

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

PLAZA HUINCUL (ARGENTINA)

Altitude: 548 m.

Latitude: 38°54'S Longitude: 69°12'W

Temperature observation period.: 1984-1994 (11)

Rainfall observation period....: 1984-1994 (11)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	23.06	31.11	15.00	38.89	3.89	20.3	138.72
Feb.	21.39	28.89	13.89	38.89	5.00	6.6	105.52
Mar.	18.06	25.00	11.11	33.89	1.11	9.7	82.36
Apr.	13.61	20.00	7.22	32.22	-2.22	11.7	47.31
May.	9.45	15.00	3.89	26.11	-5.00	22.6	25.94
Jun.	7.22	12.22	2.22	25.00	-7.78	9.1	15.88
Jul.	5.56	11.11	0.00	25.00	-11.11	11.7	11.66
Aug.	6.94	12.78	1.11	26.11	-8.89	12.7	17.64
Sep.	10.56	17.22	3.89	28.89	-5.00	9.4	35.08
Oct.	14.72	22.22	7.22	32.22	-1.11	8.1	65.61
Nov.	18.06	26.11	10.00	36.11	0.00	3.3	91.60
Dec.	20.84	28.89	12.78	37.78	2.78	6.9	121.51
Year	14.12	20.88	7.36	31.76	-2.36	132	758.83

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	252
Compensated thermicity index.....(Itc):	252
Simple continentality index.....(Ic):	17.5
Diurnality index.....(Id):	16.1
Annual ombrothermic index.....(Io):	0.78
Monthly estival ombrothermic index.....(Ios1):	0.31
Bimonthly estival ombrothermic index.....(Ios2):	0.61
Threemonthly estival ombrothermic index.....(Ios3):	0.52
Fourmonthly estival ombrothermic index.....(Ios4):	0.45
Annual ombro-evaporation index.....(Ioe):	0.17
Annual positive temperature.....(Tp):	1695
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	653
Positive precipitation.....(Pp):	132

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

Latitudinal Belt...: Low Eutemperate

Continentality.....: Oceanic - Low Semicontinental

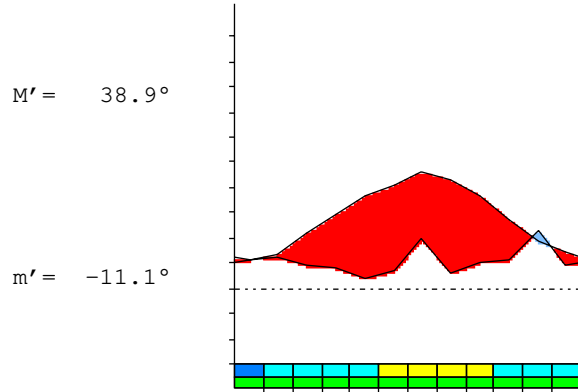
Bioclimate(Variant): MEDITERRANEAN DESERTIC-OCEANIC (STEPPIC)

Bioclimatic Belt...: UPPER MESOMEDITERRANEAN UPPER ARID

PLAZA HUINCUL (ARGENTINA)

548 m

P= 132 38° 54'S 69° 12'W 11/11 y.
 T= 14.1 ° Ic= 17.5 Tp= 1695 Tn= 0
 m= 0.0 ° M= 11.1 ° Itc= 252 Io= 0.8



MEDITERRANEAN DESERTIC-OCEANIC (STEPPIC)
 UPPER MESOMEDITERRANEAN UPPER ARID

WATER INDEX CARD PLAZA HUINCUL (ARGENTINA)
 Altitude: 548 m. Latitude: 38° 54'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	5.6	12	12	0	0	12	0	0	0	0.0
Aug.	6.9	18	13	0	0	13	5	0	0	-0.2
Sep.	10.6	35	9	0	0	9	26	0	0	-0.7
Oct.	14.7	66	8	0	0	8	58	0	0	-0.8
Nov.	18.1	92	3	0	0	3	88	0	0	-0.9
Dec.	20.8	122	7	0	0	7	115	0	0	-0.9
Jan.	23.1	139	20	0	0	20	118	0	0	-0.8
Feb.	21.4	106	7	0	0	7	99	0	0	-0.9
Mar.	18.1	82	10	0	0	10	73	0	0	-0.8
Apr.	13.6	47	12	0	0	12	36	0	0	-0.7
May.	9.4	26	23	0	0	23	3	0	0	-0.1
Jun.	7.2	16	9	0	0	9	7	0	0	-0.4
Year	14.1	759	132	*	*	132	627	0	0	*

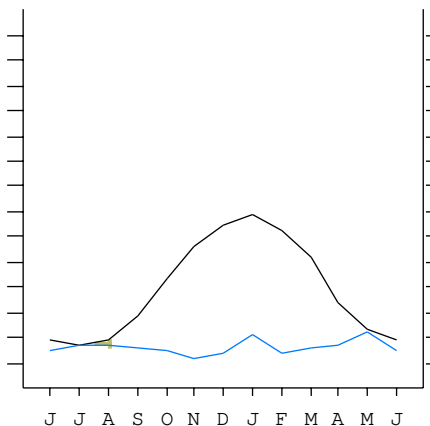
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

PLAZA HUINCUL (ARGENTINA)

38°54'S 69°12'W 548 m 11/11 y.

T= 14.1 Ic= 17.5 MEDITERRANEAN DESERTIC-OCEANIC (STEPPIC)
 m= 0.0 Tp= 1695 UPPER MESOMEDITERRANEAN
 M= 11.1 Tn= 0 UPPER ARID
 M' = 38.9 Itc= 252
 m' = -11.1 Io= 0.8
 P= 132 mm ———
 PE= 759 mm ———

Imbibing	30 Jun.
Saturation	1 Jul.
Reserve Use	1 Aug.
Deficit	



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B1a]
 + Type: B. Oceanic
 + Subtype: 1. Semicontinental
 + Variant: a. Low
 Thermic types [B1.B4]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Low Eutemperate
 + Thermic type: B. Temperate
 + Thermic subtype: 4. Temperate
 Bioclimatic types [B4a.3a.3a]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 4. DESERTIC-OCEANIC
 + Bioclimatic variant .: STEPPIC
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 3. ARID
 + Ombrothermic subtype : a. UPPER
 Bioclimatic ClassificationMedo(Stp).Mme.Ari.Sec

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 55
 Coldest semester of the year.....(Psw): 77
 Warmest four months period of the year.....(Pcm1): 37
 Following warmest four months period.....(Pcm2): 53
 Positive precipitation dryest 3 months.....(Ppd): 18
 Positive precipitation dryest 2 months.....(Ppd2): 10
 Positive precipitation dryest 1 month.....(Ppd1): 3
 Positive precipitation warmest 3 months.....(Pps): 34
 Positive precipitation warmest 2 months.....(Pps2): 27
 Positive precipitation warmest 1 month.....(Pps1): 20
 Positive precipitation coldest 3 months.....(Ppw): 34
 Positive precipitation coldest 2 months.....(Ppw2): 24
 Positive precipitation coldest 1 month.....(Ppw1): 12

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	33	20	33	44

Seasonal rainfall rhythms: F > S > W > P

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 23.1
 Average coldest month [T].....(Tmin): 5.6
 Maximum temp. warmest month [M].....(Tmmax): 31.1
 Minimum temp. coldest month [m].....(Tmmin): 0.0
 Absolute Max.temp. warmest month [M'].....(Tamax): 38.9
 Absolute Min.temp. coldest month [m'].....(Tamin): -11.1
 First warmest contrasted month [M].....(Tcmax): 31.1 (1)
 First coldest contrasted month [m].....(Tcmin): 15.0 (1)
 Estival temperature.....(Ts): 653
 Positive temperature dryest 3 months.....(Tpd): 536
 Positive temperature dryest 2 months.....(Tpd2): 389
 Positive temperature dryest 1 month.....(Tpd1): 181
 Positive temperature warmest 3 months.....(Tps): 653
 Positive temperature warmest 2 months.....(Tps2): 445
 Positive temperature warmest 1 month.....(Tps1): 231
 Positive temperature coldest 3 months.....(Tpw): 197
 Positive temperature coldest 2 months.....(Tpw2): 125
 Positive temperature coldest 1 month.....(Tpw1): 56

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 5.74
 Mediterranean index of January.....(Im1): 6.83
 Mediterranean index of January & February....(Im2): 9.08
 Mediterranean index of December to February...(Im3): 10.82

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	69	203	66	97	117	226	91	117	127	94	81	33
Tp	208	231	214	181	136	95	72	56	69	106	147	181
Io (Iom)	0.33	0.88	0.31	0.54	0.86	2.39	1.26	2.10	1.83	0.89	0.55	0.18
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	338 / 653			440 / 411			335 / 197			208 / 433		
Io (Iot)	0.518			1.070			1.699			0.480		
Semesters	December-May						June-November					
Pp(x10)/Tp	778 / 1064						543 / 631					
Io (Iosm)	0.731						0.861					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 1321/1695=0.78 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	69	203	66	97	117	226	91	117	127	94	81	33
Tp [T*10]	208	231	214	181	136	95	72	56	69	106	147	181
Iom [Pp/Tp]	33	88	31	54	86	239	126	210	183	89	55	18
Avm [200-Iom]	167	112	169	146	114	***	74	***	17	111	145	182
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	338 / 653			440 / 411			335 / 197			208 / 433		
Iot [Pp/Tp]	52			107			170			48		
Avs E[Avm<200]	448			***			***			438		
Upper ultrahyperarid [1]							Upper hyperarid [2]					
Weak lower arid [4]							Weak upper arid [3]					
Weak lower semiarid [1]							Weak upper semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 17.50
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	26.98
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	25.48
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.25
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	9.35
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	5.48
+ Arid -steppic- (15>Ia>5)	
I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)]	13.65
+ Arid (30>Q>0)	
I of Dantin & Revenga (1940) [DR=100*T/P]	10.69
+ Extremely arid (DR>6)	
Aridity Index of UNEP [I=P/PE]	0.17
+ Arid (0.2>Im>0.05)	
Potencial Erosion I of Fournier (1960) [K=Pi ² /P].....	3.87
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: A. Warm and temperate warm
 + Region: 5. Bixeric (Bixeric)
 + Thermic type: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.07	0.02	0.03	0.05	0.11	0.04	0.06	0.06	0.04	0.03	0.01	0.02
T-E ratio	10.38	9.63	8.13	6.12	4.25	3.25	2.50	3.12	4.75	6.62	8.13	9.38
Precipitation-effectiveness: 5.38						Temperature-efficiency: 76.26						
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												
+ Second mesothermic (712<PE<855)												

