



AGROMETEOROLOGICAL BULLETIN

*August 2011
2nd 10-day period*

- Temperature
- Relative Humidity
- Soil Temperature
- Sunshine Duration
- Precipitation
- Evaporation
- Growing Degrees
- Reference Evapotranspiration
- Accumulated Rainfall from the beginning of wet period
- Accumulated Reference Evapotranspiration
- Number of dry days



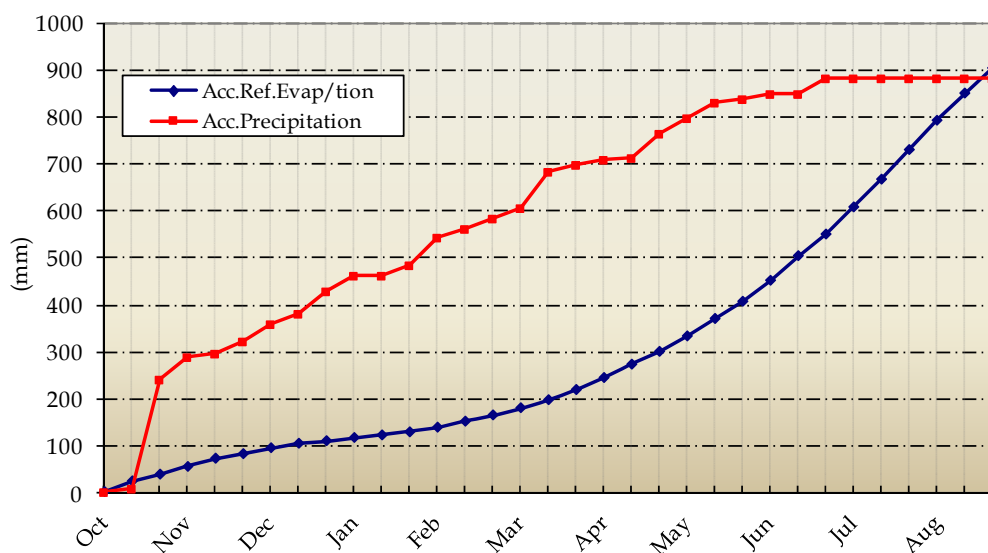
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2nd 10-day period (11-20/08/2011)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.2	31.5	33.2	34.6	35.8	36.6	37.4	37.4	37.6	38.0	35.5	-	33.5
	Min	23.0	15.8	16.4	16.5	17.2	16.0	19.0	18.0	20.0	19.2	18.1	-	17.4
Relative Humidity	Max	46	65	90	82	88	82	85	88	81	85	79	-	-
	Min	20	34	26	20	29	30	26	23	27	24	26	-	-
Soil Temperature at 10 cm	06 UTC	31.6	30.0	30.0	30.0	30.4	30.0	30.4	30.8	31.2	31.2	30.6	-	27.0
	12 UTC	35.6	36.0	35.2	34.4	35.4	35.0	35.6	35.8	36.2	36.0	35.5	-	33.0
Sunshine Duration		13.0	12.7	12.5	12.6	12.5	8.3	11.6	11.2	11.8	12.4	11.9	-	10.6
Precipitation													-	4.5
Evaporation		9.4	9.0	9.5	6.1	8.0	7.1	7.4	8.0	8.5	9.4	82.4	-	74.4
Growing Degrees	5	23.1	18.7	19.8	20.6	21.5	21.3	23.2	22.7	23.8	23.6	218.2	-	204.3
	10	18.1	13.7	14.8	15.6	16.5	16.3	18.2	17.7	18.8	18.6	168.2	-	154.3

2nd 10-day period (11-20/08/2011)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	53.8	-	49.8
Precipitation - Reference Evapotranspiration	-53.8	-	-45.3
Number of Rainy Days	0.0	-	1.0
Number of Dry Days	64.0	-	-

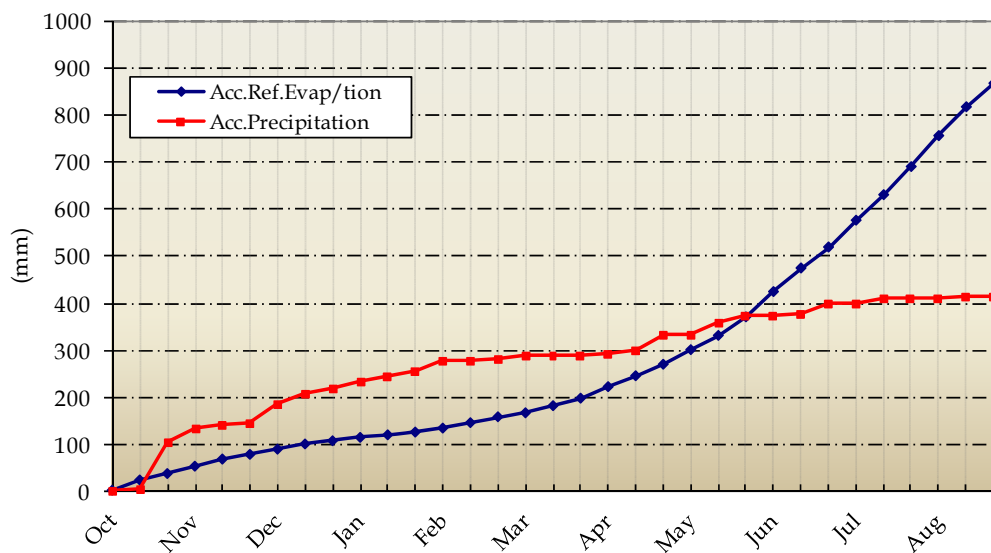
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/08/2011)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.2	28.8	31.0	31.4	33.2	33.6	33.4	34.2	32.0	33.2	31.8	36.5	30.5
	Min	17.4	15.0	15.6	17.2	18.4	19.6	19.4	24.0	20.4	18.0	18.5	23.4	17.7
Relative Humidity	Max	88	80	83	86	74	76	77	70	67	75	78	74	-
	Min	51	30	39	32	35	30	37	33	24	26	34	31	-
Soil Temperature at 10 cm	06 UTC	28.0	26.4	25.0	24.8	28.0	26.2	26.4	27.0	29.2	26.0	26.7	30.2	23.8
	12 UTC	28.6	27.4	26.6	29.6	30.0	29.0	30.0	30.6	29.4	28.8	29.0	32.2	27.9
Sunshine Duration		4.8	12.0	12.6	8.8	12.4	6.2	11.3	11.1	12.4	12.5	10.4	12.1	10.0
Precipitation		0.7										0.7		3.9
Evaporation		3.0	8.3	6.9	-	11.5	7.9	8.0	8.7	9.2	8.3	-	-	94.5
Growing Degrees	5	17.3	16.9	18.3	19.3	20.8	21.6	21.4	24.1	21.2	20.6	201.5	249.6	191.3
	10	12.3	11.9	13.3	14.3	15.8	16.6	16.4	19.1	16.2	15.6	151.5	199.6	141.3

2nd 10-day period (11-20/08/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	50.2	61.5	55.4
Precipitation - Reference Evapotranspiration	-49.5	-61.5	-51.5
Number of Rainy Days	1.0	0.0	1.0
Number of Dry Days	8.0	23.0	-

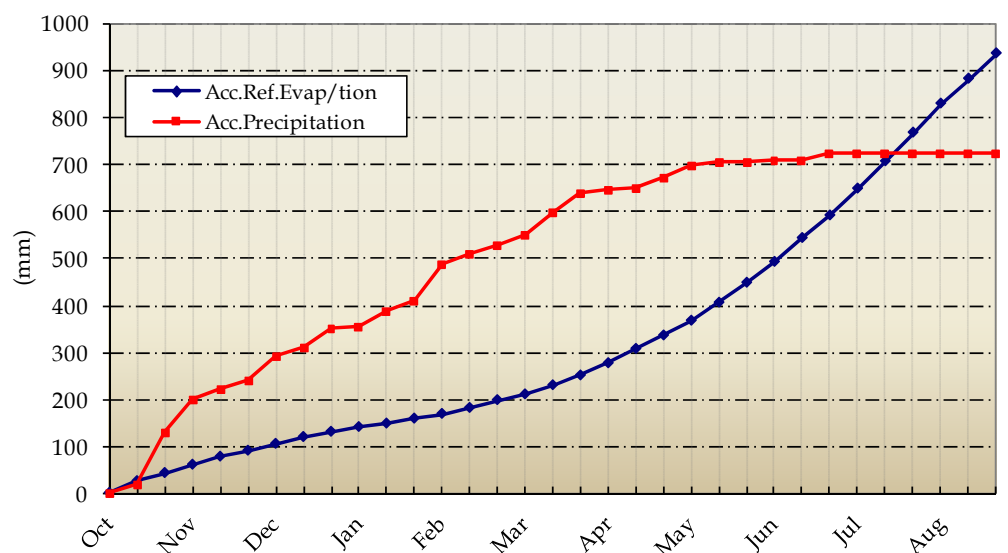
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/08/2011)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.0	30.2	29.0	30.2	30.8	30.6	34.0	34.6	34.2	34.0	31.8	33.1	31.2
	Min	22.0	19.0	18.4	17.6	18.0	18.4	19.4	18.2	19.4	19.4	19.0	20.5	18.7
Relative Humidity	Max	82	86	90	86	88	90	87	80	89	89	87	90	-
	Min	34	45	37	31	34	36	32	29	32	32	34	37	-
Soil Temperature at 10 cm	06 UTC	28.6	26.6	33.0	29.0	27.4	27.2	27.5	27.8	28.2	26.2	28.2	29.0	27.4
	12 UTC	33.2	34.0	34.2	34.6	34.0	33.6	34.0	34.0	34.2	34.5	34.0	35.5	31.7
Sunshine Duration		11.8	10.6	11.0	11.9	11.4	10.2	11.2	11.2	11.0	11.5	11.2	11.5	11.2
Precipitation														4.0
Evaporation		9.8	6.7	6.6	8.2	6.1	7.7	9.9	7.1	8.0	10.8	80.9	-	73.5
Growing Degrees	5	21.0	19.6	18.7	18.9	19.4	19.5	21.7	21.4	21.8	21.7	203.7	217.9	199.2
	10	16.0	14.6	13.7	13.9	14.4	14.5	16.7	16.4	16.8	16.7	153.7	167.9	149.2

2nd 10-day period (11-20/08/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	54.0	54.1	49.2
Precipitation - Reference Evapotranspiration	-54.0	-54.1	-45.2
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	66.0	58.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

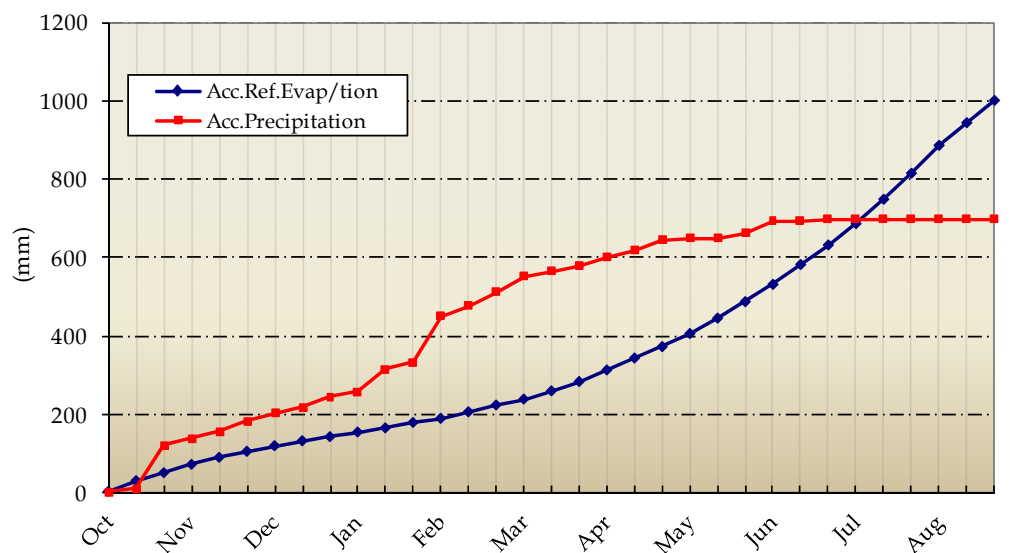


Kalamata

2nd 10-day period (11-20/08/2011)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.0	30.0	28.8	30.4	31.2	32.0	35.6	36.4	35.0	31.4	32.1	34.8	31.4
	Min	22.2	19.0	17.0	16.8	18.8	20.0	20.4	20.2	19.6	20.4	19.4	20.6	18.2
Relative Humidity	Max	89	88	90	90	90	81	75	88	95	96	88	81	-
	Min	49	39	46	40	32	34	26	27	24	39	36	33	-
Soil Temperature at 10 cm	06 UTC	27.0	26.8	26.0	26.0	26.2	26.0	26.0	26.0	27.0	27.2	26.4	26.5	25.7
	12 UTC	29.6	29.6	29.0	28.8	28.6	29.0	28.6	29.0	29.4	29.6	29.1	29.1	29.6
Sunshine Duration		9.7	11.3	12.1	10.6	11.7	8.9	9.9	10.1	10.4	12.4	10.7	12.0	10.6
Precipitation			0.0									0.0		3.9
Evaporation		1.6	8.8	7.8	1.8	2.0	5.0	11.0	3.0	5.6	4.4	51.0	76.0	78.6
Growing Degrees	5	21.1	19.5	17.9	18.6	20.0	21.0	23.0	23.3	22.3	20.9	207.6	227.2	198.2
	10	16.1	14.5	12.9	13.6	15.0	16.0	18.0	18.3	17.3	15.9	157.6	177.2	148.2

2nd 10-day period (11-20/08/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.0	61.7	50.7
Precipitation - Reference Evapotranspiration	-57.0	-61.7	-46.8
Number of Rainy Days	0.0	0.0	0.7
Number of Dry Days	66.0	58.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

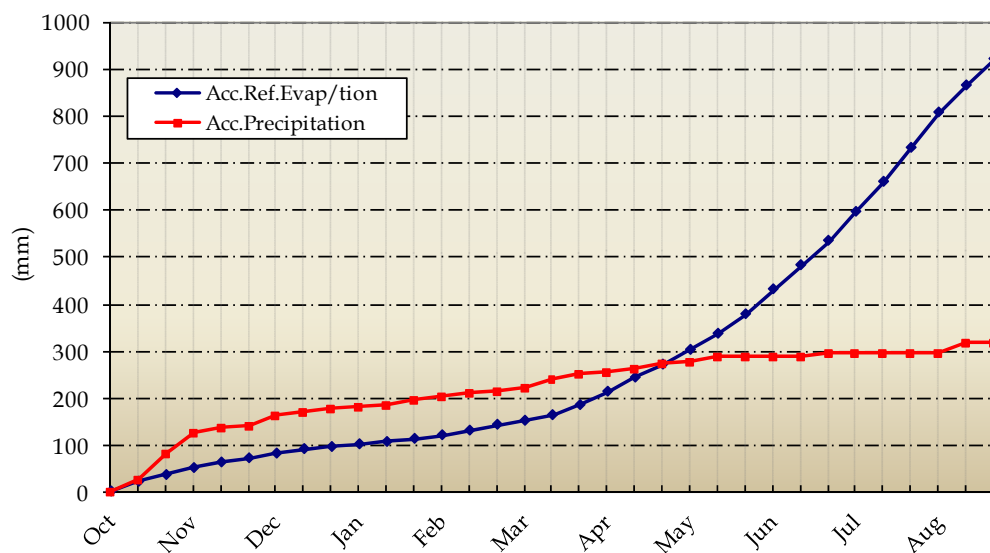


Larisa

2nd 10-day period (11-20/08/2011)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.4	30.6	32.8	34.4	34.0	35.4	34.6	34.0	33.0	34.0	33.1	37.2	32.3
	Min	18.6	14.2	13.6	17.0	20.8	19.8	21.4	22.0	20.6	19.4	18.7	21.3	17.5
Relative Humidity	Max	76	83	86	80	73	81	76	71	80	78	78	69	-
	Min	33	26	29	23	27	29	26	34	37	36	30	25	-
Soil Temperature at 10 cm	06 UTC	25.6	25.8	25.8	26.0	26.0	27.4	27.6	27.0	28.2	28.0	26.7	28.0	26.4
	12 UTC	28.0	28.2	27.2	27.6	26.6	29.2	30.0	30.0	30.2	30.0	28.7	31.2	28.7
Sunshine Duration		12.5	12.3	12.3	12.1	12.0	11.7	11.3	11.6	12.1	12.1	12.0	11.9	9.9
Precipitation														6.2
Evaporation		4.6	5.9	7.2	6.3	10.3	10.4	12.1	7.4	8.5	9.3	82.0	113.3	84.1
Growing Degrees	5	18.5	17.4	18.2	20.7	22.4	22.6	23.0	23.0	21.8	21.7	209.3	242.5	199.1
	10	13.5	12.4	13.2	15.7	17.4	17.6	18.0	18.0	16.8	16.7	159.3	192.5	149.1

2nd 10-day period (11-20/08/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	56.3	65.3	53.3
Precipitation - Reference Evapotranspiration	-56.3	-65.3	-47.1
Number of Rainy Days	0.0	0.0	1.4
Number of Dry Days	10.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

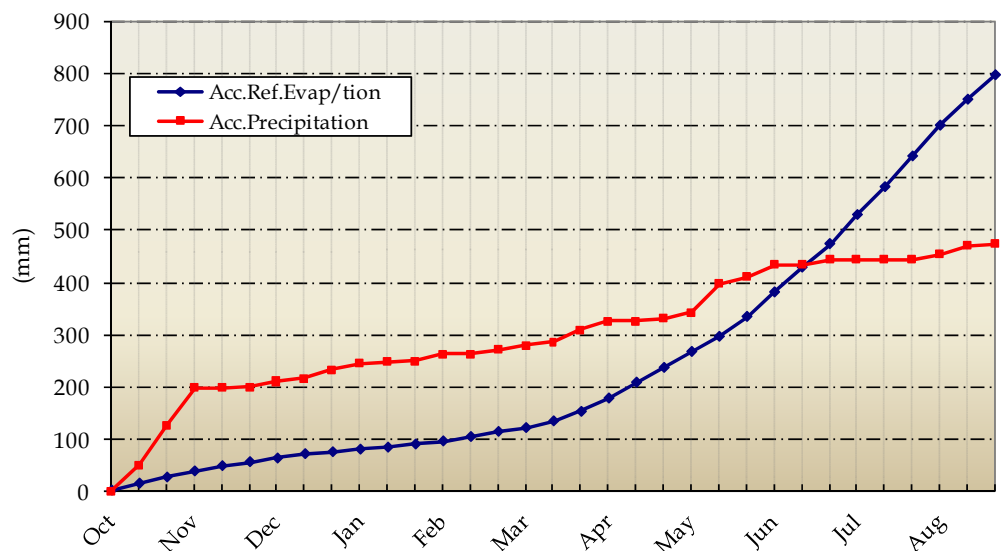


2nd 10-day period (11-20/08/2011)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.6	31.4	33.8	35.0	36.6	37.2	36.8	36.4	34.6	36.8	34.8	38.5	32.0
	Min	17.0	14.6	15.2	17.8	17.8	19.2	20.2	20.8	21.4	19.4	18.3	21.8	18.0
Relative Humidity	Max	76	85	88	93	88	88	85	81	80	83	85	60	-
	Min	25	18	20	22	19	20	19	23	30	27	22	23	-
Soil Temperature at 10 cm	06 UTC	26.8	25.4	26.0	27.0	27.2	28.0	28.4	29.2	29.4	29.0	27.6	29.1	25.4
	12 UTC	28.6	28.6	29.0	30.0	30.2	30.4	30.4	30.4	30.4	30.6	29.9	30.5	28.7
Sunshine Duration		10.4	12.2	12.0	10.0	11.9	11.6	9.3	11.4	10.7	10.8	11.0	11.4	9.8
Precipitation		4.7										4.7		9.6
Evaporation		6.8	7.2	6.0	4.8	6.2	4.9	7.3	6.4	5.4	5.8	60.8	82.0	67.0
Growing Degrees	5	18.3	18.0	19.5	21.4	22.2	23.2	23.5	23.6	23.0	23.1	215.8	251.6	200.2
	10	13.3	13.0	14.5	16.4	17.2	18.2	18.5	18.6	18.0	18.1	165.8	201.6	150.2

Series

2nd 10-day period (11-20/08/2011)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	47.0	49.9
Precipitation - Reference Evapotranspiration	-42.3	-49.9
Number of Rainy Days	1.0	0.0
Number of Dry Days	0.0	25.0

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

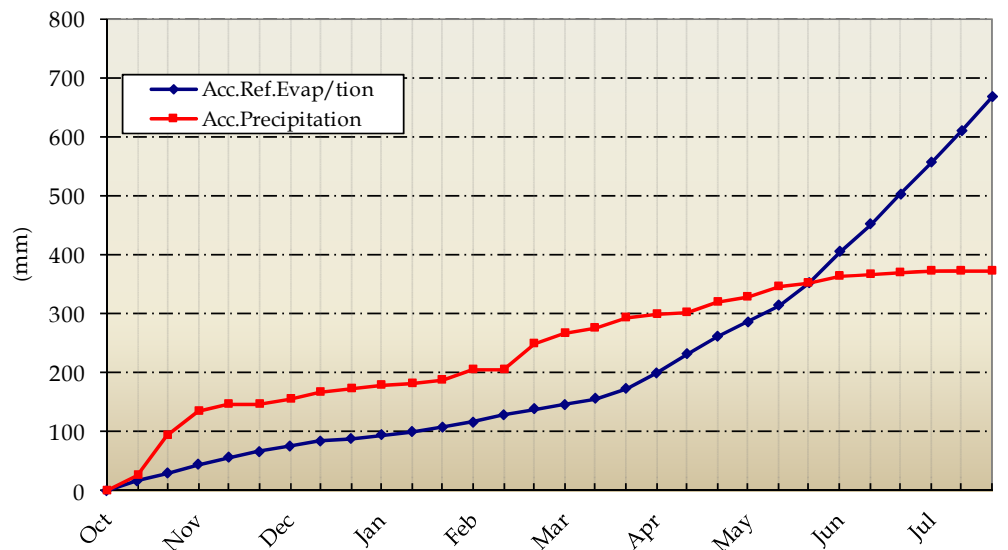


2nd 10-day period (11-20/08/2011)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	-	-	-	-	-	-	-	-	-	-	-	37.2	31.7
	Min	-	-	-	-	-	-	-	-	-	-	-	21.1	17.9
Relative Humidity	Max	-	-	-	-	-	-	-	-	-	-	-	93	-
	Min	-	-	-	-	-	-	-	-	-	-	-	35	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	28.1	25.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	30.9	27.2
Sunshine Duration		-	-	-	-	-	-	-	-	-	-	-	11.2	9.5
Precipitation		-	-	-	-	-	-	-	-	-	-	-	-	3.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	56.6
Growing Degrees	5	-	-	-	-	-	-	-	-	-	-	-	241.6	197.6
	10	-	-	-	-	-	-	-	-	-	-	-	191.6	147.6

2nd 10-day period (11-20/08/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	52.3	44.1
Precipitation - Reference Evapotranspiration	-	-52.3	-40.4
Number of Rainy Days	-	0.0	1.0
Number of Dry Days	-	15.0	-

The station is temporarily closed

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

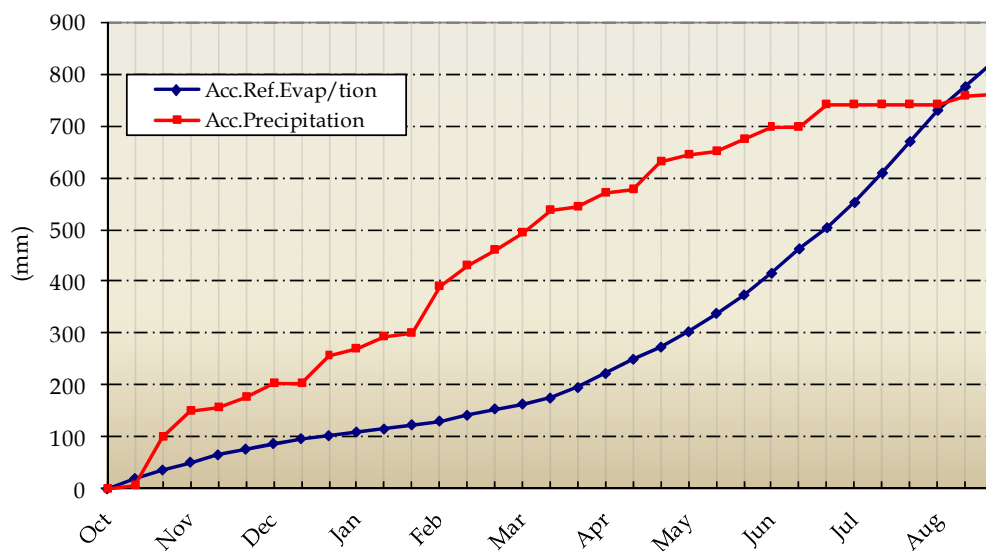


Tripoli

2nd 10-day period (11-20/08/2011)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.0	29.2	30.2	30.6	32.0	31.2	31.6	32.2	31.8	30.4	30.7	-	29.9
	Min	18.2	11.6	12.0	13.0	14.0	14.6	14.0	17.8	15.0	19.8	15.0	-	14.5
Relative Humidity	Max	76	88	91	91	80	93	79	56	83	68	80	-	-
	Min	39	28	28	26	24	28	28	34	32	28	30	-	-
Soil Temperature at 10 cm	06 UTC	26.4	23.8	24.4	24.2	24.0	23.6	24.2	25.4	24.4	26.0	24.6	-	24.7
	12 UTC	30.4	30.8	30.8	31.4	31.2	28.8	30.0	30.8	30.2	31.2	30.6	-	27.4
Sunshine Duration		7.5	11.1	8.3	10.1	7.5	8.8	12.2	12.1	12.0	12.0	10.2	-	9.7
Precipitation						3.0						3.0	-	13.8
Evaporation		6.3	7.3	4.8	5.6	6.8	5.3	9.0	9.8	7.0	9.2	71.1	-	56.3
Growing Degrees	5	18.1	15.4	16.1	16.8	18.0	17.9	17.8	20.0	18.4	20.1	178.6	-	172.3
	10	13.1	10.4	11.1	11.8	13.0	12.9	12.8	15.0	13.4	15.1	128.6	-	122.3

2nd 10-day period (11-20/08/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	48.1	-	47.6
Precipitation - Reference Evapotranspiration	-45.1	-	-33.8
Number of Rainy Days	1.0	-	1.4
Number of Dry Days	8.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

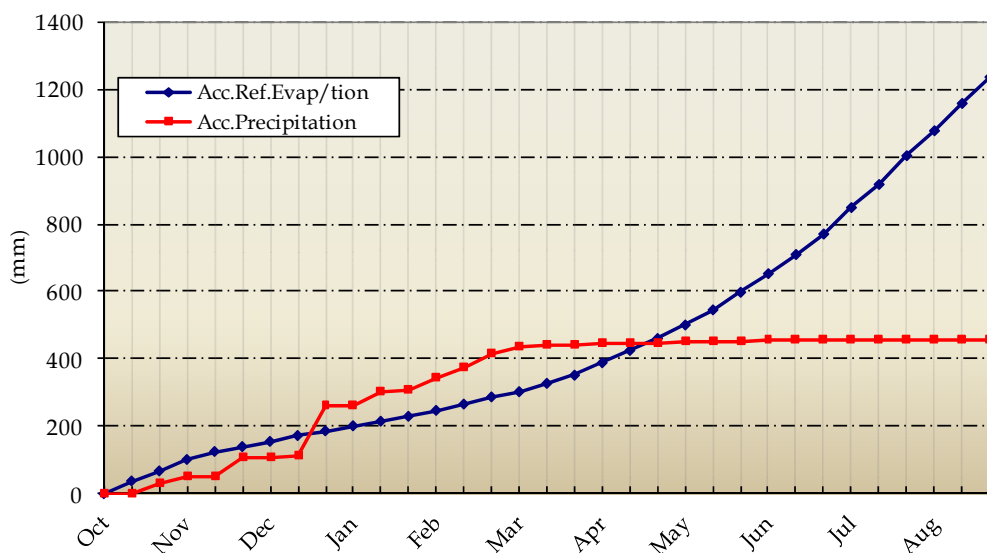


Tympaki

2nd 10-day period (11-20/08/2011)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.6	29.8	31.8	33.2	29.6	34.8	34.8	34.8	34.0	30.2	32.5	34.5	31.8
	Min	25.4	18.8	19.4	19.0	19.6	20.8	20.4	19.6	23.4	25.6	21.2	23.9	20.7
Relative Humidity	Max	53	72	71	49	63	58	63	55	54	50	59	78	-
	Min	37	32	31	23	28	31	21	23	23	24	27	28	-
Soil Temperature at 10 cm	06 UTC	31.2	29.2	29.2	28.8	29.2	29.8	30.0	30.2	30.6	29.6	29.8	31.8	30.5
	12 UTC	35.0	33.4	33.4	34.2	35.0	35.4	35.0	34.8	34.8	33.2	34.4	37.1	34.5
Sunshine Duration		12.6	12.7	12.4	12.2	12.6	12.5	12.3	11.8	12.4	12.4	12.4	10.7	11.4
Precipitation														0.0
Evaporation		14.0	12.1	12.1	10.9	11.4	12.7	13.8	14.5	15.2	16.9	133.6	115.2	112.9
Growing Degrees	5	23.5	19.3	20.6	21.1	19.6	22.8	22.6	22.2	23.7	22.9	218.3	242.1	211.9
	10	18.5	14.3	15.6	16.1	14.6	17.8	17.6	17.2	18.7	17.9	168.3	192.1	162.0

2nd 10-day period (11-20/08/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	78.2	64.6	61.8
Precipitation - Reference Evapotranspiration	-78.2	-64.6	-61.8
Number of Rainy Days	0.0	0.0	0.0
Number of Dry Days	84.0	76.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





◆ **List of Symbols and Abbreviations**

Reference Evapotranspiration ETo (mm):

Calculated by the FAO Penman-Montieth equation

$$ET_0 = \frac{0.408 * \Delta * (R_n - G) + \gamma * \frac{900}{T + 273} * u_2 * (e_s - e_a)}{\Delta + \gamma * (1 + 0.34 * u_2)}$$

using 10-day step.

R_n is estimated from sunshine measurements and G assumed to be zero.

Growing Degrees: Degrees with mean temperature exceeding the base of 5 or 10 °C.

Number of Rainy Days: Number of days with precipitation of at least 0.1 mm.

Number of Dry Days: Number of dry days recorded since the last rainy day.

Measurements Units

- ◆ Temperature : °C
- ◆ Relative Humidity : %
- ◆ Soil Temperature : °C
- ◆ Sunshine Duration : Hours
- ◆ Precipitation : mm
- ◆ Evaporation (Pan) : mm
- ◆ Growing Degrees : °C

UTC (Universal Time coordinates) in Greece

- ◆ Winter : Time(UTC) = Local time - 2
- ◆ Summer : Time(UTC) = Local time - 3

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