



# AGROMETEOROLOGICAL BULLETIN

*August 2016  
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



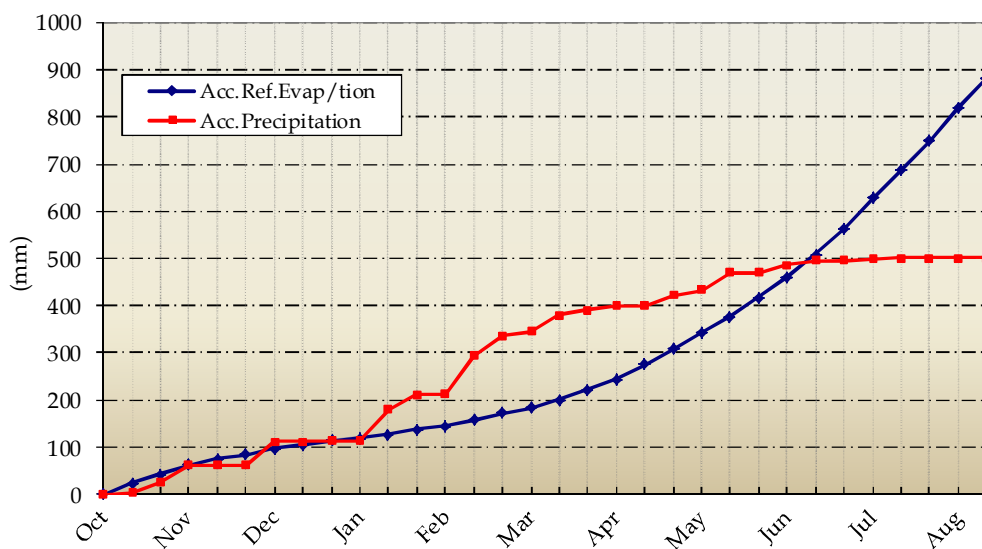
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1st 10-day period (1-10/08/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.8	34.4	34.2	34.2	34.6	36.0	36.8	34.4	34.4	35.2	35.1	33.8	31.3
	Min	18.8	19.0	22.0	23.2	20.8	23.6	22.6	25.6	24.0	20.4	22.0	22.0	17.9
Relative Humidity	Max	75	70	70	68	79	69	67	62	60	73	69	81	-
	Min	19	31	32	27	34	24	26	29	36	36	29	31	-
Soil Temperature at 10 cm	06 UTC	28.5	28.8	29.6	28.4	29.0	29.3	29.4	30.5	29.7	29.0	29.2	29.2	24.7
	12 UTC	34.8	35.0	34.4	34.6	34.6	34.8	35.2	34.4	33.8	34.4	34.6	33.3	29.0
Sunshine Duration		13.1	12.8	10.1	12.8	11.1	12.8	12.8	12.7	11.5	12.8	12.2	10.9	10.7
Precipitation													0.2	4.0
Evaporation		12.5	9.6	9.2	10.5	11.3	10.9	12.1	12.9	10.5	10.2	109.7	118.3	96.8
Growing Degrees	5	22.8	21.7	23.1	23.7	22.7	24.8	24.7	25.0	24.2	22.8	235.5	229.3	195.9
	10	17.8	16.7	18.1	18.7	17.7	19.8	19.7	20.0	19.2	17.8	185.5	179.3	145.9

1st 10-day period (1-10/08/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	65.2	60.8	58.5
Precipitation - Reference Evapotranspiration	-65.2	-60.6	-54.5
Number of Rainy Days	0.0	1.0	0.7
Number of Dry Days	37.0	27.0	-

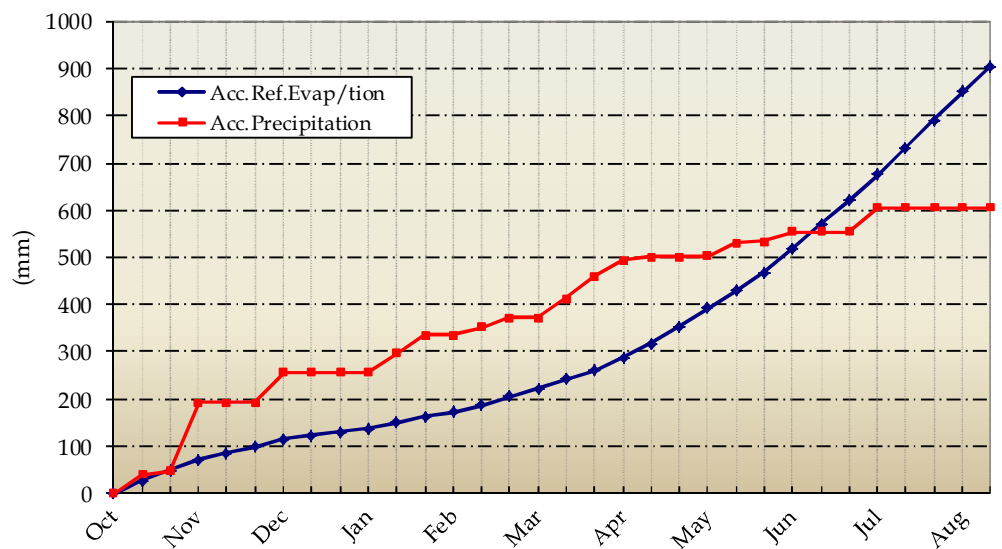
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2016)		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	31.3	30.9	33.8	32.6	32.0	33.5	31.3	31.0	31.0	32.1	34.2	31.3
	Min	20.4	21.1	19.6	21.3	20.2	20.6	21.8	20.6	22.2	21.3	20.9	22.0	18.8
Relative Humidity	Max	88	86	89	89	86	86	88	87	88	87	87	82	-
	Min	33	46	51	32	34	45	31	50	45	44	41	30	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	32.1
Sunshine Duration		12.7	11.0	12.4	12.2	12.9	11.3	11.0	11.1	11.4	11.5	11.8	11.6	11.6
Precipitation													6.5	0.2
Evaporation		8.0	1.0	3.0	12.2	7.8	4.0	6.0	4.0	4.6	5.4	56.0	92.7	74.9
Growing Degrees	5	21.8	21.2	20.3	22.6	21.4	21.3	22.7	21.0	21.6	21.2	214.9	230.9	200.3
	10	16.8	16.2	15.3	17.6	16.4	16.3	17.7	16.0	16.6	16.2	164.9	180.9	150.3

1st 10-day period (1-10/08/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	53.5	58.9	52.3
Precipitation - Reference Evapotranspiration	-53.5	-52.4	-52.1
Number of Rainy Days	0.0	2.0	0.1
Number of Dry Days	45.0	38.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

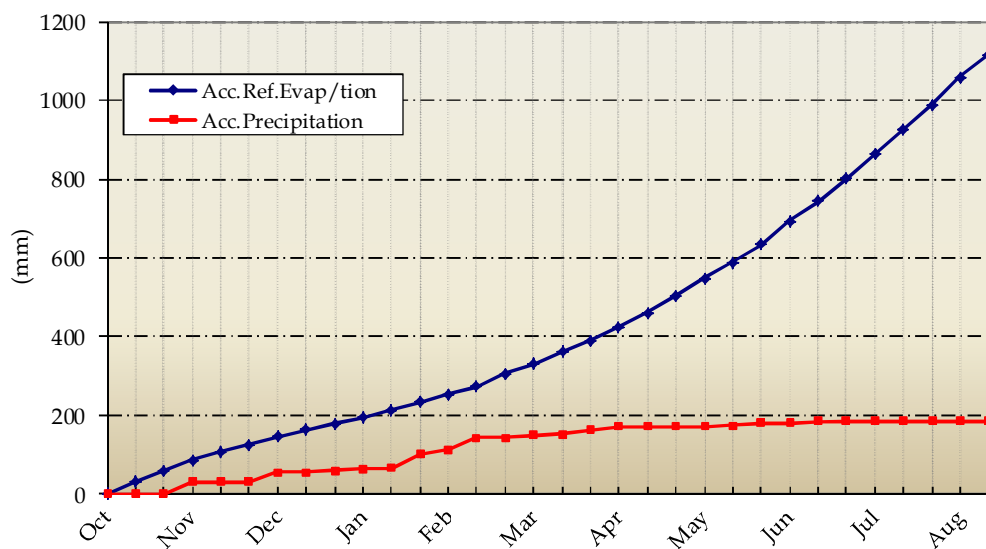


Iraklio

1st 10-day period (1-10/08/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.2	32.0	30.0	30.4	29.0	30.2	30.0	30.0	29.2	30.0	30.1	29.4	28.6
	Min	24.2	21.4	22.4	26.4	26.0	26.0	23.0	22.0	22.6	24.0	23.8	23.8	22.4
Relative Humidity	Max	72	72	80	76	84	84	86	86	86	83	81	84	-
	Min	58	40	52	63	70	64	59	60	71	64	60	63	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.1	12.2	12.0	11.8	11.4	12.0	12.0	11.9	11.5	8.3	11.5	10.8	11.6
Precipitation														0.0
Evaporation		6.4	6.7	5.3	8.0	8.4	4.8	7.6	3.6	6.5	8.0	65.3	56.3	88.8
Growing Degrees	5	22.2	21.7	21.2	23.4	22.5	23.1	21.5	21.0	20.9	22.0	219.5	215.9	205.0
	10	17.2	16.7	16.2	18.4	17.5	18.1	16.5	16.0	15.9	17.0	169.5	165.9	155.0

1st 10-day period (1-10/08/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.4	52.1	-
Precipitation - Reference Evapotranspiration	-57.4	-52.1	0.0
Number of Rainy Days	0.0	0.0	0.0
Number of Dry Days	63.0	73.0	-

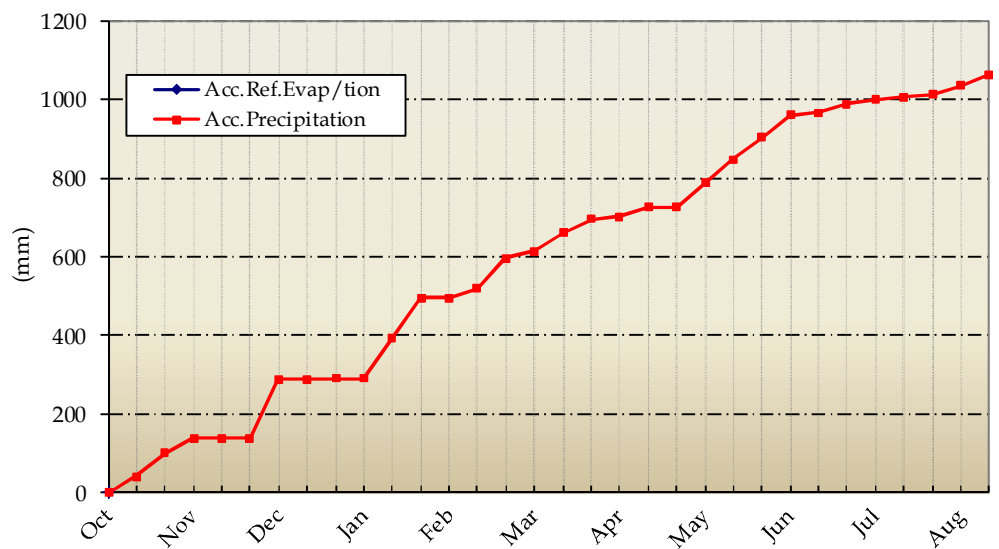
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.0	34.9	34.0	34.1	33.2	32.6	33.8	29.2	30.4	32.0	33.0	32.5	31.8
	Min	18.2	15.4	16.9	15.8	16.4	17.0	22.0	16.2	14.4	15.0	16.7	17.8	15.9
Relative Humidity	Max	99	100	100	100	99	80	100	94	100	88	96	90	-
	Min	24	20	37	28	30	31	27	36	45	33	31	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	29.1	24.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	28.0
Sunshine Duration		11.9	12.0	8.5	9.8	9.8	7.7	9.4	8.3	6.8	10.5	9.5	7.8	10.1
Precipitation				28.8				0.0				28.8	33.0	5.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	79.9
Growing Degrees	5	22.1	20.2	20.5	20.0	19.8	19.8	22.9	17.7	17.4	18.5	198.8	201.6	183.5
	10	17.1	15.2	15.5	15.0	14.8	14.8	17.9	12.7	12.4	13.5	148.8	151.6	134.7

1st 10-day period (1-10/08/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	50.7
Precipitation - Reference Evapotranspiration	-	-	-44.9
Number of Rainy Days	1.0	5.0	1.3
Number of Dry Days	7.0	5.0	-

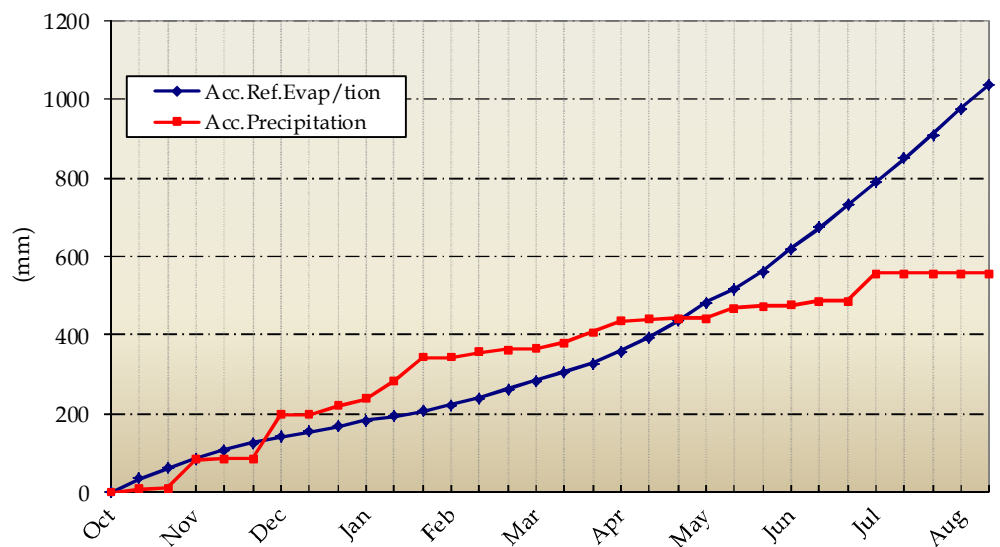
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.6	36.4	32.9	33.0	37.8	32.7	31.9	31.3	32.2	31.9	33.5	33.0	31.8
	Min	19.2	19.4	20.2	20.2	20.4	18.5	21.2	20.4	21.7	20.1	20.1	20.0	18.3
Relative Humidity	Max	88	86	85	84	80	84	88	90	82	83	85	90	-
	Min	25	17	29	34	20	34	39	47	40	39	32	38	-
Soil Temperature at 10 cm	06 UTC	27.0	27.0	27.4	27.0	26.2	26.0	26.4	27.2	27.4	27.2	26.9	25.9	26.3
	12 UTC	26.6	28.8	28.0	28.4	39.4	28.6	28.4	29.8	29.6	29.2	29.7	27.2	30.4
Sunshine Duration		11.6	12.2	12.1	8.7	11.9	10.0	11.0	9.0	10.6	11.6	10.9	8.5	11.0
Precipitation										0.0		0.0	50.1	3.9
Evaporation		8.2	9.6	9.4	8.6	8.4	7.8	8.5	7.0	8.6	8.8	84.9	-	84.1
Growing Degrees	5	21.9	22.9	21.6	21.6	24.1	20.6	21.6	20.9	22.0	21.0	218.0	215.2	200.7
	10	16.9	17.9	16.6	16.6	19.1	15.6	16.6	15.9	17.0	16.0	168.0	165.2	150.7

1st 10-day period (1-10/08/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	60.5	49.8	56.0
Precipitation - Reference Evapotranspiration	-60.5	0.3	-52.1
Number of Rainy Days	0.0	6.0	0.5
Number of Dry Days	34.0	6.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

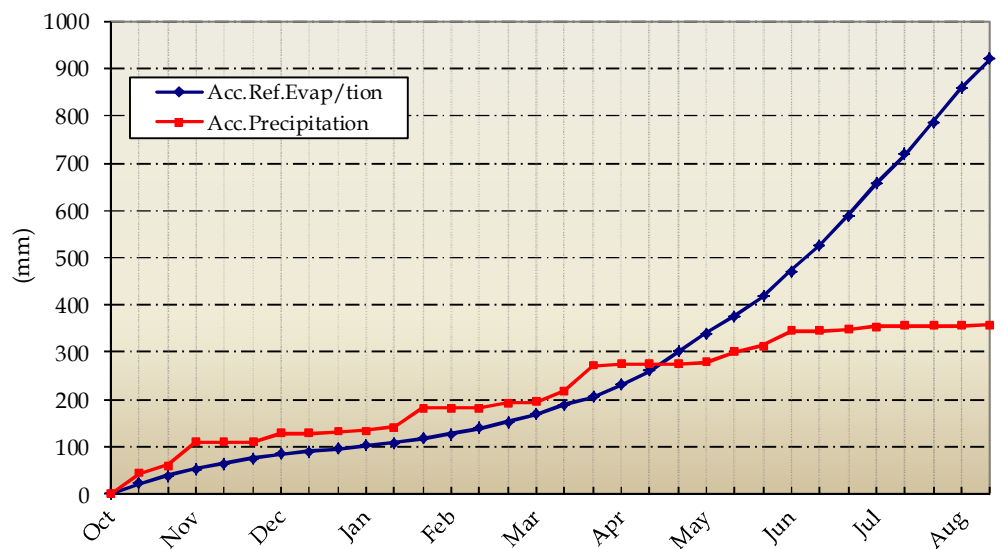


Larisa

1st 10-day period (1-10/08/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	37.6	36.0	36.0	33.9	34.6	36.0	35.0	32.1	31.6	34.4	34.7	33.6	33.2
	Min	19.0	20.0	23.4	22.0	20.5	19.4	20.0	22.3	21.7	20.8	20.9	20.0	18.0
Relative Humidity	Max	62	63	65	65	67	66	67	87	89	81	71	93	-
	Min	17	23	21	25	23	21	20	33	31	22	24	27	-
Soil Temperature at 10 cm	06 UTC	28.2	29.2	29.8	29.8	29.6	29.8	29.8	29.8	19.0	29.2	28.4	28.7	27.1
	12 UTC	29.2	29.8	30.0	29.8	29.8	30.0	30.0	29.4	29.0	29.6	29.7	28.6	29.4
Sunshine Duration		10.0	11.3	9.4	10.5	11.5	11.4	11.8	6.8	6.8	10.8	10.0	9.8	10.5
Precipitation				0.2					0.5	0.5		1.2	54.2	4.2
Evaporation		11.3	13.5	9.4	9.7	10.1	15.4	14.3	9.3	6.1	12.1	111.2	89.5	91.8
Growing Degrees	5	23.3	23.0	24.7	23.0	22.6	22.7	22.5	22.2	21.7	22.6	228.2	217.8	206.1
	10	18.3	18.0	19.7	18.0	17.6	17.7	17.5	17.2	16.7	17.6	178.2	167.8	156.1

1st 10-day period (1-10/08/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	62.0	56.4	58.6
Precipitation - Reference Evapotranspiration	-60.8	-2.2	-54.4
Number of Rainy Days	3.0	3.0	1.1
Number of Dry Days	7.0	31.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

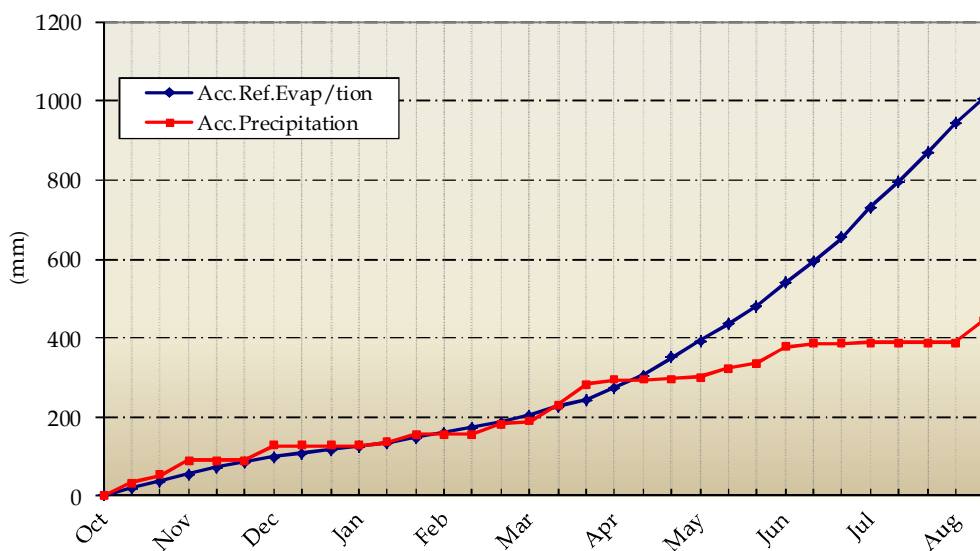


Mikra

1st 10-day period (1-10/08/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.2	34.0	33.4	33.0	34.0	34.2	34.4	30.8	29.4	33.2	33.3	33.6	31.9
	Min	22.4	22.6	25.2	21.9	24.2	22.8	24.2	23.2	20.6	20.6	22.8	21.7	19.4
Relative Humidity	Max	63	65	56	64	66	62	67	96	93	94	73	78	-
	Min	26	28	33	31	27	29	29	47	49	29	33	31	-
Soil Temperature at 10 cm	06 UTC	31.0	34.4	31.0	31.0	31.2	31.2	31.6	31.5	25.6	26.2	30.5	29.2	26.9
	12 UTC	36.0	35.9	35.0	34.8	36.2	36.4	36.6	33.0	28.4	31.2	34.4	33.0	31.6
Sunshine Duration		12.2	11.8	8.6	11.7	11.9	11.9	9.8	8.6	4.7	13.3	10.4	10.7	10.2
Precipitation				0.0					1.1	56.6		57.7	23.7	5.3
Evaporation		12.8	14.1	10.0	8.5	11.6	9.8	11.0	0.0	6.9	9.0	93.7	89.6	88.0
Growing Degrees	5	24.3	23.3	24.3	22.5	24.1	23.5	24.3	22.0	20.0	21.9	230.2	226.8	206.4
	10	19.3	18.3	19.3	17.5	19.1	18.5	19.3	17.0	15.0	16.9	180.2	176.8	156.4

1st 10-day period (1-10/08/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	64.7	61.0	56.6
Precipitation - Reference Evapotranspiration	-7.0	-37.3	-51.3
Number of Rainy Days	2.0	2.0	1.3
Number of Dry Days	11.0	26.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



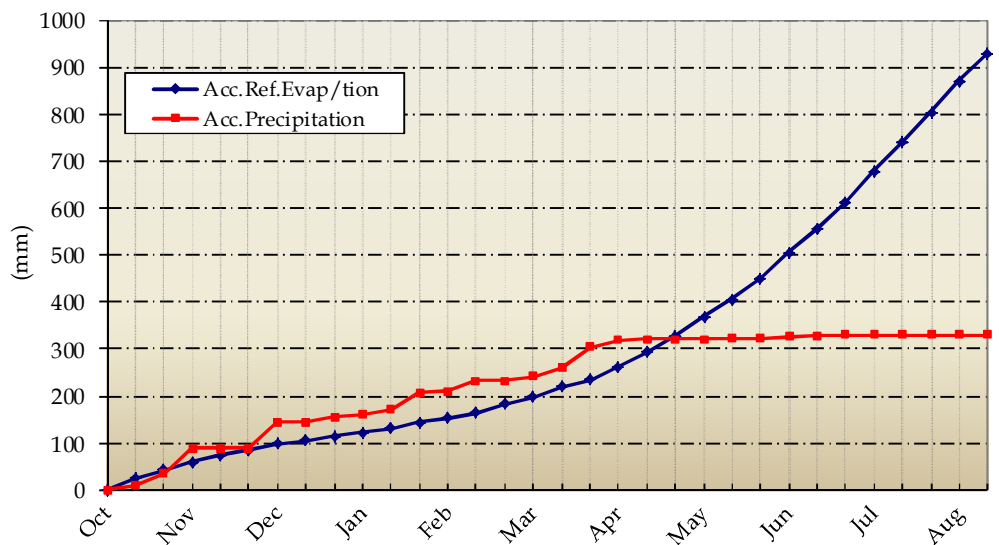


Tanagra

1st 10-day period (1-10/08/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.6	35.6	33.5	31.4	32.2	33.5	33.4	32.0	29.1	33.0	32.9	32.1	32.1
	Min	20.5	21.3	20.9	23.5	23.0	22.1	21.4	22.6	23.8	22.4	22.2	22.8	18.7
Relative Humidity	Max	47	57	63	59	67	54	55	61	70	65	60	67	-
	Min	15	21	29	32	28	21	22	36	43	24	27	31	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.1	11.8	11.8	12.2	12.5	12.7	12.0	11.1	8.1	11.9	11.5	11.2	
Precipitation														0.7
Evaporation		10.8	14.0	0.0	9.0	11.9	12.0	9.0	7.0	7.5	8.7	89.9	102.5	
Growing Degrees	5	23.1	23.5	22.2	22.5	22.6	22.8	22.4	22.3	21.5	22.7	225.4	224.7	
	10	18.1	18.5	17.2	17.5	17.6	17.8	17.4	17.3	16.5	17.7	175.4	174.7	

1st 10-day period (1-10/08/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	59.2	57.5	
Precipitation - Reference Evapotranspiration	-59.2	-57.5	0.7
Number of Rainy Days	0.0	0.0	0.4
Number of Dry Days	43.0	40.0	-

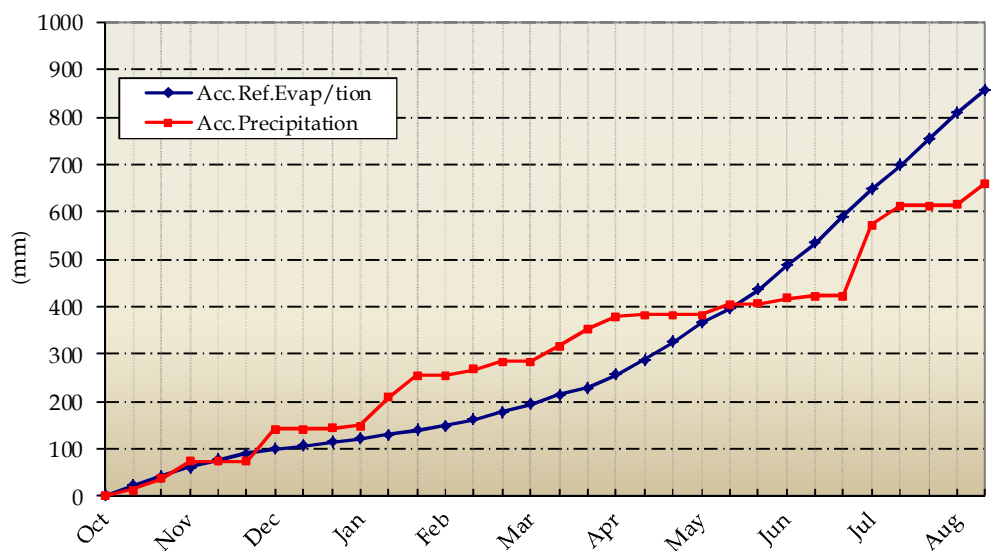
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.4	34.7	33.2	33.2	32.8	32.7	32.9	33.1	31.2	30.8	32.9	32.5	30.8
	Min	14.2	15.0	14.6	20.7	18.0	13.7	13.9	14.9	16.2	15.5	15.7	16.7	14.8
Relative Humidity	Max	88	88	88	87	76	85	95	96	100	100	90	94	-
	Min	19	13	13	24	19	24	22	28	35	45	24	28	-
Soil Temperature at 10 cm	06 UTC	26.2	27.0	27.2	28.0	27.6	27.0	26.6	26.6	26.4	23.2	26.6	24.8	25.8
	12 UTC	33.0	33.8	33.6	33.8	34.2	-	-	33.4	32.2	29.6	33.0	29.7	28.5
Sunshine Duration		11.6	12.6	9.4	11.5	12.1	8.8	8.8	8.0	7.5	9.7	10.0	8.6	10.5
Precipitation									0.6	45.3		45.9	24.7	6.7
Evaporation		8.0	8.9	6.8	7.1	10.4	5.5	7.0	4.7	6.4	6.3	71.1	64.3	66.4
Growing Degrees	5	19.3	19.9	18.9	22.0	20.4	18.2	18.4	19.0	18.7	18.2	192.9	196.1	178.4
	10	14.3	14.9	13.9	17.0	15.4	13.2	13.4	14.0	13.7	13.2	142.9	146.1	128.4

1st 10-day period (1-10/08/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	48.7	47.1	53.5
Precipitation - Reference Evapotranspiration	-2.8	-22.4	-46.8
Number of Rainy Days	2.0	4.0	1.1
Number of Dry Days	9.0	3.0	-

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<sub>n</sub> 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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