

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

TRES ARROYOS (ARGENTINA)

Altitude: 109 m.

Latitude: 38°23'S Longitude: 60°16'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.	21.10	30.20	13.70	41.80	5.00	38.0	121.72
Feb.	20.60	29.10	14.20	39.20	5.00	73.0	99.73
Mar.	17.30	25.00	16.50	37.60	1.20	79.0	78.38
Apr.	14.40	21.20	9.20	33.40	-2.00	60.0	52.36
May.	10.60	16.40	6.50	30.00	-6.20	53.0	31.57
Jun.	8.10	13.40	4.10	22.70	-6.60	52.0	19.74
Jul.	7.30	22.80	3.30	23.40	-5.60	42.0	18.07
Aug.	8.00	14.30	3.40	26.50	-5.00	52.0	22.54
Sep.	10.40	17.00	5.50	28.90	-3.30	88.0	35.31
Oct.	13.70	20.60	7.90	30.10	-1.10	60.0	59.76
Nov.	16.70	24.70	9.90	35.90	0.50	82.0	82.86
Dec.	20.00	28.30	12.90	38.20	2.20	66.0	115.43
Year	14.02	21.92	8.93	32.31	-1.33	745	737.46

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	401
Compensated thermicity index.....(Itc):	401
Simple continentality index.....(Ic):	13.8
Diurnality index.....(Id):	19.5
Annual ombrothermic index.....(Io):	4.43
Monthly estival ombrothermic index.....(Ios1):	1.80
Bimonthly estival ombrothermic index.....(Ios2):	2.66
Threemonthly estival ombrothermic index.....(Ios3):	2.87
Fourmonthly estival ombrothermic index.....(Ios4):	3.30
Annual ombro-evaporation index.....(Ioe):	1.01
Annual positive temperature.....(Tp):	1682
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	617
Positive precipitation.....(Pp):	745

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	9	2	1	0	0

Latitudinal Belt...: Low Eutemperate

Continentality.....: Oceanic - Low Semihyperoceanic

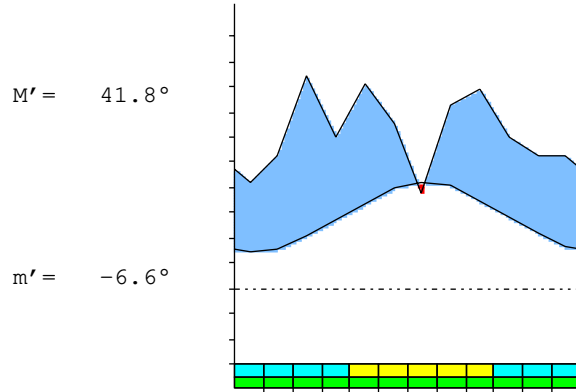
Bioclimate(Variant): TEMPERATE OCEANIC (SUBMEDITERRANEAN)

Bioclimatic Belt...: LOW THERMOTEMPERATE LOW SUBHUMID

TRES ARROYOS (ARGENTINA)

109 m

P= 745 38° 23'S 60° 16'W 10/10 y.
 T= 14.0 ° Ic= 13.8 Tp= 1682 Tn= 0
 m= 3.3 ° M= 22.8 ° Itc= 401 Io= 4.4



TEMPERATE OCEANIC (SUBMEDITERRANEAN)
 LOW THERMOTEMPERATE LOW SUBHUMID

WATER INDEX CARD TRES ARROYOS (ARGENTINA)
 Altitude: 109 m. Latitude: 38° 23'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	7.3	18	42	24	86	18	0	0	0	1.3
Aug.	8.0	23	52	14	100	23	0	15	8	1.3
Sep.	10.4	35	88	0	100	35	0	53	30	1.4
Oct.	13.7	60	60	0	100	60	0	0	15	0.0
Nov.	16.7	83	82	-1	99	83	0	0	8	0.0
Dec.	20.0	115	66	-49	50	115	0	0	4	-0.4
Jan.	21.1	122	38	-50	0	88	34	0	2	-0.6
Feb.	20.6	100	73	0	0	73	27	0	1	-0.2
Mar.	17.3	78	79	1	1	78	0	0	0	0.0
Apr.	14.4	52	60	8	8	52	0	0	0	0.1
May.	10.6	32	53	21	30	32	0	0	0	0.6
Jun.	8.1	20	52	32	62	20	0	0	0	1.6
Year	14.0	737	745	*	*	677	61	68	68	*

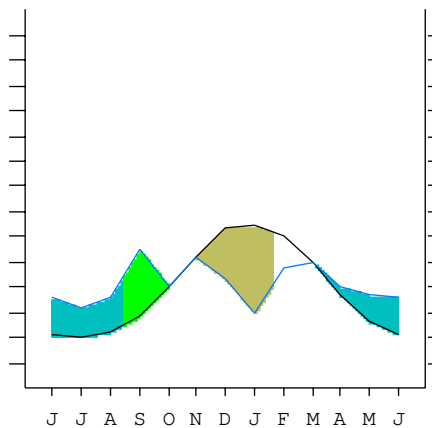
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

TRES ARROYOS (ARGENTINA)

38°23'S 60°16'W 109 m 10/10 y.

T= 14.0 Ic= 13.8 TEMPERATE OCEANIC (SUBMEDITERRANEAN)
 m= 3.3 Tp= 1682 LOW THERMOTEMPERATE
 M= 22.8 Tn= 0 LOW SUBHUMID
 M' = 41.8 Itc= 401
 m' = -6.6 Io= 4.4
 P= 745 mm
 PE= 737 mm

Imbibing	30 Feb.
Saturation	15 Aug.
Reserve Use	7 Oct.
Deficit	18 Jan.



TRES ARROYOS (ARGENTINA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B1b]
 + Type: B. Oceanic
 + Subtype: 1. Semihyperoceanic
 + Variant: b. Low
 Thermic types [B1.B4]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Low Eutemperate
 + Thermic type: B. Temperate
 + Thermic subtype: 4. Temperate
 Bioclimatic types [C3b.2b.6b]
 + Macrobioclimate: C. TEMPERATE
 + Bioclimate: 3. OCEANIC
 + Bioclimatic variant .: SUBMEDITERRANEAN
 + Thermic type.....: 2. THERMOTEMPERATE
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic ClassificationTeoc(Sbm).Tte.Shu.Seo

TRES ARROYOS (ARGENTINA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 398
 Coldest semester of the year.....(Psw): 347
 Warmest four months period of the year.....(Pcm1): 256
 Following warmest four months period.....(Pcm2): 207
 Positive precipitation dryest 3 months.....(Ppd): 146
 Positive precipitation dryest 2 months.....(Ppd2): 94
 Positive precipitation dryest 1 month.....(Ppd1): 38
 Positive precipitation warmest 3 months.....(Pps): 177
 Positive precipitation warmest 2 months.....(Pps2): 111
 Positive precipitation warmest 1 month.....(Pps1): 38
 Positive precipitation coldest 3 months.....(Ppw): 146
 Positive precipitation coldest 2 months.....(Ppw2): 94
 Positive precipitation coldest 1 month.....(Ppw1): 42

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	146	230	177	192

Seasonal rainfall rhythms: P > F > S > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 21.1
 Average coldest month [T].....(Tmin): 7.3
 Maximum temp. warmest month [M].....(Tmax): 30.2
 Minimum temp. coldest month [m].....(Tmin): 3.3
 Absolute Max.temp. warmest month [M'].....(Tamax): 41.8
 Absolute Min.temp. coldest month [m'].....(Tamin): -6.6
 First warmest contrasted month [M].....(Tcmax): 22.8 (7)
 First coldest contrasted month [m].....(Tcmin): 3.3 (7)
 Estival temperature.....(Ts): 617
 Positive temperature dryest 3 months.....(Tpd): 234
 Positive temperature dryest 2 months.....(Tpd2): 154
 Positive temperature dryest 1 month.....(Tpd1): 211
 Positive temperature warmest 3 months.....(Tps): 617
 Positive temperature warmest 2 months.....(Tps2): 417
 Positive temperature warmest 1 month.....(Tps1): 211
 Positive temperature coldest 3 months.....(Tpw): 234
 Positive temperature coldest 2 months.....(Tpw2): 153
 Positive temperature coldest 1 month.....(Tpw1): 73

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.99
 Mediterranean index of January.....(Im1): 3.20
 Mediterranean index of January & February....(Im2): 2.00
 Mediterranean index of December to February...(Im3): 1.90

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	660	380	730	790	600	530	520	420	520	880	600	820
Tp	200	211	206	173	144	106	81	73	80	104	137	167
Io (Iom)	3.30	1.80	3.54	4.57	4.17	5.00	6.42	5.75	6.50	8.46	4.38	4.91
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	1770 / 617			1920 / 423			1460 / 234			2300 / 408		
Io (Iot)	2.869			4.539			6.239			5.637		
Semesters	December-May						June-November					
Pp(x10)/Tp	3690 / 1040						3760 / 642					
Io (Iosm)	3.548						5.857					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 7450/1682=4.43 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	660	380	730	790	600	530	520	420	520	880	600	820
Tp [T*10]	200	211	206	173	144	106	81	73	80	104	137	167
Iom [Pp/Tp]	330	180	354	457	417	500	642	575	650	846	438	491
Avm [200-Iom]	***	20	***	***	***	***	***	***	***	***	***	***
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	1770 / 617			1920 / 423			1460 / 234			2300 / 408		
Iot [Pp/Tp]	287			454			624			564		
Avs E[Avm<200]	***			***			***			***		
Weak upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 13.80
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	17.38
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	17.38
+ Hyperoceanic (-20<CI<20)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.00
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T]	53.15
+ Semiarid (60>R>40)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	31.02
+ Humid (60>Ia>30)	
I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)]	82.67
+ Subhumid (90>Q>50)	
I of Dantin & Revenga (1940) [DR=100*T/P]	1.88
+ Humid (2>DR>0)	
Aridity Index of UNEP [I=P/PE]	1.01
+ Humid (I>0.65)	
Potencial Erosion I of Fournier (1960) [K=Pi ² /P].....	10.39
+ 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	0.14	0.29	0.34	0.28	0.27	0.29	0.23	0.29	0.48	0.28	0.36	0.26
T-E ratio	9.50	9.27	7.78	6.48	4.77	3.65	3.29	3.60	4.68	6.16	7.52	9.00
Precipitation-effectiveness: 35.13						Temperature-efficiency: 75.69						
Moisture Index [MI=100*(P-PE)/PE]: 1.02												
+ C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE]: 8.23												
+ No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE]: 9.25												
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE: 737.46												
+ Second mesothermic (712<PE<855)												

