



# 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 ALCÁZARES

CÓDIGO: EMM-13

JUNIO DE 2011

### RESUMEN DIARIO Y MENSUAL DE VARIABLES METEOROLÓGICAS

Variables Dia	Temperatura del Aire (°C)			V.V. (m/s)		P.B. (HPa)	Humedad Relativa (%)			LI. (mm)	Radiación Solar (W/m <sup>2</sup> )		ET. (mm)
	Máxima	Media	Mínima	Máxima	Media	Media	Máxima	Media	Mínima	Suma	Máxima	Media	Suma
1	19.2	16.5	15.4	3.6	0.8	805.5	98.0	94.2	83.0	14.4	668.0	167.4	1.2
2	17.2	16.0	14.2	4.0	0.7	807.4	97.0	94.7	90.0	45.8	404.0	155.3	1.1
3	19.1	16.3	14.3	2.2	0.5	807.7	97.0	93.6	86.0	6.2	445.0	187.6	1.3
4	19.2	16.3	14.6	6.3	0.9	807.3	97.0	92.2	86.0	14.6	605.0	178.2	1.3
5	23.0	17.8	14.9	3.6	1.1	806.7	95.0	85.0	67.0	0.2	1188.0	373.9	3.1
6	21.9	17.8	15.2	3.1	0.7	806.2	97.0	88.6	72.0	0.0	1178.0	242.5	1.9
7	20.9	17.1	15.4	3.6	0.8	806.4	98.0	91.5	76.0	7.4	1151.0	220.1	1.7
8	23.2	18.6	15.5	3.6	0.9	805.9	93.0	83.7	67.0	0.0	1192.0	324.6	2.8
9	23.9	19.4	16.4	4.0	1.2	804.6	94.0	81.8	63.0	0.0	1167.0	375.0	3.3
10	24.2	19.7	16.7	4.0	1.1	803.2	92.0	81.1	61.0	0.0	1113.0	378.0	3.3
11	25.2	19.9	16.7	4.9	1.0	801.8	94.0	79.1	56.0	0.0	904.0	424.9	3.6
12	25.0	20.3	17.1	4.9	1.4	800.8	89.0	76.8	56.0	0.0	1060.0	396.9	3.6
13	25.0	20.1	16.7	4.5	1.1	801.6	93.0	79.2	58.0	0.4	1085.0	427.6	3.6
14	21.1	18.4	17.0	4.0	1.0	802.6	94.0	84.0	67.0	0.4	861.0	194.4	1.7
15	22.8	18.6	15.9	4.9	1.2	803.5	88.0	79.2	63.0	0.0	1125.0	339.3	2.9
16	20.5	17.5	15.9	3.6	0.6	804.3	94.0	87.8	80.0	0.0	673.0	206.5	1.6
17	21.1	17.5	15.6	3.1	0.5	805.4	95.0	88.8	75.0	0.0	835.0	194.7	1.5
18	21.4	17.8	15.4	3.1	0.7	806.2	94.0	86.7	68.0	0.0	1223.0	266.7	2.1
19	19.9	17.3	15.4	2.7	0.6	805.7	94.0	88.0	76.0	0.6	510.0	161.0	1.2
20	20.4	17.2	15.1	4.9	1.5	805.0	91.0	84.6	78.0	1.4	1023.0	237.7	2.1
21	23.7	18.7	14.6	4.5	1.3	804.3	87.0	78.3	56.0	0.6	1104.0	396.2	3.5
22	22.8	18.4	15.2	4.0	1.0	804.0	96.0	84.6	70.0	30.2	1194.0	274.5	2.4
23	21.1	17.1	15.7	2.7	0.4	804.7	97.0	91.5	78.0	2.2	1273.0	199.3	1.5
24	20.7	17.2	15.1	2.7	0.5	804.3	97.0	90.9	78.0	2.4	823.0	210.5	1.6
25	17.6	15.8	14.4	4.5	0.6	805.8	97.0	92.3	82.0	13.8	494.0	150.1	1.1
26	21.6	17.3	14.1	4.0	0.7	805.7	97.0	88.3	75.0	0.0	1220.0	346.3	2.6
27	22.1	17.4	14.4	4.5	1.0	805.1	97.0	86.7	66.0	3.2	1025.0	248.6	2.0
28	23.2	18.9	15.3	4.9	1.8	804.0	86.0	75.6	62.0	0.0	1074.0	398.3	3.5
29	20.9	17.8	15.3	4.0	1.2	803.6	92.0	84.3	73.0	0.0	1204.0	185.8	1.7
30	21.6	16.8	15.0	4.5	1.3	804.1	95.0	86.6	74.0	2.4	1153.0	202.2	1.7
<b>Mensual</b>	<b>25.2</b>	<b>17.8</b>	<b>14.1</b>	<b>6.3</b>	<b>0.9</b>	<b>804.8</b>	<b>98.0</b>	<b>86.0</b>	<b>56.0</b>	<b>146.2</b>	<b>1273.0</b>	<b>268.8</b>	<b>66.1</b>

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-13

JUNIO 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	1%	0%	0%	0%	1%	1%	7%	6%	3%	8%	17%	3%	13%	23%	6%	10%
2	3%	3%	1%	0%	3%	6%	6%	3%	0%	0%	0%	1%	13%	28%	19%	14%
3	0%	0%	0%	0%	0%	0%	2%	14%	0%	0%	1%	2%	10%	49%	22%	1%
4	8%	0%	4%	0%	1%	3%	3%	10%	2%	3%	1%	2%	13%	29%	12%	8%
5	12%	7%	0%	0%	0%	0%	8%	4%	0%	5%	1%	3%	17%	16%	11%	17%
6	6%	3%	0%	0%	0%	1%	1%	0%	0%	8%	0%	6%	17%	27%	24%	8%
7	3%	1%	0%	2%	0%	0%	1%	0%	1%	0%	1%	13%	17%	22%	23%	15%
8	6%	3%	1%	1%	0%	8%	3%	1%	0%	1%	5%	5%	15%	30%	15%	6%
9	10%	0%	7%	0%	0%	2%	3%	3%	0%	0%	1%	6%	13%	18%	23%	13%
10	3%	0%	0%	0%	0%	0%	1%	10%	1%	1%	6%	8%	17%	31%	17%	7%
11	3%	1%	1%	4%	0%	1%	5%	3%	0%	1%	3%	7%	30%	14%	17%	7%
12	6%	5%	1%	1%	0%	1%	6%	6%	3%	1%	1%	3%	21%	19%	19%	7%
13	10%	3%	4%	3%	0%	1%	1%	1%	3%	1%	3%	7%	16%	19%	20%	9%
14	7%	1%	1%	1%	6%	1%	0%	4%	0%	0%	0%	4%	10%	32%	26%	6%
15	2%	1%	1%	5%	0%	1%	2%	2%	0%	1%	2%	8%	12%	24%	26%	13%
16	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	17%	1%	13%	44%	16%	6%
17	1%	3%	1%	0%	0%	1%	1%	1%	0%	1%	13%	1%	13%	38%	22%	4%
18	3%	1%	0%	0%	0%	1%	4%	0%	7%	0%	1%	6%	17%	31%	21%	8%
19	4%	0%	1%	2%	15%	4%	6%	1%	1%	3%	1%	3%	13%	22%	18%	6%
20	7%	1%	0%	3%	6%	6%	11%	6%	2%	2%	4%	2%	13%	21%	8%	8%
21	2%	5%	0%	3%	6%	3%	1%	0%	1%	2%	1%	8%	17%	23%	22%	8%
22	2%	1%	1%	1%	1%	1%	4%	5%	5%	4%	2%	2%	12%	28%	17%	13%
23	1%	0%	0%	0%	0%	0%	0%	0%	2%	1%	8%	9%	21%	38%	16%	5%
24	3%	3%	1%	0%	3%	3%	0%	3%	1%	0%	13%	9%	4%	17%	21%	19%
25	1%	2%	0%	0%	0%	1%	5%	1%	16%	9%	6%	4%	10%	36%	8%	2%
26	1%	0%	0%	0%	0%	3%	0%	0%	0%	0%	2%	17%	26%	32%	14%	4%
27	11%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	3%	12%	20%	43%	9%
28	5%	0%	0%	3%	0%	1%	8%	8%	0%	1%	2%	7%	16%	19%	20%	10%
29	3%	1%	2%	0%	2%	9%	5%	2%	0%	1%	1%	2%	8%	43%	15%	6%
30	3%	1%	1%	1%	8%	6%	8%	8%	3%	1%	1%	3%	15%	18%	14%	8%
Mensual	4%	2%	1%	1%	2%	2%	3%	3%	2%	2%	4%	5%	15%	27%	19%	9%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	ONO	NO	O	NNO	OSO	N	SO	SE	SSE	ESE	SSO	E	S	NNE	NE	ENE
F. R.	27%	19%	15%	9%	5%	4%	4%	3%	3%	2%	2%	2%	2%	2%	1%	1%

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



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CÓDIGO: EMM-13

JUNIO DE 2011



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

DIA	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSO	SO	OSO	O	ONO	NO	NNO
1	0%	0%	0%	0%	0%	1%	16%	23%	25%	4%	9%	5%	5%	3%	9%	1%
2	10%	8%	2%	2%	8%	9%	38%	9%	0%	1%	2%	2%	1%	3%	0%	4%
3	0%	0%	0%	0%	4%	17%	18%	30%	2%	0%	1%	1%	0%	27%	0%	0%
4	10%	0%	1%	6%	17%	24%	17%	8%	3%	0%	1%	1%	0%	6%	5%	0%
5	8%	0%	1%	1%	0%	3%	26%	24%	3%	1%	0%	1%	1%	9%	9%	13%
6	1%	8%	6%	3%	8%	8%	8%	1%	3%	2%	1%	4%	6%	13%	25%	2%
7	0%	0%	11%	0%	0%	0%	13%	25%	6%	8%	13%	19%	6%	0%	0%	0%
8	0%	0%	3%	0%	2%	12%	24%	33%	0%	0%	0%	0%	0%	20%	5%	0%
9	0%	10%	0%	4%	1%	6%	46%	26%	3%	0%	0%	0%	0%	0%	4%	1%
10	1%	10%	1%	3%	2%	1%	26%	25%	1%	0%	0%	0%	0%	8%	11%	9%
11	3%	0%	4%	0%	0%	4%	24%	22%	3%	3%	0%	0%	0%	0%	22%	16%
12	7%	7%	4%	3%	1%	12%	36%	22%	3%	0%	0%	0%	0%	0%	1%	3%
13	1%	2%	2%	6%	0%	12%	24%	26%	8%	0%	0%	0%	0%	6%	5%	8%
14	0%	0%	0%	3%	17%	1%	28%	42%	9%	0%	0%	0%	0%	0%	0%	0%
15	0%	12%	0%	7%	0%	3%	28%	22%	15%	0%	0%	4%	3%	0%	7%	0%
16	0%	0%	0%	5%	1%	1%	21%	9%	8%	2%	14%	0%	0%	40%	0%	0%
17	0%	0%	0%	0%	0%	1%	5%	8%	13%	24%	16%	27%	3%	3%	0%	0%
18	0%	0%	0%	0%	0%	27%	10%	10%	15%	4%	0%	7%	15%	12%	0%	0%
19	5%	0%	0%	1%	5%	6%	14%	38%	13%	9%	1%	3%	5%	0%	0%	1%
20	0%	0%	0%	1%	8%	11%	35%	40%	3%	1%	0%	0%	0%	2%	0%	0%
21	0%	0%	0%	0%	3%	3%	38%	22%	8%	5%	2%	3%	0%	17%	0%	0%
22	3%	3%	1%	0%	6%	17%	32%	19%	1%	7%	1%	0%	3%	2%	2%	3%
23	0%	1%	0%	24%	1%	0%	15%	1%	38%	0%	0%	0%	8%	11%	0%	0%
24	2%	1%	0%	2%	29%	3%	1%	3%	16%	1%	26%	10%	0%	1%	4%	1%
25	3%	0%	0%	3%	11%	3%	14%	1%	47%	1%	4%	0%	0%	8%	2%	2%
26	0%	0%	0%	0%	0%	1%	2%	26%	47%	4%	1%	0%	1%	16%	0%	0%
27	8%	2%	0%	0%	2%	3%	27%	22%	13%	2%	0%	0%	0%	5%	8%	9%
28	0%	0%	0%	0%	0%	3%	48%	40%	2%	1%	0%	0%	0%	0%	6%	0%
29	0%	0%	0%	1%	2%	11%	36%	26%	3%	0%	0%	13%	0%	6%	0%	0%
30	0%	0%	0%	3%	12%	12%	25%	22%	10%	2%	7%	0%	0%	0%	7%	0%
Mensual	2%	2%	1%	3%	5%	7%	23%	21%	11%	3%	3%	3%	2%	7%	4%	2%

DIRECCIÓN DEL VIENTO EN EL MES ORDENADA DE MAYOR A MENOR PREDOMINANCIA																
R. V.	SE	SSE	S	ONO	ESE	E	NO	OSO	SO	SSO	ENE	NNO	N	NNE	O	NE
F. R.	23%	21%	11%	7%	7%	5%	4%	3%	3%	3%	3%	2%	2%	2%	2%	1%

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