

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

TAMANRASSET (ALGERIA)

Altitude: 1403 m.

Latitude: 22°47'N Longitude: 5°31'E

Temperature observation period.: 1979-1994 (16)

Rainfall observation period....: 1979-1994 (16)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	11.67	19.44	3.89	26.11	-6.67	5.1	17.35
Feb.	13.62	21.67	5.56	29.44	-3.89	1.3	24.12
Mar.	17.23	25.56	8.89	32.22	0.00	1.3	49.28
Apr.	21.67	30.00	13.33	35.56	3.33	5.1	88.26
May.	25.28	33.33	17.22	40.56	4.44	10.2	137.74
Jun.	28.06	35.00	21.11	39.44	10.56	2.5	167.23
Jul.	28.34	35.00	21.67	38.89	16.67	2.5	174.26
Aug.	27.78	34.44	21.11	40.00	13.89	10.2	163.24
Sep.	25.84	32.78	18.89	37.22	12.78	2.5	129.94
Oct.	22.22	29.44	15.00	34.44	8.33	1.3	87.57
Nov.	18.06	25.56	10.56	31.11	-0.56	1.3	49.31
Dec.	13.61	21.11	6.11	30.00	-2.78	1.3	24.89
Year	21.11	28.61	13.61	34.58	4.68	45	1113.2

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	444
Compensated thermicity index.....(Itc):	444
Simple continentality index.....(Ic):	16.7
Diurnality index.....(Id):	16.7
Annual ombrothermic index.....(Io):	0.18
Monthly dry ombrothermic index.....(Iod1):	0.06
Bimonthly dry ombrothermic index.....(Iod2):	0.06
Three monthly dry ombrothermic index.....(Iod3):	0.07
Four monthly dry ombrothermic index.....(Iod4):	0.08
Annual ombro-evaporation index.....(Ioe):	1.90
Annual positive temperature.....(Tp):	2534
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	539
Positive precipitation.....(Pp):	45

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	0	0	0	12	0

Latitudinal Belt...: Eutropical

Continentalty.....: Oceanic - Low Euoceanic

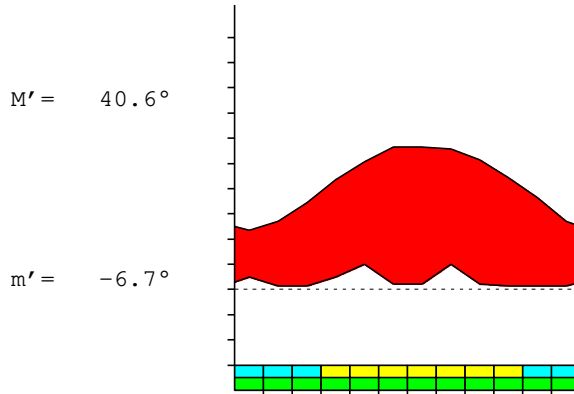
Bioclimate(Variant): TROPICAL HYPERDESERTIC (MODERATE)

Bioclimatic Belt...: LOW MESOTROPICAL UPPER ULTRAHYPERARID

TAMANRASSET (ALGERIA)

1403 m

P= 45 22° 47'N 5° 31'E 16/16 y.  
 T= 21.1° Ic= 16.7 Tp= 2534 Tn= 0  
 m= 3.9° M= 19.4° Itc= 444 Io= 0.2



TROPICAL HYPERDESERTIC (MODERATE)  
 LOW MESOTROPICAL UPPER ULTRAHYPERARID

WATER INDEX CARD TAMANRASSET (ALGERIA)  
 Altitude: 1403 m. Latitude: 22° 47'N

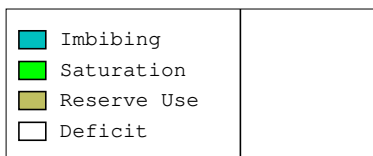
(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	11.7	17	5	0	0	5	12	0	0	-0.7
Feb.	13.6	24	1	0	0	1	23	0	0	-0.9
Mar.	17.2	49	1	0	0	1	48	0	0	-0.9
Apr.	21.7	88	5	0	0	5	83	0	0	-0.9
May.	25.3	138	10	0	0	10	128	0	0	-0.9
Jun.	28.1	167	3	0	0	3	165	0	0	-0.9
Jul.	28.3	174	3	0	0	3	172	0	0	-0.9
Aug.	27.8	163	10	0	0	10	153	0	0	-0.9
Sep.	25.8	130	3	0	0	3	127	0	0	-0.9
Oct.	22.2	88	1	0	0	1	86	0	0	-0.9
Nov.	18.1	49	1	0	0	1	48	0	0	-0.9
Dec.	13.6	25	1	0	0	1	24	0	0	-0.9
Year	21.1	1113	45	*	*	45	1069	0	0	*

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

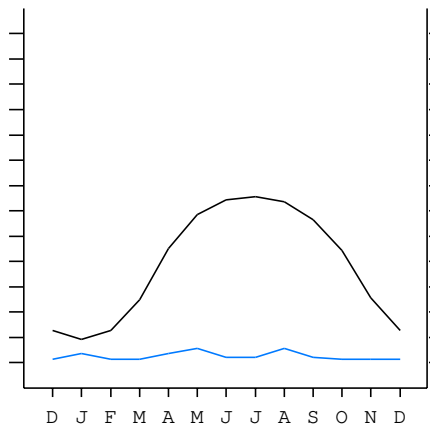
TAMANRASSET (ALGERIA)

22°47'N 5°31'E 1403 m 16/16 y.

T= 21.1 Ic= 16.7 TROPICAL HYPERDESERTIC (MODERATE)  
 m= 3.9 Tp= 2534 LOW MESOTROPICAL  
 M= 19.4 Tn= 0 UPPER ULTRAHYPERARID  
 M' = 40.6 Itc= 444  
 m' = -6.7 Io= 0.2  
 P= 45 mm  
 PE= 1113 mm



All over the year,  
 there is hydric deficit



TAMANRASSET (ALGERIA)

Latitude: 22°47'N Longitude: 5°31'E Altitude: 1403 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2b]  
 + Type .....: B. Oceanic  
 + Subtype .....: 2. Euoceanic  
 + Variant .....: b. Low  
 Thermic types [A2.A2]  
 + Latitudinal zone ....: A. Warm  
 + Latitudinal belt ....: 2. Eutropical  
 + Thermic type .....: A. Warm  
 + Thermic subtype .....: 2. Warm  
 Bioclimatic types [A1.3b.1a]  
 + Macrobioclimate .....: A. TROPICAL  
 + Bioclimate .....: 1. HYPERDESERTIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 3. MESOTROPICAL  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 1. ULTRAHYPERARID  
 + Ombrothermic subtype : a. UPPER  
 Bioclimatic Classification .....: Trpl.Mtr.Uha

TAMANRASSET (ALGERIA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 29  
 Coldest semester of the year.....(Psw): 15  
 Warmest four months period of the year.....(Pcm1): 18  
 Following warmest four months period.....(Pcm2): 9  
 Positive precipitation dryest 3 months.....(Ppd): 4  
 Positive precipitation dryest 2 months.....(Ppd2): 3  
 Positive precipitation dryest 1 month.....(Ppd1): 1  
 Positive precipitation warmest 3 months.....(Pps): 15  
 Positive precipitation warmest 2 months.....(Pps2): 5  
 Positive precipitation warmest 1 month.....(Pps1): 3  
 Positive precipitation coldest 3 months.....(Ppw): 8  
 Positive precipitation coldest 2 months.....(Ppw2): 6  
 Positive precipitation coldest 1 month.....(Ppw1): 5

Seasons	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4
Rainfall	7	16	15	5

Tropical rainfall rhythms: 2 > 3 > 1 > 4

TAMANRASSET (ALGERIA)

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 28.3  
 Average coldest month [T].....(Tmin): 11.7  
 Maximum temp. warmest month [M].....(Tmmax): 35.0  
 Minimum temp. coldest month [m].....(Tmmin): 3.9  
 Absolute Max.temp. warmest month [M'].....(Tamax): 40.6  
 Absolute Min.temp. coldest month [m'].....(Tamin): -6.7  
 First warmest contrasted month [M].....(Tcmax): 25.6 (3)  
 First coldest contrasted month [m].....(Tcmin): 8.9 (3)  
 Dry station temperature.....(Td): 539  
 Positive temperature dryest 3 months.....(Tpd): 539  
 Positive temperature dryest 2 months.....(Tpd2): 309  
 Positive temperature dryest 1 month.....(Tpd1): 136  
 Positive temperature warmest 3 months.....(Tps): 842  
 Positive temperature warmest 2 months.....(Tps2): 564  
 Positive temperature warmest 1 month.....(Tps1): 283  
 Positive temperature coldest 3 months.....(Tpw): 389  
 Positive temperature coldest 2 months.....(Tpw2): 253  
 Positive temperature coldest 1 month.....(Tpw1): 117

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

TAMANRASSET (ALGERIA)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 24.96  
 Mediterranean index of July.[PE/P].....(Im1): No  
 Mediterranean index of July & August.....(Im2): No  
 Mediterranean index of June, July & August....(Im3): No

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	13	51	13	13	51	102	25	25	102	25	13	13
Tp	136	117	136	172	217	253	281	283	278	258	222	181
Io (Iom)	0.10	0.44	0.10	0.08	0.24	0.40	0.09	0.09	0.37	0.10	0.06	0.07
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	77 / 389			166 / 642			152 / 842			51 / 661		
Io (Iot)	0.198			0.259			0.181			0.077		
Semesters	December-May						June-November					
Pp(x10)/Tp	243 / 1031						203 / 1503					
Io (Iosm)	0.236						0.135					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 446/2534=0.18 [Upper ultrahyperarid \(2\) \[2189\]](#)

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	13	51	13	13	51	102	25	25	102	25	13	13
Tp [T*10]	136	117	136	172	217	253	281	283	278	258	222	181
Iom [Pp/Tp]	10	44	10	8	24	40	9	9	37	10	6	7
Avm [200-Iom]	190	156	190	192	176	160	191	191	163	190	194	193
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	77 / 389			166 / 642			152 / 842			51 / 661		
Iot [Pp/Tp]	20			26			18			8		
Avs E[Avm<200]	537			529			546			577		
Lower ultrahyperarid [9]							Upper ultrahyperarid [1]					
Lower hyperarid [3]							Upper hyperarid [1]					
Strong lower arid [2]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp):	16.67
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....		52.78
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....		38.34
+ Oceanic (20<CI<40)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....		1.94
+ Continental (1.7<CI<2.3)		
Rainfall Index of Lang (1925) [R=P/T] .....		2.11
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....		1.43
+ Extremely arid -desert- (5>Ia>0)		
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....		3.69
+ Arid (30>Q>0)		
I of Dantin & Revenga (1940) [DR=100*T/P] .....		47.34
+ Extremely arid (DR>6)		
Aridity Index of UNEP [I=P/PE] .....		0.04
+ Hyperarid (0.05>Im)		
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....		2.33
+ 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	0.02	0.00	0.00	0.01	0.03	0.01	0.01	0.03	0.01	0.00	0.00	0.00
T-E ratio	5.25	6.13	7.75	9.75	11.38	12.63	12.75	12.50	11.63	10.00	8.13	6.12
Precipitation-effectiveness: 1.26						Temperature-efficiency .....						114.02
Moisture Index [MI=100*(P-PE)/PE] .....												-95.99
+ E.Dry (-110<MI<-66.7)												
Index of dryness [DI=100*d/PE] .....												95.98
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												1113.20
+ Forth mesothermic (997<PE<1440)												

