



UNIVERSIDAD NACIONAL DE COLOMBIA SEDE MANIZALES

OBSERVATORIOS AMBIENTALES PARA EL DESARROLLO URBANO SOTENIBLE EN MANIZALES

RED DE ESTACIONES HIDROMETEOROLÓGICAS PARA PREVENCIÓN DE DESASTRES DE MANIZALES



ESTACIÓN METEOROLÓGICA YARUMOS

CÓDIGO: EMM-05

MARZO DE 2011

RESUMEN DIARIO Y MENSUAL DE VARIABLES METEOROLÓGICAS

Variables Día	Temperatura del Aire (°C)			V.V. (m/s)		P.B. (HPa)	Humedad Relativa (%)			LI. (mm)	Radiación Solar (W/m ²)		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	22.0	14.3	11.2	3.6	0.8	793.8	97.0	88.6	59.0	30.0	1232.0	328.5	2.0
2	21.6	14.3	12.2	3.1	0.6	793.7	97.0	89.7	58.0	59.7	1252.0	365.8	2.0
3	22.5	15.0	11.1	3.6	0.8	793.6	98.0	85.9	61.0	40.4	1224.0	434.7	2.5
4	24.5	16.0	11.9	3.6	0.9	793.6	98.0	83.3	51.0	1.5	980.0	417.0	2.8
5	24.3	15.7	11.4	3.1	0.7	794.0	97.0	83.0	51.0	1.5	1269.0	346.4	2.3
6	24.7	14.7	12.4	3.6	0.4	794.3	97.0	87.4	49.0	32.3	677.0	195.4	1.0
7	25.3	15.7	12.2	2.7	0.8	793.7	96.0	84.7	53.0	5.3	1043.0	230.2	1.5
8	23.9	15.3	12.2	3.6	0.8	794.1	97.0	87.4	56.0	23.9	1176.0	322.9	2.0
9	20.9	14.6	12.1	4.9	0.7	794.5	97.0	88.8	65.0	52.1	684.0	256.2	1.5
10	24.0	14.4	10.8	3.1	0.8	794.7	96.0	84.9	48.0	4.3	716.0	276.2	1.8
11	22.0	14.7	10.8	3.6	1.0	794.6	96.0	83.6	57.0	1.0	1336.0	325.2	2.3
12	24.4	16.5	11.5	3.1	1.0	794.6	95.0	78.2	50.0	0.0	1261.0	482.2	3.3
13	24.9	16.8	11.1	4.0	1.0	794.9	95.0	74.2	42.0	0.0	1070.0	568.0	4.1
14	25.3	16.6	10.1	4.5	1.2	794.9	95.0	71.3	42.0	0.0	1157.0	547.2	4.1
15	23.7	15.4	9.9	4.0	1.1	795.1	93.0	78.3	48.0	11.4	1108.0	372.1	2.6
16	23.3	16.3	12.2	3.6	0.8	794.9	96.0	82.6	53.0	18.5	1189.0	327.0	2.3
17	26.3	16.5	13.2	3.1	0.6	794.6	97.0	84.5	50.0	0.5	946.0	278.5	1.8
18	23.1	16.1	13.5	3.1	0.6	794.4	96.0	86.0	57.0	8.6	945.0	251.5	1.5
19	23.1	15.2	11.4	3.6	0.9	793.9	97.0	88.0	61.0	9.1	1124.0	290.4	2.0
20	22.0	15.1	12.7	2.2	0.3	793.9	97.0	90.1	63.0	3.8	637.0	208.5	1.3
21	26.0	14.9	12.5	4.0	0.5	793.6	98.0	89.1	50.0	5.6	1044.0	249.8	1.5
22	22.1	15.5	11.7	4.0	0.7	793.2	97.0	86.2	62.0	4.6	1254.0	325.3	2.0
23	20.9	15.3	13.1	2.7	0.3	793.3	98.0	91.2	73.0	20.6	839.0	180.0	1.0
24	24.7	15.9	12.9	2.7	0.5	793.5	98.0	89.3	57.0	2.3	939.0	223.6	1.5
25	22.1	15.7	12.5	3.6	0.7	794.0	98.0	87.7	63.0	3.8	766.0	242.2	1.3
26	23.2	15.9	12.7	3.1	0.8	793.6	96.0	84.6	61.0	0.3	839.0	216.8	1.5
27	25.2	16.7	11.3	3.6	0.6	793.6	95.0	83.0	56.0	7.1	1076.0	347.0	2.8
28	22.1	15.6	12.3	3.1	0.9	794.1	96.0	87.5	64.0	19.1	556.0	169.8	1.3
29	23.5	16.4	10.9	3.6	0.5	794.4	97.0	81.5	58.0	0.3	1195.0	255.9	1.8
30	25.4	16.7	11.6	3.6	0.8	794.6	97.0	82.6	54.0	0.0	921.0	257.7	2.0
31	25.7	16.7	12.3	2.7	0.5	794.6	96.0	81.5	50.0	4.8	1043.0	254.8	2.0
Mensual	26.3	15.6	9.9	4.9	0.7	794.1	98.0	84.7	42.0	372.4	1336.0	308.0	63.5

Convenciones: V.V.: Velocidad del Viento P.B.: Presión Barométrica LI.: Lluvia diaria ET.: Evapotranspiración. Nota: Datos resaltados en rojo están incompletos.



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CÓDIGO: EMM-05

MARZO DE 2011

JORNADA DIURNA - DIRECCIÓN DEL VIENTO SEGÚN LA ROSA DE LOS VIENTOS (Frecuencia relativa)

Día	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	6%	0%	0%	9%	10%	17%	0%	0%	1%	1%	1%	2%	12%	17%	16%	10%
2	3%	0%	0%	2%	20%	3%	22%	2%	1%	0%	1%	3%	3%	19%	12%	10%
3	8%	1%	11%	2%	6%	1%	1%	3%	3%	1%	1%	1%	10%	16%	24%	11%
4	4%	1%	3%	6%	12%	0%	1%	1%	0%	1%	1%	3%	12%	22%	21%	12%
5	7%	2%	1%	1%	24%	3%	4%	3%	1%	0%	1%	3%	12%	13%	15%	10%
6	1%	1%	17%	3%	40%	1%	9%	1%	0%	0%	8%	3%	3%	4%	5%	4%
7	8%	0%	3%	2%	31%	9%	1%	1%	0%	0%	3%	3%	1%	6%	18%	15%
8	2%	0%	3%	5%	31%	7%	1%	1%	1%	1%	1%	3%	13%	13%	10%	9%
9	2%	0%	1%	6%	29%	13%	2%	3%	0%	1%	1%	1%	8%	13%	15%	5%
10	2%	4%	0%	1%	6%	10%	13%	8%	6%	3%	2%	6%	8%	15%	13%	5%
11	7%	2%	1%	1%	11%	0%	0%	7%	0%	1%	1%	3%	13%	22%	17%	15%
12	3%	0%	0%	1%	13%	0%	0%	0%	0%	0%	1%	2%	9%	19%	27%	24%
13	5%	1%	1%	3%	6%	6%	0%	0%	0%	1%	0%	1%	15%	19%	26%	16%
14	9%	0%	0%	2%	15%	0%	0%	0%	0%	0%	0%	2%	8%	19%	25%	19%
15	8%	0%	0%	1%	32%	0%	0%	0%	0%	0%	0%	1%	10%	13%	16%	19%
16	6%	0%	1%	1%	18%	3%	0%	0%	0%	0%	0%	1%	3%	10%	24%	33%
17	1%	0%	0%	0%	6%	0%	16%	0%	1%	1%	1%	2%	12%	23%	17%	19%
18	7%	1%	4%	1%	20%	1%	0%	0%	0%	0%	1%	1%	7%	19%	24%	15%
19	3%	0%	0%	1%	40%	6%	2%	1%	1%	0%	0%	3%	10%	15%	13%	6%
20	0%	0%	4%	1%	7%	1%	4%	5%	1%	1%	1%	1%	6%	19%	35%	15%
21	1%	0%	0%	33%	13%	2%	4%	1%	0%	1%	3%	1%	2%	14%	9%	15%
22	0%	0%	0%	1%	17%	0%	0%	0%	0%	0%	1%	2%	19%	27%	25%	7%
23	17%	1%	3%	14%	3%	5%	2%	0%	0%	0%	1%	1%	5%	8%	38%	3%
24	2%	0%	2%	6%	15%	10%	0%	0%	0%	0%	0%	1%	3%	11%	28%	22%
25	14%	0%	0%	0%	24%	3%	1%	1%	3%	1%	1%	4%	8%	20%	16%	3%
26	1%	0%	0%	0%	18%	1%	3%	0%	7%	3%	1%	7%	16%	11%	17%	16%
27	2%	0%	3%	10%	43%	1%	1%	0%	0%	0%	1%	0%	5%	6%	16%	13%
28	10%	1%	1%	1%	35%	3%	2%	1%	3%	1%	1%	1%	1%	10%	13%	15%
29	19%	0%	0%	2%	27%	1%	0%	0%	0%	0%	1%	2%	5%	10%	18%	15%
30	4%	0%	10%	2%	16%	8%	1%	1%	3%	1%	2%	1%	6%	18%	15%	13%
31	9%	1%	1%	7%	23%	2%	3%	1%	8%	0%	0%	0%	1%	3%	23%	18%
Mensual	6%	1%	2%	4%	20%	4%	3%	1%	1%	1%	1%	2%	8%	15%	19%	13%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	E	NO	ONO	NNO	O	N	ENE	ESE	SE	NE	OSO	SSE	S	SO	SSO	NNE
F. R.	20%	19%	15%	13%	8%	6%	4%	4%	3%	2%	2%	1%	1%	1%	1%	1%

Convenciones: R. V.: Rosa de los Vientos F. R.: Frecuencia Relativa. Nota: Datos resaltados en rojo están incompletos.



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MARZO DE 2011

JORNADA NOCTURNA - DIRECCIÓN DEL VIENTO SEGÚN LA ROSA DE LOS VIENTOS (Frecuencia relativa)

DÍA	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	0%	0%	1%	8%	84%	5%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2	13%	1%	3%	1%	24%	2%	20%	1%	6%	0%	2%	2%	4%	8%	7%	6%
3	0%	0%	3%	4%	48%	15%	29%	1%	0%	0%	0%	0%	0%	0%	0%	0%
4	0%	0%	4%	17%	70%	8%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5	0%	2%	15%	3%	77%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6	0%	1%	4%	26%	31%	18%	0%	0%	2%	0%	4%	4%	1%	6%	2%	0%
7	0%	0%	0%	19%	66%	13%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
8	2%	1%	3%	13%	78%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9	15%	5%	6%	4%	13%	4%	5%	8%	0%	0%	0%	1%	13%	8%	16%	3%
10	2%	2%	1%	6%	69%	2%	8%	1%	1%	3%	1%	1%	0%	4%	0%	0%
11	10%	0%	1%	15%	74%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
12	1%	0%	0%	6%	70%	3%	1%	3%	1%	0%	0%	1%	5%	1%	1%	7%
13	8%	2%	3%	17%	66%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
14	1%	0%	0%	8%	80%	2%	1%	0%	0%	0%	0%	0%	0%	1%	5%	1%
15	0%	0%	0%	16%	81%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
16	4%	1%	3%	17%	40%	27%	1%	0%	0%	0%	0%	0%	0%	0%	0%	6%
17	1%	0%	16%	34%	44%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%
18	3%	1%	1%	4%	68%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
19	0%	0%	1%	10%	78%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
20	0%	12%	19%	1%	48%	1%	0%	0%	0%	0%	0%	0%	0%	8%	3%	8%
21	0%	0%	15%	42%	37%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
22	5%	0%	22%	4%	45%	0%	0%	0%	0%	0%	0%	0%	1%	0%	17%	6%
23	19%	8%	15%	15%	2%	0%	0%	0%	0%	0%	0%	0%	2%	2%	15%	22%
24	0%	0%	9%	15%	71%	3%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%
25	11%	0%	0%	2%	69%	14%	1%	0%	0%	0%	0%	0%	0%	1%	1%	1%
26	0%	0%	0%	3%	67%	23%	3%	1%	0%	0%	0%	0%	3%	0%	0%	0%
27	0%	0%	1%	13%	76%	10%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
28	0%	0%	0%	7%	83%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
29	1%	0%	1%	10%	77%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
30	8%	0%	3%	15%	67%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
31	7%	1%	3%	13%	67%	5%	0%	0%	0%	0%	0%	0%	0%	1%	1%	2%
Mensual	4%	1%	5%	12%	60%	7%	2%	1%	0%	0%	0%	0%	1%	1%	2%	3%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	E	ENE	ESE	NE	N	NNO	SE	NO	ONO	NNE	O	SSE	S	OSO	SO	SSO
F. R.	60%	12%	7%	5%	4%	3%	2%	2%	1%	1%	1%	1%	0%	0%	0%	0%

Convenciones: R. V.: Rosa de los Vientos F. R.: Frecuencia Relativa. Nota: Datos resaltados en rojo están incompletos.