

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

FORMOSA (ARGENTINA)

Altitude: 65 m.

Latitude: 26°10'S Longitude: 58°12'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.	27.70	34.90	21.60	43.00	12.50	111.0	169.77
Feb.	27.10	34.20	21.70	42.00	11.30	139.0	141.71
Mar.	24.70	31.10	20.00	38.70	9.00	214.0	118.84
Apr.	22.00	28.10	17.10	36.90	4.70	139.0	80.68
May.	19.00	24.80	14.80	34.00	2.50	136.0	54.19
Jun.	16.90	22.30	13.00	32.40	-2.50	89.0	37.54
Jul.	16.50	22.40	12.00	32.90	0.30	45.0	36.90
Aug.	17.20	23.60	12.20	39.30	0.20	32.0	43.29
Sep.	20.20	27.00	14.90	40.20	-0.50	89.0	67.48
Oct.	22.50	29.40	16.80	40.50	5.80	111.0	98.84
Nov.	24.70	31.40	18.60	41.10	8.80	130.0	126.77
Dec.	26.90	33.90	20.10	43.20	9.80	116.0	165.06
Year	22.12	28.59	16.90	38.68	5.16	1351	1141.1

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	565
Compensated thermicity index.....(Itc):	565
Simple continentality index.....(Ic):	11.2
Diurnality index.....(Id):	13.8
Annual ombrothermic index.....(Io):	5.09
Monthly dry ombrothermic index.....(Iod1):	1.86
Bimonthly dry ombrothermic index.....(Iod2):	2.28
Three monthly dry ombrothermic index.....(Iod3):	3.28
Four monthly dry ombrothermic index.....(Iod4):	4.34
Annual ombro-evaporation index.....(Ioe):	1.55
Annual positive temperature.....(Tp):	2654
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	506
Positive precipitation.....(Pp):	1351

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	10	1	1	0	0

Latitudinal Belt...: Subtropical

Continentalty.....: Oceanic - High Semihyperoceanic

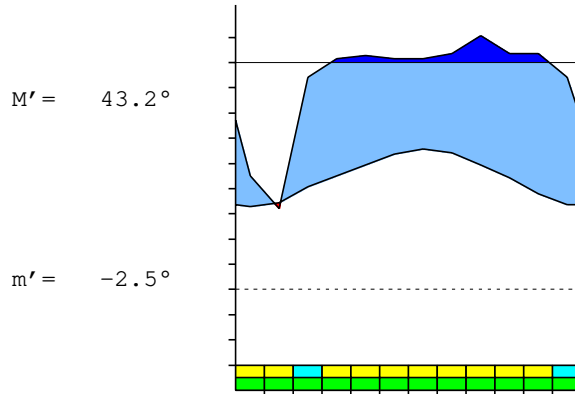
Bioclimate(Variant): TROPICAL PLUVISEASONAL (PLUVISEROTIN,MESOPHYTIC)

Bioclimatic Belt...: UPPER THERMOTROPICAL UPPER SUBHUMID

FORMOSA (ARGENTINA)

65 m

P= 1351      26° 10' S      58° 12' W      10/10 y.  
 T= 22.1°      Ic= 11.2      Tp= 2654      Tn= 0  
 m= 12.0°      M= 22.4°      Itc= 565      Io= 5.1



TROPICAL PLUVISEASONAL (PLUVISEROTIN)  
 UPPER THERMOTROPICAL UPPER SUBHUMID

WATER INDEX CARD

FORMOSA (ARGENTINA)

Altitude: 65 m.

Latitude: 26° 10' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	16.5	37	45	0	100	37	0	8	31	0.2
Aug.	17.2	43	32	-11	89	43	0	0	15	-0.2
Sep.	20.2	67	89	11	100	67	0	10	13	0.3
Oct.	22.5	99	111	0	100	99	0	12	12	0.1
Nov.	24.7	127	130	0	100	127	0	3	8	0.0
Dec.	26.9	165	116	-49	51	165	0	0	4	-0.2
Jan.	27.7	170	111	-51	0	162	8	0	2	-0.3
Feb.	27.1	142	139	0	0	139	3	0	1	0.0
Mar.	24.7	119	214	95	95	119	0	0	0	0.8
Apr.	22.0	81	139	5	100	81	0	53	27	0.7
May.	19.0	54	136	0	100	54	0	82	54	1.5
Jun.	16.9	38	89	0	100	38	0	51	53	1.3
Year	22.1	1141	1351	*	*	1131	11	220	220	*

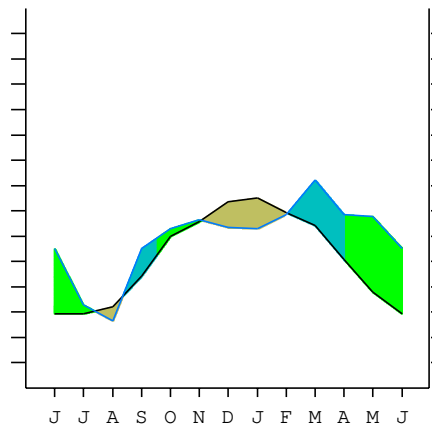
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

FORMOSA (ARGENTINA)

26°10' S    58°12' W    65 m 10/10 y.

T= 22.1      Ic= 11.2      TROPICAL PLUVISEASONAL (PLUVISEROTIN)  
 m= 12.0      Tp= 2654      UPPER THERMOTROPICAL  
 M= 22.4      Tn= 0      UPPER SUBHUMID  
 M' = 43.2      Itc= 565  
 m' = -2.5      Io= 5.1  
 P= 1351      mm    ———  
 PE= 1141      mm    ———

Imbibing	1 Feb.
Saturation	3 Apr.
Reserve Use	2 Nov.
Deficit	27 Jan.



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1a]  
 + Type .....: B. Oceanic  
 + Subtype .....: 1. Semihyperoceanic  
 + Variant .....: a. High  
 Thermic types [A3.A2]  
 + Latitudinal zone .....: A. Warm  
 + Latitudinal belt .....: 3. Subtropical  
 + Thermic type .....: A. Warm  
 + Thermic subtype .....: 2. Warm  
 Bioclimatic types [A4e.2a.6a]  
 + Macrobioclimate .....: A. TROPICAL  
 + Bioclimate .....: 4. PLUVISEASONAL  
 + Bioclimatic variant .: e. PLUVISEROTIN, MESOPHYTIC  
 + Thermic type.....: 2. THERMOTROPICAL  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 6. SUBHUMID  
 + Ombrothermic subtype : a. UPPER  
 Bioclimatic Classification .....: Trde (Pse).Ttr.Shu

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 821  
 Coldest semester of the year.....(Psw): 530  
 Warmest four months period of the year.....(Pcm1): 496  
 Following warmest four months period.....(Pcm2): 578  
 Positive precipitation dryest 3 months.....(Ppd): 166  
 Positive precipitation dryest 2 months.....(Ppd2): 77  
 Positive precipitation dryest 1 month.....(Ppd1): 32  
 Positive precipitation warmest 3 months.....(Pps): 366  
 Positive precipitation warmest 2 months.....(Pps2): 250  
 Positive precipitation warmest 1 month.....(Pps1): 111  
 Positive precipitation coldest 3 months.....(Ppw): 166  
 Positive precipitation coldest 2 months.....(Ppw2): 134  
 Positive precipitation coldest 1 month.....(Ppw1): 45

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	166	330	366	489

Seasonal rainfall rhythms: F > S > P > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 27.7  
 Average coldest month [T].....(Tmin): 16.5  
 Maximum temp. warmest month [M].....(Tmmax): 34.9  
 Minimum temp. coldest month [m].....(Tmmin): 12.0  
 Absolute Max.temp. warmest month [M'].....(Tamax): 43.2  
 Absolute Min.temp. coldest month [m'].....(Tamin): -2.5  
 First warmest contrasted month [M].....(Tcmax): 33.9 (12)  
 First coldest contrasted month [m].....(Tcmin): 20.1 (12)  
 Dry station temperature.....(Td): 506  
 Positive temperature dryest 3 months.....(Tpd): 506  
 Positive temperature dryest 2 months.....(Tpd2): 337  
 Positive temperature dryest 1 month.....(Tpd1): 172  
 Positive temperature warmest 3 months.....(Tps): 817  
 Positive temperature warmest 2 months.....(Tps2): 548  
 Positive temperature warmest 1 month.....(Tps1): 277  
 Positive temperature coldest 3 months.....(Tpw): 506  
 Positive temperature coldest 2 months.....(Tpw2): 334  
 Positive temperature coldest 1 month.....(Tpw1): 165

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.84  
 Mediterranean index of January.....(Im1): 1.53  
 Mediterranean index of January & February.....(Im2): 1.25  
 Mediterranean index of December to February...(Im3): 1.30

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1160	1110	1390	2140	1390	1360	890	450	320	890	1110	1300
Tp	269	277	271	247	220	190	169	165	172	202	225	247
Io (Iom)	4.31	4.01	5.13	8.66	6.32	7.16	5.27	2.73	1.86	4.41	4.93	5.26
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	3660 / 817			4890 / 657			1660 / 506			3300 / 674		
Io (Iot)	4.480			7.443			3.281			4.896		
Semesters	December-May						June-November					
Pp(x10)/Tp	8550 / 1474						4960 / 1180					
Io (Iosm)	5.801						4.203					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 13510/2654=5.09 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1160	1110	1390	2140	1390	1360	890	450	320	890	1110	1300
Tp [T*10]	269	277	271	247	220	190	169	165	172	202	225	247
Iom [Pp/Tp]	431	401	513	866	632	716	527	273	186	441	493	526
Avm [200-Iom]	***	***	***	***	***	***	***	***	14	***	***	***
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	3660 / 817			4890 / 657			1660 / 506			3300 / 674		
Iot [Pp/Tp]	448			744			328			490		
Avs E[Avm<200]	***			***			***			***		
Weak upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 11.20
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	22.78
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	18.26
+ Hyperoceanic (-20<CI<20)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....	1.15
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T] .....	61.09
+ Temperate warm (100>R>60)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	42.07
+ Humid (60>Ia>30)	
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....	125.79
+ Humid (Q>90)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	1.64
+ Humid (2>DR>0)	
Aridity Index of UNEP [I=P/PE] .....	1.18
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....	33.90
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....

- + Climate .....
- + Region .....
- + Thermic type: 2. Macrothermic

Thornthwaite (1948)													
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
P-E ratio	0.39	0.51	0.87	0.57	0.60	0.40	0.19	0.13	0.36	0.44	0.50	0.42	
T-E ratio	12.47	12.20	11.12	9.90	8.55	7.60	7.43	7.74	9.09	10.13	11.12	12.10	
Precipitation-effectiveness:	53.65					Temperature-efficiency .....							119.43
Moisture Index [MI=100*(P-PE)/PE] .....												18.40	
+ C2.Subhumid humid (0<MI<20)													
Index of dryness [DI=100*d/PE] .....												0.92	
+ No deficit (0<DI<16.7)													
Index of humidity [HI=100*s/PE] .....												19.32	
+ Moderate surplus (10<HI<20)													
Potential Evapotranspiration PE .....												1141.07	
+ Forth mesothermic (997<PE<1440)													

