

Phytosociological Research Center
 www.globalbioclimatics.org
 Worldwide Bioclimatic Classification System
 Prof.Dr. Salvador Rivas-Martinez
 (Adapted to Synoptical Table 30/08/2017)

ARTIKUTZA (ESP NAVARRA) Altitude: 660 m.
 Latitude: 43°14'N Longitude: 1°48'W
 Temperature observation period.: 1989-1997 (9)
 Rainfall observation period....: 1969-1997 (29)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	5.60	8.80	2.40	15.50	-3.80	245.3	18.29
Feb.	6.40	9.90	2.90	17.60	-3.00	231.1	21.59
Mar.	8.10	11.90	4.30	21.30	-1.30	236.4	35.23
Apr.	8.00	12.00	4.10	22.20	-1.10	256.2	38.14
May.	12.60	17.00	8.30	27.10	2.40	210.2	72.40
Jun.	14.00	18.20	9.80	28.10	5.90	146.2	83.04
Jul.	16.90	21.20	12.50	31.40	8.20	169.3	103.96
Aug.	17.80	22.20	13.40	30.00	9.10	150.8	102.67
Sep.	14.70	18.90	10.60	26.20	5.80	160.5	71.37
Oct.	12.10	15.80	8.30	23.40	2.70	254.7	52.10
Nov.	8.90	12.30	5.50	19.60	0.30	249.0	31.19
Dec.	6.50	9.60	3.50	16.10	-2.70	256.8	20.64
Year	10.97	14.82	7.13	23.21	1.88	2567	650.63

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	222
Compensated thermicity index.....(Itc):	222
Simple continentality index.....(Ic):	12.2
Diurnality index.....(Id):	8.8
Annual ombrothermic index.....(Io):	19.50
Monthly estival ombrothermic index.....(Ios1):	8.47
Bimonthly estival ombrothermic index.....(Ios2):	9.22
Three monthly estival ombrothermic index.....(Ios3):	9.57
Four monthly estival ombrothermic index.....(Ios4):	11.04
Annual ombro-evaporation index.....(Ioe):	0.74
Annual positive temperature.....(Tp):	1316
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	487
Positive precipitation.....(Pp):	2567

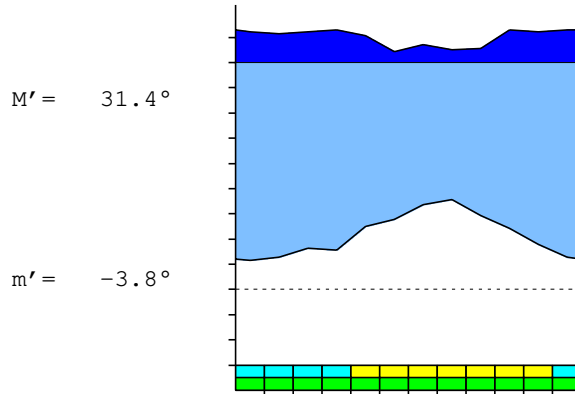
N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	12	0	0	0	0

Latitudinal Belt...: High eutemperate
 Continentality.....: Oceanic - Low Semihyperoceanic
 Bioclimate.....: TEMPERATE OCEANIC
 Bioclimatic Belt...: UPPER MESOTEMPERATE UPPER HYPERHUMID

ARTIKUTZA (ESP NAVARRA)

660 m

P= 2567 43° 14'N 1° 48'W 9/29 y.
 T= 11.0° Ic= 12.2 Tp= 1316 Tn= 0
 m= 2.4° M= 8.8° Itc= 222 Io= 19.5



TEMPERATE OCEANIC
 UPPER MESOTEMPERATE UPPER HYPERHUMID

WATER INDEX CARD ARTIKUTZA (ESP NAVARRA)
 Altitude: 660 m. Latitude: 43° 14'N

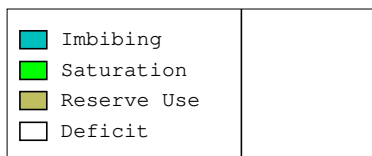
(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	5.6	18	245	0	100	18	0	227	217	12.4
Feb.	6.4	22	231	0	100	22	0	210	213	9.7
Mar.	8.1	35	236	0	100	35	0	201	207	5.7
Apr.	8.0	38	256	0	100	38	0	218	213	5.7
May.	12.6	72	210	0	100	72	0	138	175	1.9
Jun.	14.0	83	146	0	100	83	0	63	119	0.7
Jul.	16.9	104	169	0	100	104	0	65	92	0.6
Aug.	17.8	103	151	0	100	103	0	48	70	0.4
Sep.	14.7	71	161	0	100	71	0	89	80	1.2
Oct.	12.1	52	255	0	100	52	0	203	141	3.8
Nov.	8.9	31	249	0	100	31	0	218	179	6.9
Dec.	6.5	21	257	0	100	21	0	236	208	11.4
Year	11.0	651	2567	*	*	651	0	1916	1916	*

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

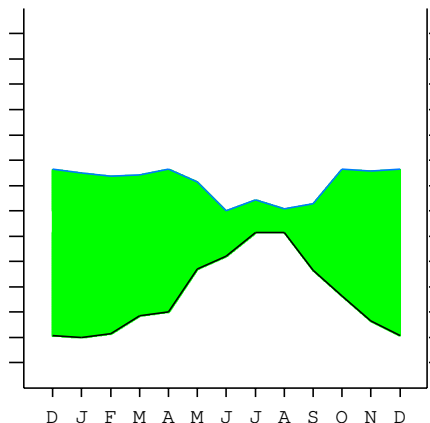
ARTIKUTZA (ESP NAVARRA)

43°14'N 1°48'W 660 m 9/29 y.

T= 11.0 Ic= 12.2 TEMPERATE OCEANIC
 m= 2.4 Tp= 1316 UPPER MESOTEMPERATE
 M= 8.8 Tn= 0 UPPER HYPERHUMID
 M' = 31.4 Itc= 222
 m' = -3.8 Io= 19.5
 P= 2567 mm ———
 PE= 651 mm ———



All over the year,
 there is no hydric deficit



ARTIKUTZA (ESP NAVARRA)

Latitude: 43°14'N Longitude: 1°48'W Altitude: 660 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1b]
 + Type: B. Oceanic
 + Subtype: 1. Semihyperoceanic
 + Variant: b. Low

Thermic types [B1.B5]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. High eutemperate
 + Thermic type: B. Temperate
 + Thermic subtype: 5. Subtemperate

Bioclimatic types [C3.3a.8a]
 + Macrobioclimate: C. TEMPERATE
 + Bioclimate: 3. OCEANIC
 + Bioclimatic variant ..:
 + Thermic type.....: 3. MESOTEMPERATE
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 8. HYPERHUMID
 + Ombrothermic subtype : a. UPPER

Bioclimatic Classification: Teco.Mte.Hhu

ARTIKUTZA (ESP NAVARRA)

Latitude: 43°14'N Longitude: 1°48'W Altitude: 660 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 1092
 Coldest semester of the year.....(Psw): 1475
 Warmest four months period of the year.....(Pcm1): 627
 Following warmest four months period.....(Pcm2): 1006
 Positive precipitation dryest 3 months.....(Ppd): 466
 Positive precipitation dryest 2 months.....(Ppd2): 311
 Positive precipitation dryest 1 month.....(Ppd1): 146
 Positive precipitation warmest 3 months.....(Pps): 481
 Positive precipitation warmest 2 months.....(Pps2): 320
 Positive precipitation warmest 1 month.....(Pps1): 151
 Positive precipitation coldest 3 months.....(Ppw): 733
 Positive precipitation coldest 2 months.....(Ppw2): 476
 Positive precipitation coldest 1 month.....(Ppw1): 245

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	733	702	466	664

Seasonal rainfall rhythms: W > P > F > S

ARTIKUTZA (ESP NAVARRA)

Latitude: 43°14'N Longitude: 1°48'W Altitude: 660 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 17.8
 Average coldest month [T].....(Tmin): 5.6
 Maximum temp. warmest month [M].....(Tmmax): 22.2
 Minimum temp. coldest month [m].....(Tmmin): 2.4
 Absolute Max.temp. warmest month [M'].....(Tamax): 31.4
 Absolute Min.temp. coldest month [m'].....(Tamin): -3.8
 First warmest contrasted month [M].....(Tcmax): 22.2 (8)
 First coldest contrasted month [m].....(Tcmin): 13.4 (8)
 Estival temperature.....(Ts): 487
 Positive temperature dryest 3 months.....(Tpd): 487
 Positive temperature dryest 2 months.....(Tpd2): 325
 Positive temperature dryest 1 month.....(Tpd1): 140
 Positive temperature warmest 3 months.....(Tps): 494
 Positive temperature warmest 2 months.....(Tps2): 347
 Positive temperature warmest 1 month.....(Tps1): 178
 Positive temperature coldest 3 months.....(Tpw): 185
 Positive temperature coldest 2 months.....(Tpw2): 120
 Positive temperature coldest 1 month.....(Tpw1): 56

ARTIKUTZA (ESP NAVARRA)

Latitude: 43°14'N Longitude: 1°48'W Altitude: 660 m

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	

ARTIKUTZA (ESP NAVARRA)

Latitude: 43°14'N Longitude: 1°48'W Altitude: 660 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.25
Mediterranean index of July.[PE/P].....(Im1): 0.61
Mediterranean index of July & August.....(Im2): 0.65
Mediterranean index of June, July & August....(Im3): 0.62

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	2568	2453	2311	2364	2562	2102	1462	1693	1508	1605	2547	2490
Tp	65	56	64	81	80	126	140	169	178	147	121	89
Io (Iom)	39.5	43.8	36.1	29.2	32.0	16.7	10.4	10.0	8.47	10.9	21.0	28.0
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	7332 / 185			7028 / 287			4663 / 487			6642 / 357		
Io (Iot)	39.63			24.49			9.575			18.61		
Semesters	December-May						June-November					
Pp(x10)/Tp	14360 / 472						11305 / 844					
Io (Iosm)	30.42						13.39					

ARTIKUTZA (ESP NAVARRA)

Latitude: 43°14'N Longitude: 1°48'W Altitude: 660 m

Aridity Value Index (AVI)

[10xPP/TP=IO]: 25665/1316=19.50 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	2568	2453	2311	2364	2562	2102	1462	1693	1508	1605	2547	2490
Tp [T*10]	65	56	64	81	80	126	140	169	178	147	121	89
Iom [Pp/Tp]	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	847	\$\$	\$\$	\$\$
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	7332 / 185			7028 / 287			4663 / 487			6642 / 357		
Iot [Pp/Tp]	\$\$			2449			957			1861		
Avs E[Avm<200]	***			***			***			***		

ARTIKUTZA (ESP NAVARRA)

Latitude: 43°14'N Longitude: 1°48'W Altitude: 660 m

BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 12.20
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 9.88
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 11.89
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 0.79
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: 234.03
 + Humid (R>160)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 122.41
 + Perhumid (Ia>60)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 526.92
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 0.43
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 3.94
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 25.70
 + Very low (K<60)

ARTIKUTZA (ESP NAVARRA)

Latitude: 43°14'N Longitude: 1°48'W Altitude: 660 m

BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: A. Warm and temperate warm
 + Region: 7. Mesoaxeric (Axeric temperate)
 + Thermic type: 5. Meso-microthermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	1.77	1.61	1.55	1.70	1.17	0.75	0.81	0.70	0.81	1.47	1.59	1.80
T-E ratio	2.52	2.88	3.65	3.60	5.67	6.30	7.60	8.01	6.61	5.45	4.00	2.93
Precipitation-effectiveness: 157.30						Temperature-efficiency: 59.22						
Moisture Index [MI=100*(P-PE)/PE]: 294.46 + A.Extremely humid (MI>100)												
Index of dryness [DI=100*d/PE]: 0.00 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE]: 294.45 + Strong surplus (20<HI)												
Potential Evapotranspiration PE: 650.63 + First mesothermic (570<PE<712)												

