



# AGROMETEOROLOGICAL BULLETIN

*August 2018  
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



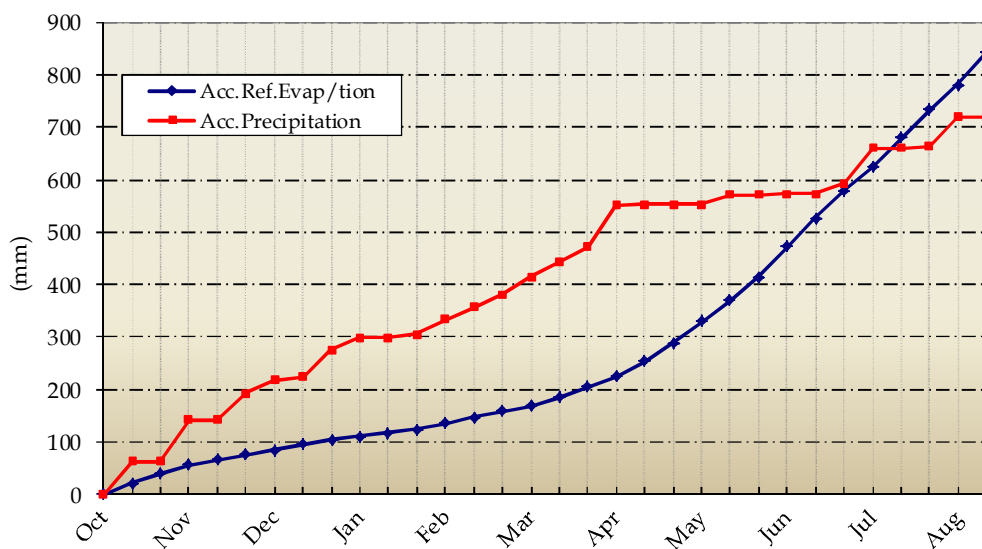
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1st 10-day period (1-10/08/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.2	33.0	33.4	33.2	34.2	34.0	34.2	34.2	33.0	32.4	33.5	36.6	31.3
	Min	19.6	23.0	23.4	23.2	22.2	17.6	18.4	20.0	22.4	21.8	21.2	21.9	17.9
Relative Humidity	Max	91	82	82	61	63	79	80	65	55	67	72	72	-
	Min	42	42	30	27	26	23	23	33	34	32	31	29	-
Soil Temperature at 10 cm	06 UTC	25.0	26.6	27.0	26.8	26.4	26.0	26.6	27.4	27.6	27.2	26.7	24.8	24.7
	12 UTC	29.6	30.8	31.0	31.2	30.6	30.4	31.2	31.6	31.2	30.6	30.8	-	29.0
Sunshine Duration		11.9	12.4	12.9	13.0	13.0	12.7	12.8	11.7	12.8	12.7	12.6	12.7	10.7
Precipitation													0.0	4.0
Evaporation		7.2	11.0	8.7	12.4	11.0	8.8	8.7	9.5	11.0	9.2	97.5	-	96.8
Growing Degrees	5	21.4	23.0	23.4	23.2	23.2	20.8	21.3	22.1	22.7	22.1	223.2	242.6	195.9
	10	16.4	18.0	18.4	18.2	18.2	15.8	16.3	17.1	17.7	17.1	173.2	192.6	145.9

1st 10-day period (1-10/08/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	63.1	66.8	58.5
Precipitation - Reference Evapotranspiration	-63.1	-66.8	-54.5
Number of Rainy Days	0.0	0.0	0.7
Number of Dry Days	12.0	13.0	-

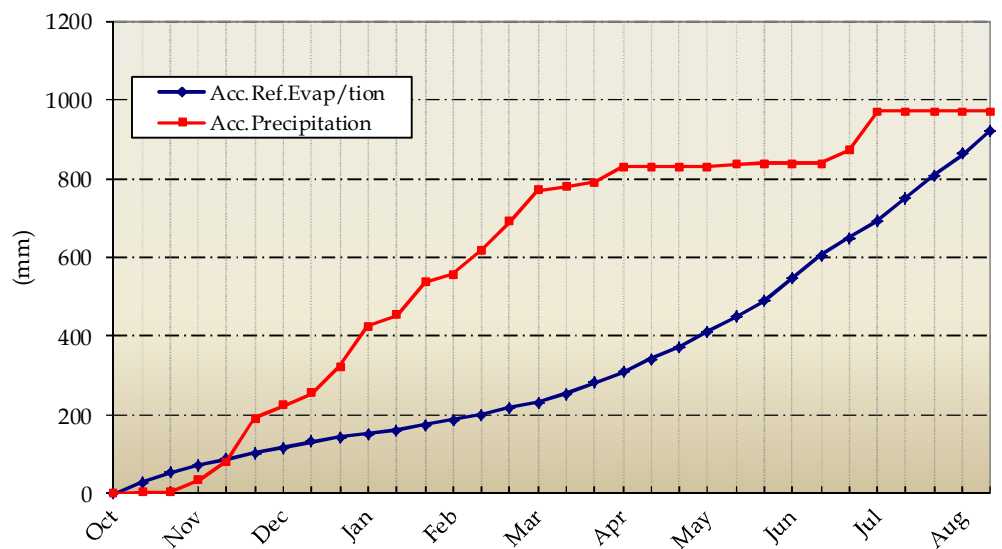
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.7	32.2	33.0	33.0	31.5	32.0	32.6	33.5	34.6	33.6	32.9	34.3	31.3
	Min	20.2	21.6	21.8	21.0	17.8	17.4	18.3	18.9	18.8	19.6	19.5	20.1	18.8
Relative Humidity	Max	90	93	99	85	84	84	82	82	87	65	85	80	-
	Min	41	48	34	29	31	28	26	30	26	25	32	29	-
Soil Temperature at 10 cm	06 UTC	28.8	29.0	29.2	30.0	29.6	28.0	28.0	28.2	28.6	28.2	28.8	28.7	27.8
	12 UTC	31.0	33.0	33.0	32.0	32.0	32.4	30.0	32.0	34.0	33.0	32.2	31.0	32.1
Sunshine Duration		12.4	11.6	11.2	12.9	12.5	12.7	12.5	12.8	12.2	12.7	12.4	12.4	11.6
Precipitation														0.2
Evaporation		6.0	8.4	10.0	9.0	7.6	7.0	9.0	8.0	11.0	12.0	88.0	98.0	74.9
Growing Degrees	5	21.5	21.9	22.4	22.0	19.7	19.7	20.5	21.2	21.7	21.6	212.1	222.2	200.3
	10	16.5	16.9	17.4	17.0	14.7	14.7	15.5	16.2	16.7	16.6	162.1	172.2	150.3

1st 10-day period (1-10/08/2018)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.8	60.7
Precipitation - Reference Evapotranspiration	-57.8	-60.7
Number of Rainy Days	0.0	0.0
Number of Dry Days	42.0	14.0

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

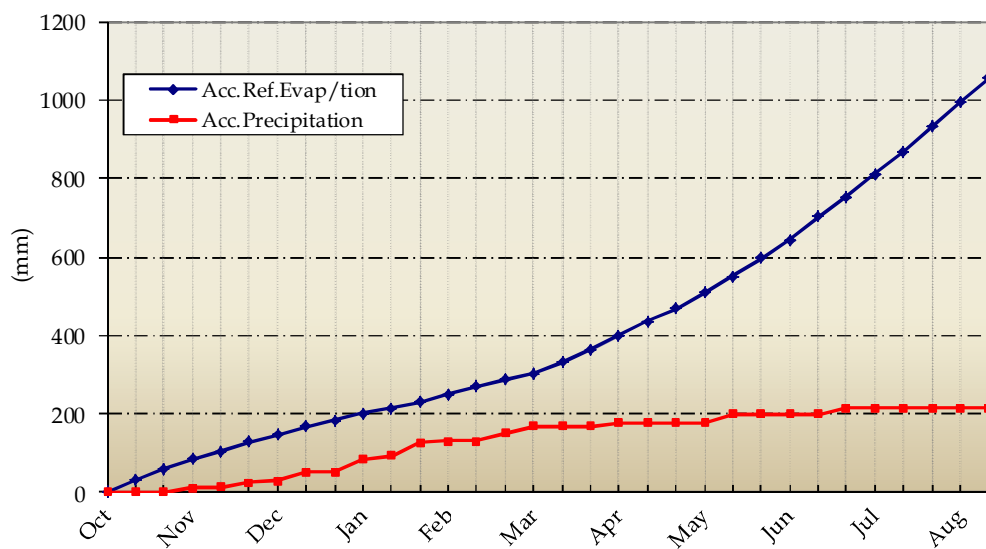


Iraklio

1st 10-day period (1-10/08/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.6	30.0	30.4	30.0	29.4	29.8	30.4	30.6	29.2	28.6	29.8	29.7	28.6
	Min	25.0	26.2	26.8	26.8	26.8	25.0	23.6	24.0	26.6	24.4	25.5	25.9	22.4
Relative Humidity	Max	88	87	78	74	80	80	76	83	77	77	80	71	-
	Min	68	68	57	60	64	51	47	48	64	66	59	55	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.5	12.2	11.5	11.0	10.2	11.7	12.0	12.0	11.7	11.4	11.5	11.8	11.6
Precipitation														0.0
Evaporation		8.8	6.0	7.3	11.4	8.8	2.5	12.1	9.2	9.2	8.7	84.0	78.8	88.8
Growing Degrees	5	22.3	23.1	23.6	23.4	23.1	22.4	22.0	22.3	22.9	21.5	226.6	228.4	205.0
	10	17.3	18.1	18.6	18.4	18.1	17.4	17.0	17.3	17.9	16.5	176.6	178.4	155.0

1st 10-day period (1-10/08/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	60.7	63.8	-
Precipitation - Reference Evapotranspiration	-60.7	-63.8	0.0
Number of Rainy Days	0.0	0.0	0.0
Number of Dry Days	11.0	23.0	-

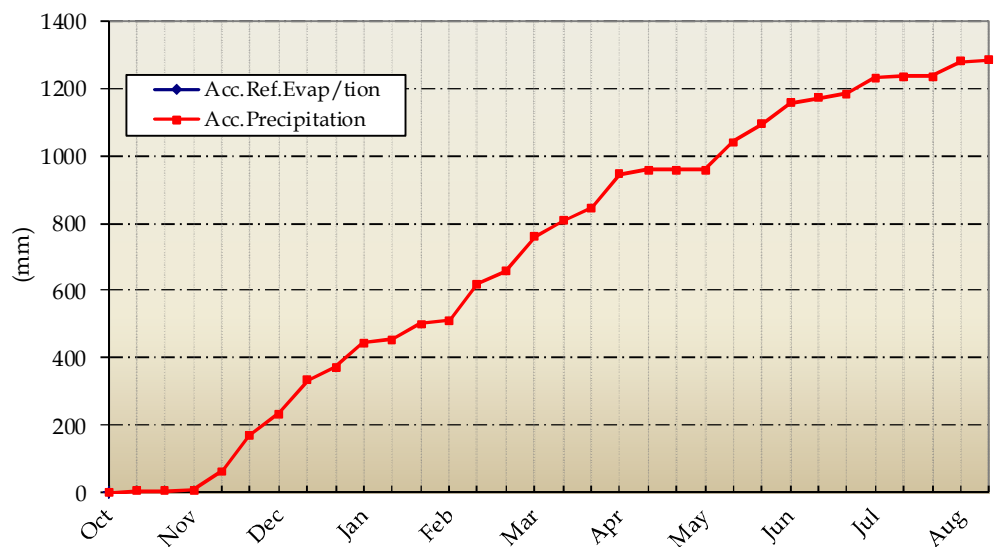
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.2	32.2	29.6	31.0	31.4	31.4	32.2	33.6	33.0	32.6	31.9	38.0	31.8
	Min	17.6	18.5	17.4	18.5	16.4	15.5	15.6	16.5	17.6	18.0	17.2	18.4	15.9
Relative Humidity	Max	100	98	100	83	98	91	100	92	91	62	92	82	-
	Min	42	43	47	36	31	34	38	35	32	37	38	20	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	24.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	28.0
Sunshine Duration		11.9	10.1	5.4	11.6	11.4	11.0	10.5	10.5	10.4	11.2	10.4	10.6	10.1
Precipitation		0.1	2.6	0.3					0.0	0.0		3.0	0.1	5.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	79.9
Growing Degrees	5	19.9	20.4	18.5	19.8	18.9	18.5	18.9	20.1	20.3	20.3	195.4	232.0	183.5
	10	14.9	15.4	13.5	14.8	13.9	13.5	13.9	15.1	15.3	15.3	145.4	182.0	134.7

1st 10-day period (1-10/08/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	50.7
Precipitation - Reference Evapotranspiration	-	-	-44.9
Number of Rainy Days	3.0	1.0	1.3
Number of Dry Days	0.0	21.0	-

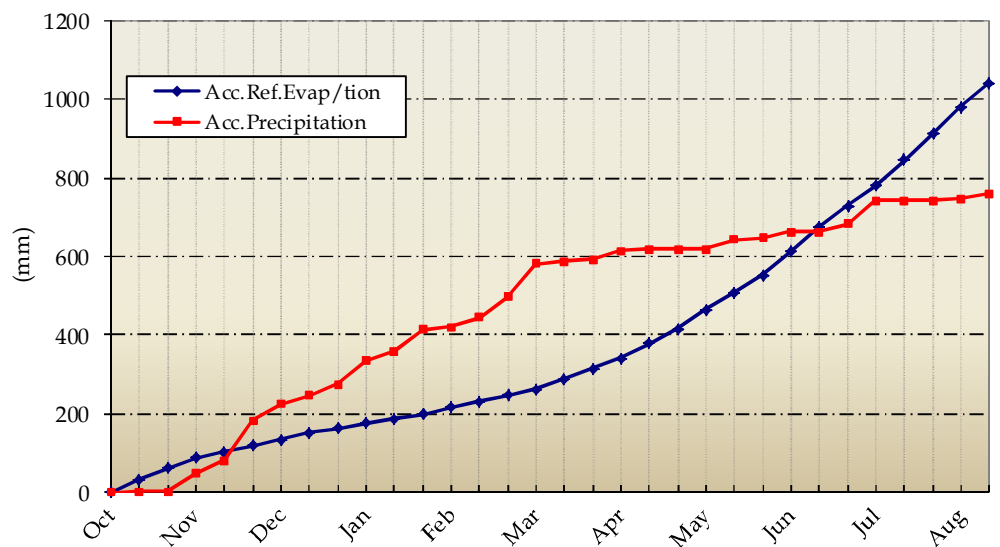
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.0	32.8	32.2	33.1	33.8	33.4	33.4	34.4	35.4	33.0	33.4	35.6	31.8
	Min	19.4	20.3	19.0	18.9	20.4	18.8	18.6	19.6	20.4	19.0	19.4	19.8	18.3
Relative Humidity	Max	86	88	92	91	77	78	74	69	80	67	80	82	-
	Min	45	43	44	28	22	27	23	22	26	28	31	30	-
Soil Temperature at 10 cm	06 UTC	27.4	27.6	28.4	26.2	26.0	26.0	26.0	26.6	26.8	26.8	26.8	-	26.3
	12 UTC	31.0	31.6	31.6	28.8	29.4	30.0	29.8	30.0	30.6	30.8	30.4	-	30.4
Sunshine Duration		12.0	10.0	9.9	8.5	12.4	12.1	12.4	12.3	10.1	12.3	11.2	11.7	11.0
Precipitation				12.0								12.0		3.9
Evaporation		7.1	7.7	5.0	5.4	9.2	9.1	4.8	9.8	7.4	8.0	73.5	64.6	84.1
Growing Degrees	5	20.7	21.6	20.6	21.0	22.1	21.1	21.0	22.0	22.9	21.0	214.0	227.4	200.7
	10	15.7	16.6	15.6	16.0	17.1	16.1	16.0	17.0	17.9	16.0	164.0	177.4	150.7

1st 10-day period (1-10/08/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	61.9	63.4	56.0
Precipitation - Reference Evapotranspiration	-49.9	-63.4	-52.1
Number of Rainy Days	1.0	0.0	0.5
Number of Dry Days	6.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



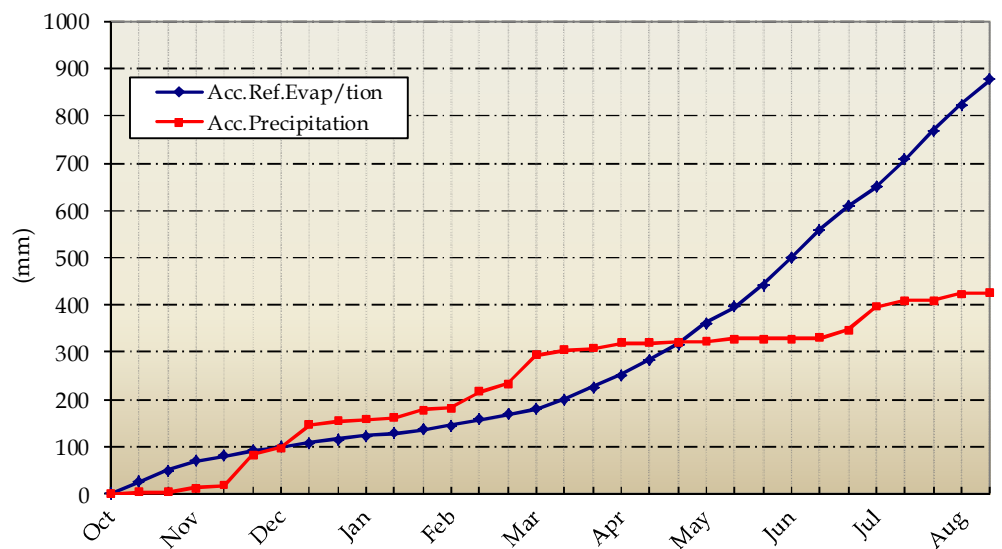


Larisa

1st 10-day period (1-10/08/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.6	32.5	27.4	32.0	32.2	33.6	34.4	34.0	32.8	31.2	32.4	35.5	33.2
	Min	20.6	20.4	22.5	19.2	17.0	16.6	19.4	20.9	21.6	17.6	19.6	19.3	18.0
Relative Humidity	Max	87	91	98	96	83	74	69	71	71	78	82	75	-
	Min	38	46	65	30	26	28	29	32	38	36	37	25	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	29.4
Sunshine Duration		10.5	7.9	1.6	9.5	11.4	11.3	10.1	10.2	11.3	11.3	9.5	11.7	10.5
Precipitation			0.0	0.8								0.8		4.2
Evaporation		8.2	7.4	2.9	9.0	14.0	8.3	7.9	12.1	10.8	8.4	89.0	91.2	91.8
Growing Degrees	5	22.1	21.5	20.0	20.6	19.6	20.1	21.9	22.5	22.2	19.4	209.8	224.3	206.1
	10	17.1	16.5	15.0	15.6	14.6	15.1	16.9	17.5	17.2	14.4	159.8	174.3	156.1

1st 10-day period (1-10/08/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	53.6	60.1	58.6
Precipitation - Reference Evapotranspiration	-52.8	-60.1	-54.4
Number of Rainy Days	1.0	0.0	1.1
Number of Dry Days	3.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

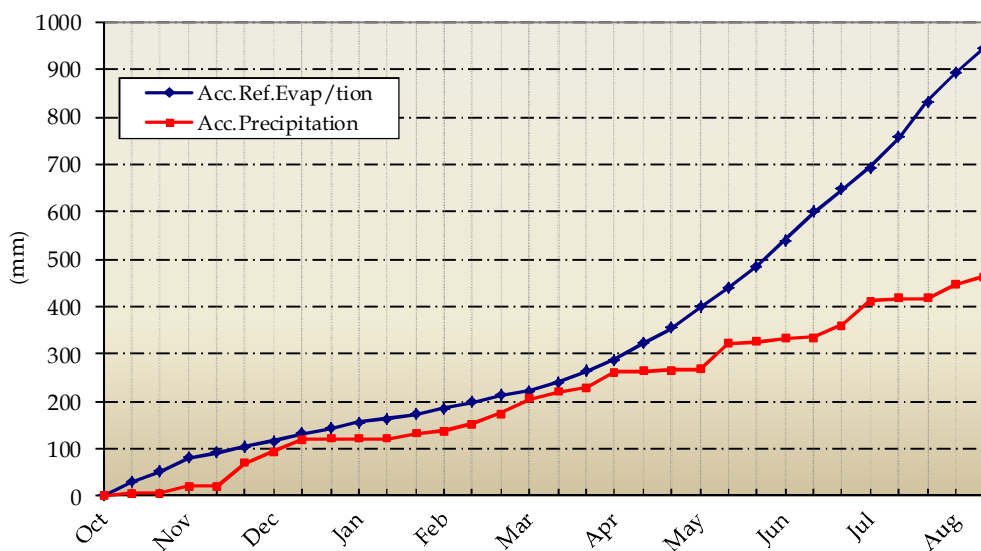


Mikra

1st 10-day period (1-10/08/2018)		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	31.7	30.6	32.2	32.0	32.8	33.4	33.1	32.1	31.0	31.9	36.2	31.9
	Min	21.3	21.9	20.9	20.8	19.7	19.6	21.2	22.8	24.6	20.2	21.3	22.0	19.4
Relative Humidity	Max	90	86	90	90	74	72	69	68	70	72	78	62	-
	Min	47	46	53	27	27	27	24	28	32	30	34	22	-
Soil Temperature at 10 cm	06 UTC	25.8	26.5	26.4	25.2	25.0	25.5	26.0	27.0	27.8	26.8	26.2	30.0	26.9
	12 UTC	29.0	30.0	29.6	27.8	29.0	30.2	30.5	30.8	30.0	30.0	29.7	34.0	31.6
Sunshine Duration		12.0	7.9	6.4	11.5	12.3	12.2	12.3	12.0	11.3	12.2	11.0	12.2	10.2
Precipitation			3.1	14.6								17.7		5.3
Evaporation		6.7	6.4	6.8	7.1	8.7	8.4	9.8	9.7	6.5	10.2	80.3	105.0	88.0
Growing Degrees	5	20.8	21.8	20.8	21.5	20.9	21.2	22.3	23.0	23.4	20.6	216.1	240.7	206.4
	10	15.8	16.8	15.8	16.5	15.9	16.2	17.3	18.0	18.4	15.6	166.1	190.7	156.4

1st 10-day period (1-10/08/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	54.2	62.5	56.6
Precipitation - Reference Evapotranspiration	-36.5	-62.5	-51.3
Number of Rainy Days	2.0	0.0	1.3
Number of Dry Days	1.0	24.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



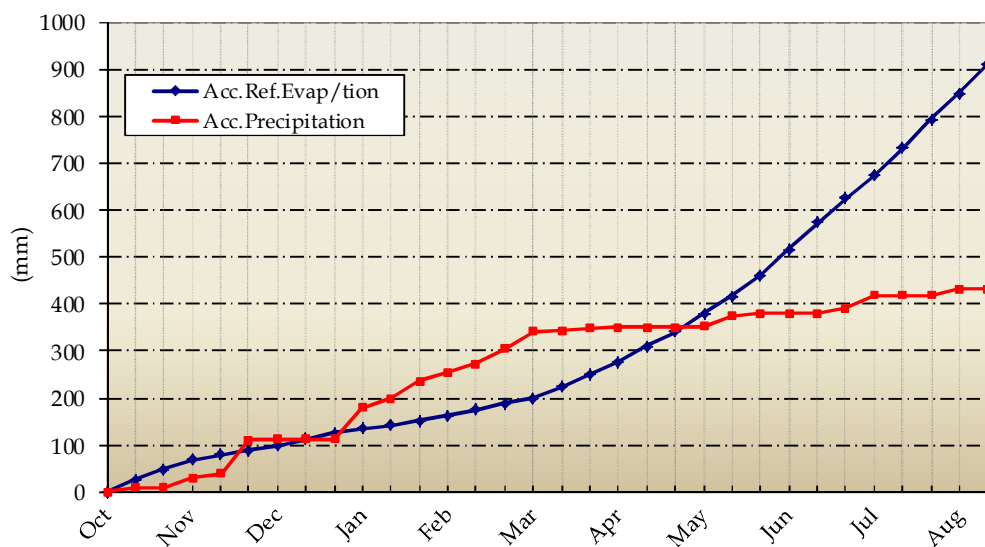


Tanagra

1st 10-day period (1-10/08/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.2	32.2	30.8	30.4	31.4	33.1	32.4	32.8	31.0	29.8	31.6	33.5	32.1
	Min	21.7	21.7	23.4	23.1	20.3	20.1	18.3	19.6	23.2	23.0	21.4	22.6	18.7
Relative Humidity	Max	79	76	74	73	65	51	60	64	68	56	67	54	-
	Min	39	36	29	28	25	18	27	25	23	30	28	23	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.2	12.7	10.4	12.4	13.0	12.6	12.8	12.6	11.6	11.6	12.1	12.4	
Precipitation														0.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	22.0	22.0	22.1	21.8	20.9	21.6	20.4	21.2	22.1	21.4	215.3	230.6	
	10	17.0	17.0	17.1	16.8	15.9	16.6	15.4	16.2	17.1	16.4	165.3	180.6	

1st 10-day period (1-10/08/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	61.7	64.0	
Precipitation - Reference Evapotranspiration	-61.7	-64.0	0.7
Number of Rainy Days	0.0	0.0	0.4
Number of Dry Days	10.0	14.0	-

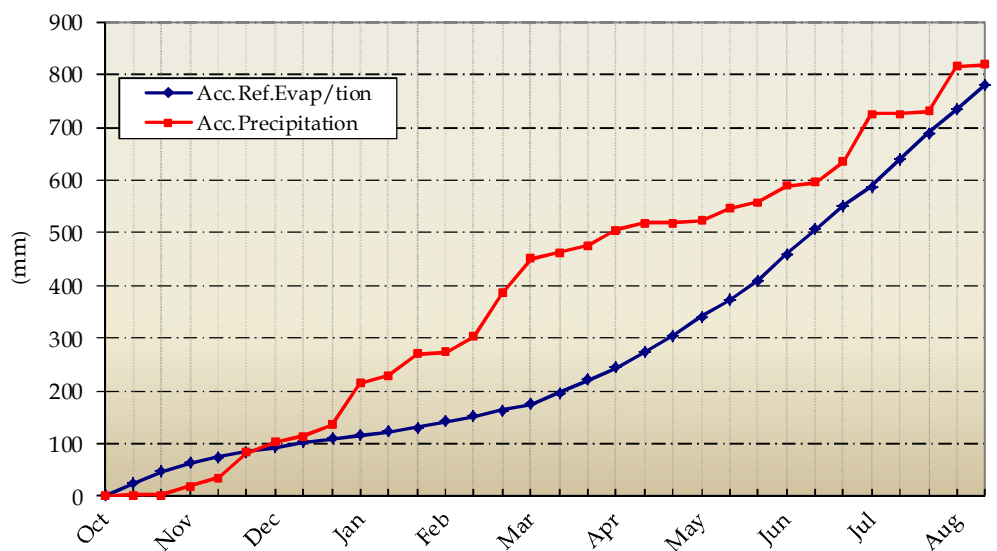
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/08/2018)		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	29.8	28.4	28.3	29.4	29.9	30.3	30.4	29.5	29.0	29.5	35.4	30.8
	Min	17.0	17.1	16.7	17.1	14.4	12.7	12.8	13.5	18.2	16.2	15.6	18.2	14.8
Relative Humidity	Max	100	100	100	88	86	92	92	92	72	71	89	66	-
	Min	41	42	46	33	26	22	24	27	33	28	32	18	-
Soil Temperature at 10 cm	06 UTC	22.4	23.2	22.8	22.6	22.2	22.2	23.2	23.4	25.0	24.8	23.2	27.5	25.8
	12 UTC	27.6	27.8	26.6	-	-	27.4	29.2	29.8	31.6	30.8	28.8	32.2	28.5
Sunshine Duration		7.0	6.9	6.8	11.9	11.5	12.3	11.2	12.1	12.2	12.2	10.4	12.1	10.5
Precipitation		0.7	2.5	0.9								4.1		6.7
Evaporation		4.2	3.5	3.5	7.4	7.2	6.7	6.1	7.8	7.4	7.6	61.4	-	66.4
Growing Degrees	5	18.6	18.5	17.6	17.7	16.9	16.3	16.6	17.0	18.9	17.6	175.5	218.4	178.4
	10	13.6	13.5	12.6	12.7	11.9	11.3	11.6	12.0	13.9	12.6	125.5	168.4	128.4

1st 10-day period (1-10/08/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	47.1	62.5	53.5
Precipitation - Reference Evapotranspiration	-43.0	-62.5	-46.8
Number of Rainy Days	3.0	0.0	1.1
Number of Dry Days	0.0	14.0	-

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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