



AGROMETEOROLOGICAL BULLETIN

*August 2014
1st 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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www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr*

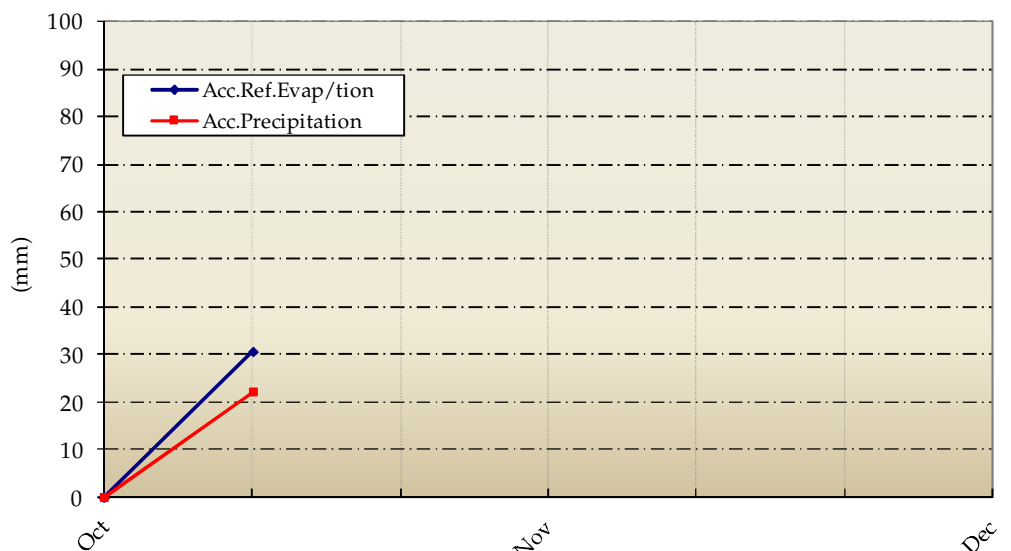
Agrinio

1st 10-day period (1-10/08/2014)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max													
	Min													
Relative Humidity	Max													
	Min													
Soil Temperature at 10 cm	06 UTC													
	12 UTC													
Sunshine Duration														
Precipitation														
Evaporation														
Growing Degrees	5													
	10													

1st 10-day period (1-10/08/2014)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration		
Precipitation - Reference Evapotranspiration		
Number of Rainy Days		
Number of Dry Days		

This station is not operated

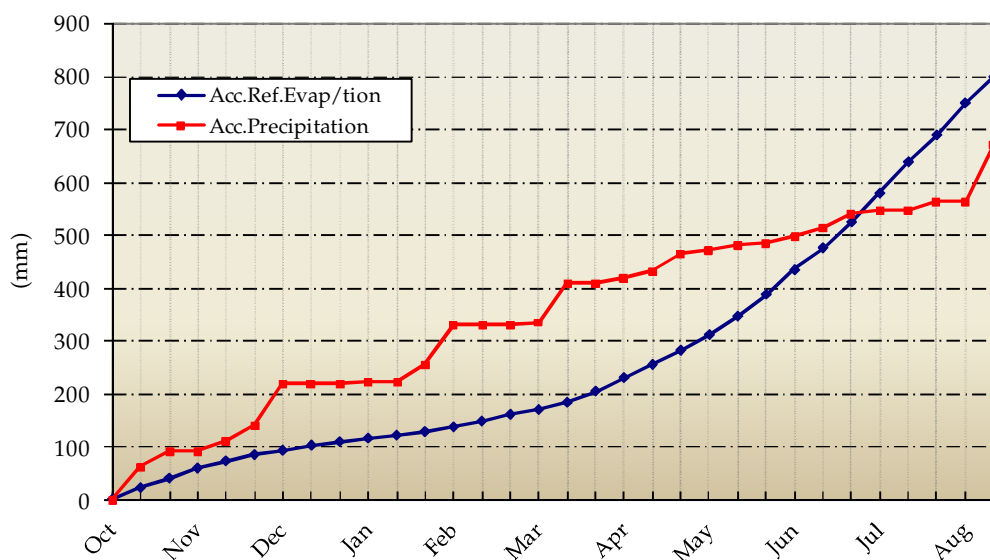
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2014)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.2	28.4	30.4	32.0	33.0	33.2	28.0	29.6	31.0	33.8	31.3	33.4	31.3
	Min	22.0	19.0	19.0	19.8	20.0	20.2	18.6	17.6	18.6	19.0	19.4	20.9	17.9
Relative Humidity	Max	89	96	92	89	83	91	91	92	92	92	91	69	-
	Min	39	52	47	40	26	32	59	46	46	37	42	26	-
Soil Temperature at 10 cm	06 UTC	28.2	26.2	23.6	25.0	26.4	26.8	24.0	22.6	23.2	25.0	25.1	28.6	24.7
	12 UTC	33.6	28.2	28.6	31.0	32.0	32.5	22.8	26.0	28.5	30.4	29.4	31.5	29.0
Sunshine Duration		10.4	4.8	12.5	11.6	12.5	11.4	1.4	9.6	12.3	12.5	9.9	12.5	10.7
Precipitation			70.5					37.3				107.8		4.0
Evaporation		13.5	5.8	7.2	8.1	7.8	14.3	6.2	6.4	12.2	8.6	90.1	123.5	96.8
Growing Degrees	5	22.6	18.7	19.7	20.9	21.5	21.7	18.3	18.6	19.8	21.4	203.2	221.4	195.9
	10	17.6	13.7	14.7	15.9	16.5	16.7	13.3	13.6	14.8	16.4	153.2	171.4	145.9

1st 10-day period (1-10/08/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	49.6	66.3	58.5
Precipitation - Reference Evapotranspiration	58.2	-66.3	-54.5
Number of Rainy Days	2.0	0.0	0.7
Number of Dry Days	3.0	40.0	-

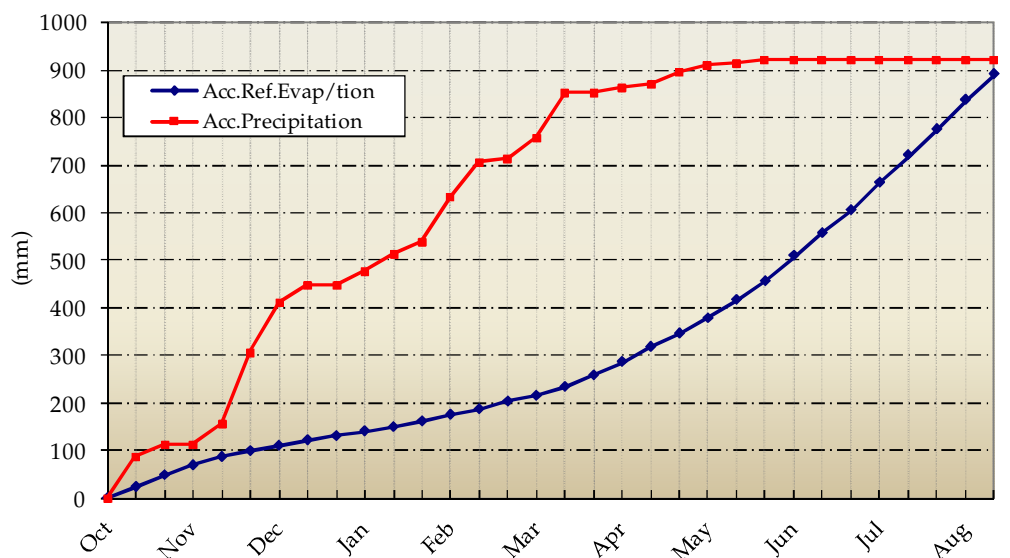
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2014)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.8	28.7	30.8	30.6	31.4	29.8	29.3	29.3	29.2	31.8	30.0	33.5	31.3
	Min	19.9	21.0	21.0	19.7	20.2	20.2	22.7	19.6	19.4	19.4	20.3	19.2	18.8
Relative Humidity	Max	82	84	88	84	87	88	84	88	88	89	86	81	-
	Min	46	48	46	48	44	44	47	49	50	41	46	31	-
Soil Temperature at 10 cm	06 UTC	29.0	28.8	29.0	28.6	28.8	29.0	29.0	28.4	28.5	28.8	28.8	28.7	27.8
	12 UTC	33.6	34.0	34.0	34.2	34.8	34.0	33.8	33.8	33.0	34.4	34.0	35.0	32.1
Sunshine Duration		12.9	11.6	12.9	12.8	12.2	11.9	11.0	12.1	12.1	12.1	12.2	12.2	11.6
Precipitation														0.2
Evaporation		5.5	5.0	0.0	6.2	11.8	10.0	3.7	15.3	4.8	4.8	67.1	108.5	74.9
Growing Degrees	5	19.4	19.9	20.9	20.2	20.8	20.0	21.0	19.5	19.3	20.6	201.4	213.8	200.3
	10	14.4	14.9	15.9	15.2	15.8	15.0	16.0	14.5	14.3	15.6	151.4	163.8	150.3

1st 10-day period (1-10/08/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	54.0	61.9	52.3
Precipitation - Reference Evapotranspiration	-54.0	-61.9	-52.1
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	17.0	61.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

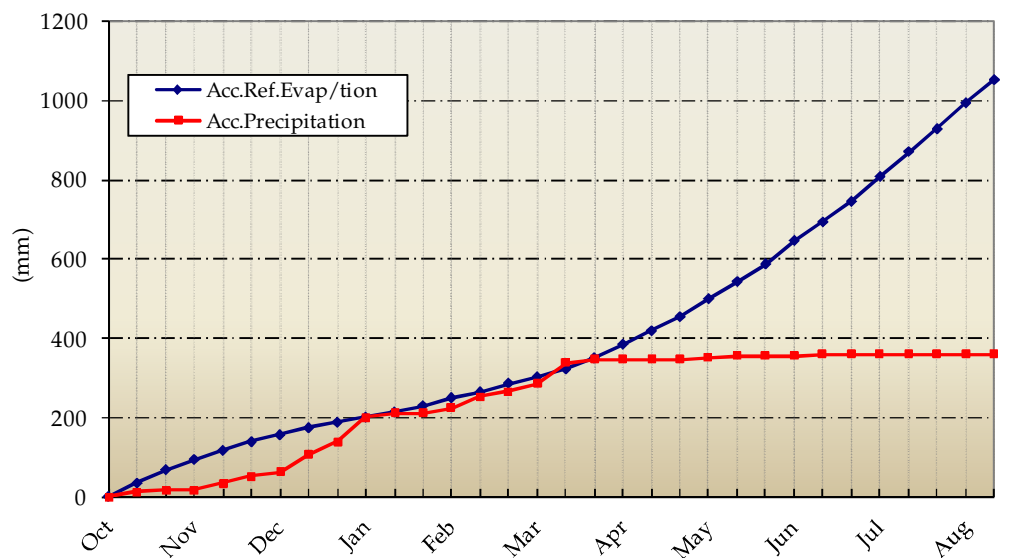


Iraklio

1st 10-day period (1-10/08/2014)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.0	29.0	29.4	30.2	31.0	32.0	32.0	30.0	30.0	31.0	30.5	28.6	28.6
	Min	23.0	24.4	21.4	22.2	23.2	22.4	22.6	21.4	23.4	26.0	23.0	22.4	22.4
Relative Humidity	Max	75	82	80	83	90	87	85	83	84	73	82	76	-
	Min	53	58	57	56	58	49	66	66	56	58	58	57	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.8	12.6	12.6	12.5	12.3	12.5	11.5	11.4	12.1	12.2	12.2	12.0	11.6
Precipitation														0.0
Evaporation		8.5	6.1	7.6	4.1	6.5	6.4	4.8	6.2	6.6	8.9	65.7	67.9	88.8
Growing Degrees	5	21.5	21.7	20.4	21.2	22.1	22.2	22.3	20.7	21.7	23.5	217.3	205.0	205.0
	10	16.5	16.7	15.4	16.2	17.1	17.2	17.3	15.7	16.7	18.5	167.3	155.0	155.0

1st 10-day period (1-10/08/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.6	58.6	-
Precipitation - Reference Evapotranspiration	-58.6	-58.6	0.0
Number of Rainy Days	0.0	0.0	0.0
Number of Dry Days	66.0	84.0	-

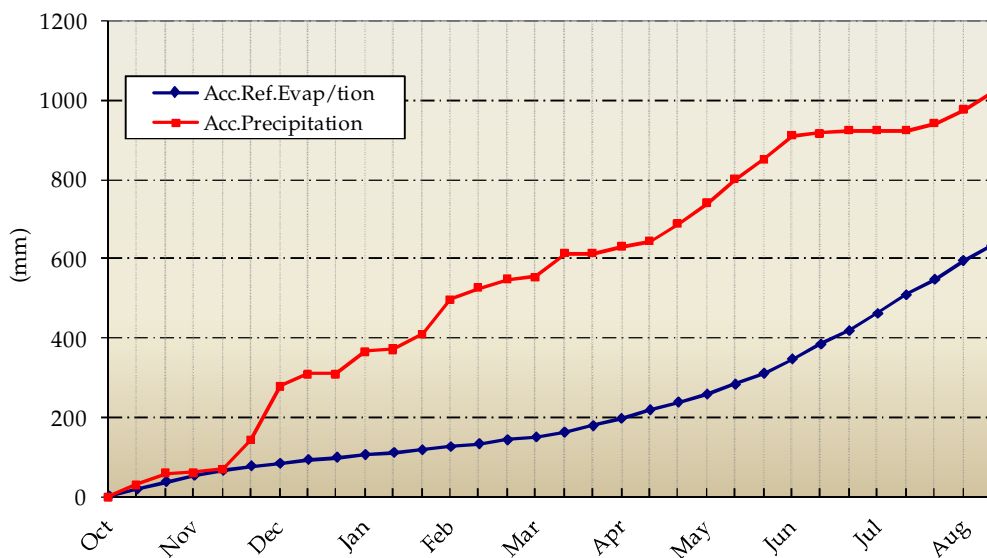
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2014)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.2	30.8	32.0	32.2	34.2	28.7	28.5	29.2	32.0	31.6	30.6	34.1	31.8
	Min	12.4	11.4	15.4	16.4	16.6	14.2	16.7	16.6	15.9	15.7	15.1	16.2	15.9
Relative Humidity	Max	81	85	78	81	73	87	100	100	100	89	87	56	-
	Min	38	40	34	30	36	44	36	47	42	35	38	21	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	24.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	28.0
Sunshine Duration		7.2	11.9	10.4	12.1	11.0	4.6	5.2	7.8	9.4	9.9	9.0	10.3	10.1
Precipitation		0.0					1.2	29.3	11.9			42.4		5.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	79.9
Growing Degrees	5	14.8	16.1	18.7	19.3	20.4	16.5	17.6	17.9	19.0	18.7	178.9	201.7	183.5
	10	9.8	11.1	13.7	14.3	15.4	11.5	12.6	12.9	14.0	13.7	128.9	151.7	134.7

1st 10-day period (1-10/08/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	38.0	50.4	50.7
Precipitation - Reference Evapotranspiration	4.4	-50.4	-44.9
Number of Rainy Days	3.0	0.0	1.3
Number of Dry Days	11.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

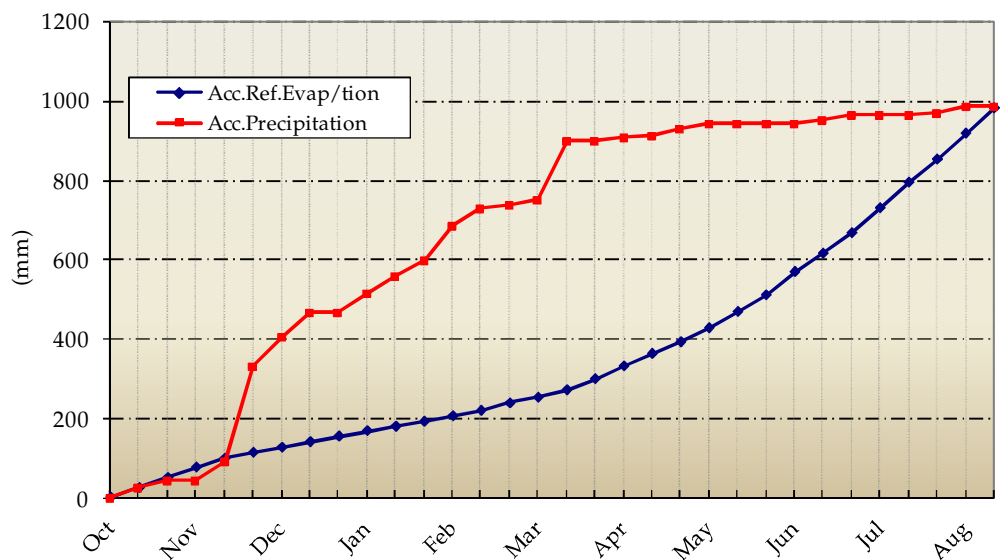


Kalamata

1st 10-day period (1-10/08/2014)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.5	32.1	33.9	36.9	32.5	33.5	33.0	31.1	30.7	32.2	32.7	34.1	31.8
	Min	19.2	20.0	22.4	23.0	19.4	20.6	22.2	20.1	19.8	18.7	20.5	19.1	18.3
Relative Humidity	Max	86	77	75	74	83	86	87	89	91	87	84	82	-
	Min	26	38	29	28	36	25	34	46	38	36	34	27	-
Soil Temperature at 10 cm	06 UTC	26.6	26.6	26.6	26.6	26.6	27.0	27.0	26.2	26.4	26.4	26.6	26.1	26.3
	12 UTC	28.0	28.0	28.2	28.4	28.6	28.8	28.6	28.4	28.8	28.8	28.5	29.0	30.4
Sunshine Duration		12.3	12.3	12.2	12.4	12.3	12.2	12.1	10.8	12.2	11.9	12.1	11.7	11.0
Precipitation													4.4	3.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	99.2	84.1
Growing Degrees	5	20.4	21.1	23.2	25.0	21.0	22.1	22.6	20.6	20.3	20.5	216.4	216.3	200.7
	10	15.4	16.1	18.2	20.0	16.0	17.1	17.6	15.6	15.3	15.5	166.4	166.3	150.7

1st 10-day period (1-10/08/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	63.6	64.0	56.0
Precipitation - Reference Evapotranspiration	-63.6	-59.6	-52.1
Number of Rainy Days	0.0	1.0	0.5
Number of Dry Days	16.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

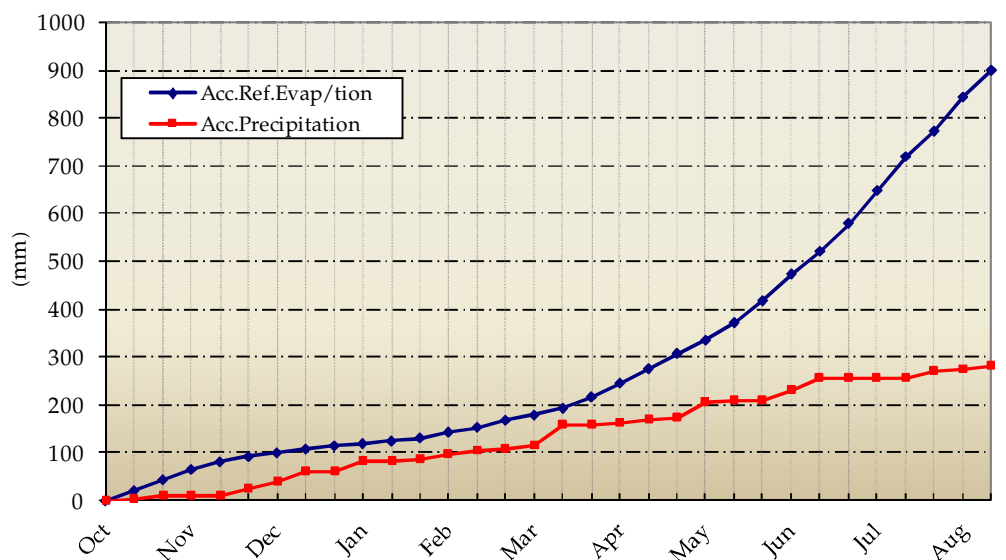


Larisa

1st 10-day period (1-10/08/2014)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.9	32.9	36.0	37.5	34.9	32.0	29.0	33.0	34.4	35.4	34.0	34.4	33.2
	Min	20.4	17.4	19.0	20.0	20.8	20.6	19.0	17.4	16.4	18.6	19.0	20.3	18.0
Relative Humidity	Max	98	99	84	70	68	92	97	95	97	74	87	68	-
	Min	17	30	22	17	24	33	39	28	25	23	26	22	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	29.4
Sunshine Duration		9.0	10.8	12.1	12.9	9.6	4.2	7.8	8.9	11.4	11.8	9.8	11.7	10.5
Precipitation		4.3	0.2				0.8	2.0	0.5			7.8		4.2
Evaporation		10.4	7.0	13.0	10.4	11.1	6.2	6.5	7.8	11.9	12.3	96.6	-	91.8
Growing Degrees	5	22.7	20.2	22.5	23.8	22.9	21.3	19.0	20.2	20.4	22.0	214.8	223.1	206.1
	10	17.7	15.2	17.5	18.8	17.9	16.3	14.0	15.2	15.4	17.0	164.8	173.1	156.1

1st 10-day period (1-10/08/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	56.0	65.3	58.6
Precipitation - Reference Evapotranspiration	-48.2	-65.3	-54.4
Number of Rainy Days	5.0	0.0	1.1
Number of Dry Days	10.0	19.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

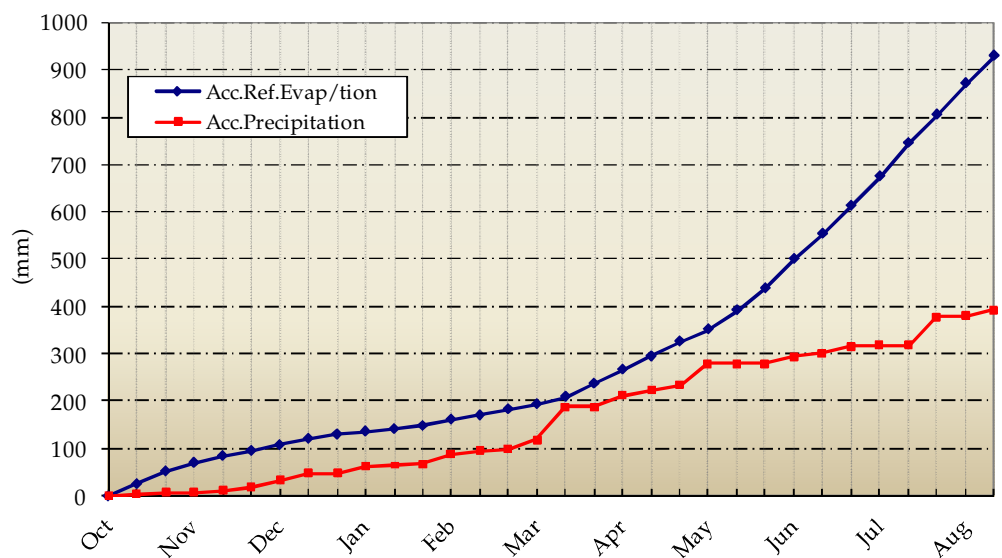


Mikra

1st 10-day period (1-10/08/2014)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.5	31.0	33.4	33.3	34.0	30.8	28.9	31.5	32.2	33.6	31.8	33.8	31.9
	Min	21.8	21.0	19.4	23.0	22.1	23.6	20.4	18.6	23.2	20.0	21.3	21.5	19.4
Relative Humidity	Max	82	77	79	70	73	90	83	88	75	80	80	66	-
	Min	43	33	37	36	26	40	38	27	30	28	34	26	-
Soil Temperature at 10 cm	06 UTC	28.8	26.0	26.2	28.0	28.6	29.0	25.8	25.2	26.2	27.0	27.1	30.5	26.9
	12 UTC	33.0	29.0	31.6	33.2	34.0	33.0	28.4	31.0	32.0	32.4	31.8	34.9	31.6
Sunshine Duration		6.2	9.5	12.4	12.6	10.5	5.7	8.1	11.2	12.6	12.3	10.1	11.5	10.2
Precipitation		2.9					4.7	5.2				12.8		5.3
Evaporation		9.5	13.7	9.0	6.4	6.0	5.0	13.0	15.3	11.3	6.8	96.0	97.6	88.0
Growing Degrees	5	20.7	21.0	21.4	23.2	23.1	22.2	19.7	20.1	22.7	21.8	215.7	226.5	206.4
	10	15.7	16.0	16.4	18.2	18.1	17.2	14.7	15.1	17.7	16.8	165.7	176.5	156.4

1st 10-day period (1-10/08/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.0	64.8	56.6
Precipitation - Reference Evapotranspiration	-45.2	-64.8	-51.3
Number of Rainy Days	3.0	0.0	1.3
Number of Dry Days	8.0	19.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

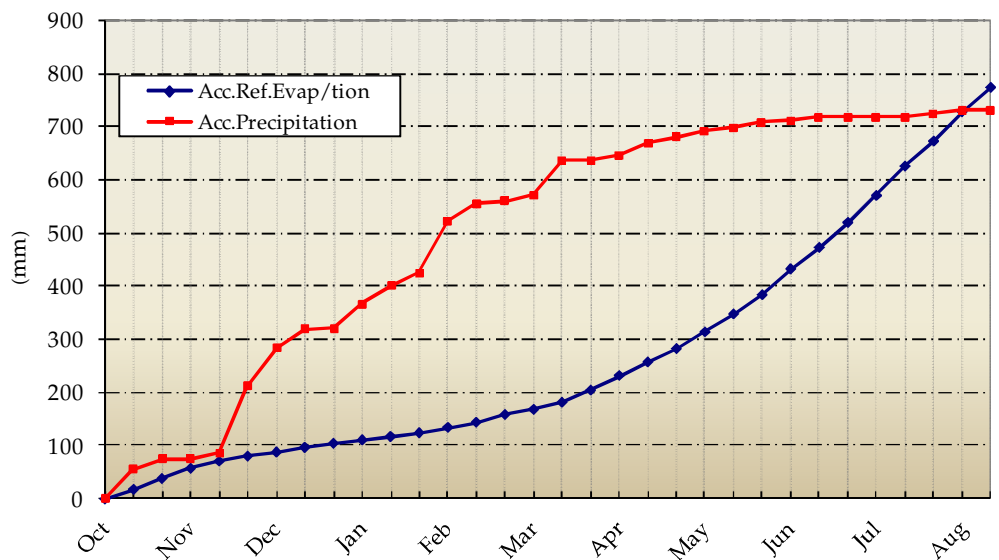


Tripoli

1st 10-day period (1-10/08/2014)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.5	30.4	33.7	34.8	32.2	30.2	26.5	28.6	31.2	33.0	31.1	31.7	30.8
	Min	14.3	14.1	14.3	15.8	15.4	15.9	13.2	15.5	14.6	14.4	14.8	18.8	14.8
Relative Humidity	Max	85	84	92	81	83	88	99	99	100	96	91	44	-
	Min	26	24	23	15	25	30	40	35	28	21	27	26	-
Soil Temperature at 10 cm	06 UTC	26.8	26.0	26.4	27.2	26.4	26.2	24.6	23.0	22.4	23.2	25.2	26.9	25.8
	12 UTC	32.2	-	-	33.2	31.8	30.6	29.6	28.6	-	-	31.0	31.7	28.5
Sunshine Duration		12.4	10.9	12.2	8.1	7.8	9.2	6.3	6.9	8.3	10.6	9.3	12.1	10.5
Precipitation							0.1	1.2				1.3	0.0	6.7
Evaporation		9.0	6.7	7.5	7.0	5.4	6.0	2.5	3.9	5.0	6.4	59.4	93.6	66.4
Growing Degrees	5	17.4	17.3	19.0	20.3	18.8	18.1	14.9	17.1	17.9	18.7	179.3	202.4	178.4
	10	12.4	12.3	14.0	15.3	13.8	13.1	9.9	12.1	12.9	13.7	129.3	152.4	128.4

1st 10-day period (1-10/08/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	46.0	62.0	53.5
Precipitation - Reference Evapotranspiration	-44.7	-62.0	-46.8
Number of Rainy Days	2.0	0.0	1.1
Number of Dry Days	11.0	20.0	-

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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