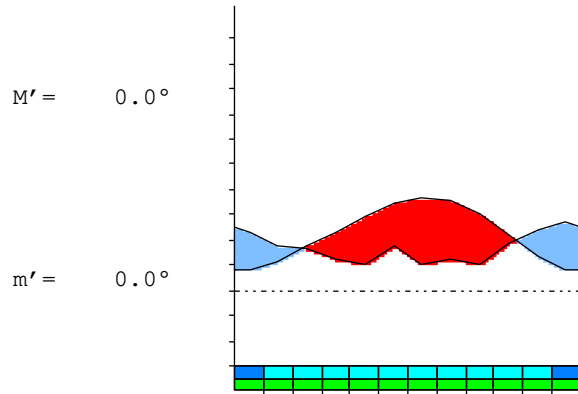
Bioclimate.....: MEDITERRANEAN XERIC-OCEANIC

Bioclimatic Belt...: LOW SUPRAMEEDITERRANEAN 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	*

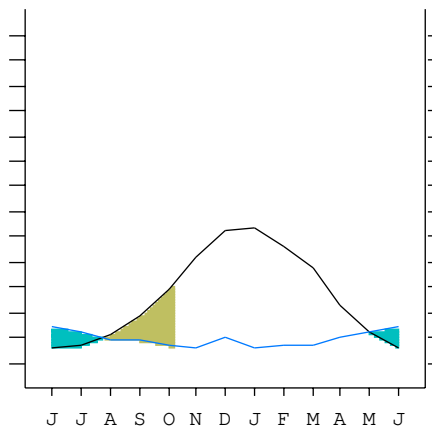
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coeficient DF = Deficit SP = Superavit

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)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality 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 ClassificationMexo.Sme.Sar.Euo

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

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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

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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/(Tmmax ² -Tmmin 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)	
Potencial 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 A. Warm and temperate warm
 + Region 3. Termoxeroteric (Mediterranean warm)
 + 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]												
+ E.Dry (-110<MI<-66.7)												
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												
+ First mesothermic (570<PE<712)												

