



# AGROMETEOROLOGICAL BULLETIN

*October 2017*  
*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



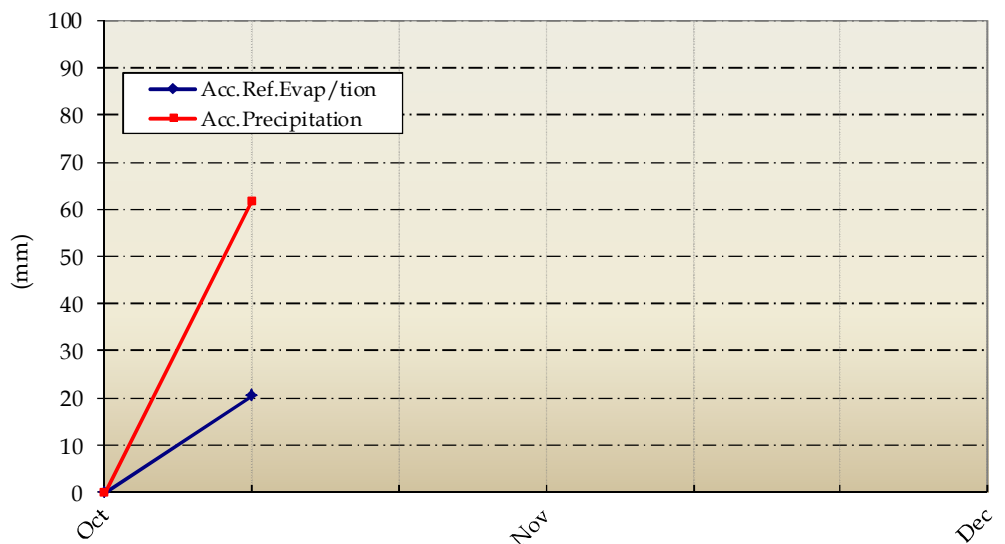
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1st 10-day period (1-10/10/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.0	20.8	20.8	21.6	22.2	24.0	23.6	18.0	18.6	21.2	20.7	24.7	22.8
	Min	11.4	12.0	8.0	6.0	9.0	12.0	13.6	9.0	7.4	6.4	9.5	12.0	11.7
Relative Humidity	Max	93	93	96	97	97	98	100	95	97	94	96	90	-
	Min	76	38	45	52	61	53	80	53	61	44	56	42	-
Soil Temperature at 10 cm	06 UTC	15.4	14.0	14.0	14.0	15.2	16.4	18.4	16.0	14.2	13.4	15.1	19.0	17.4
	12 UTC	15.2	17.0	17.8	18.2	19.6	20.8	19.8	18.4	16.2	17.2	18.0	24.2	20.5
Sunshine Duration		0.0	10.1	10.8	9.8	9.7	9.8	3.6	8.6	4.1	10.4	7.7	8.1	6.7
Precipitation		11.3						42.4	8.2			61.9	5.3	17.2
Evaporation		0.2	2.8	4.0	2.6	3.6	3.1	2.8	1.1	3.9	1.4	25.5	47.8	48.1
Growing Degrees	5	8.7	11.4	9.4	8.8	10.6	13.0	13.6	8.5	8.0	8.8	100.8	133.4	122.8
	10	3.7	6.4	4.4	3.8	5.6	8.0	8.6	3.5	3.0	3.8	50.8	83.4	73.0

1st 10-day period (1-10/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	20.5	25.8	27.4
Precipitation - Reference Evapotranspiration	41.4	-20.5	-10.2
Number of Rainy Days	3.0	2.0	1.6
Number of Dry Days	0.0	12.0	-

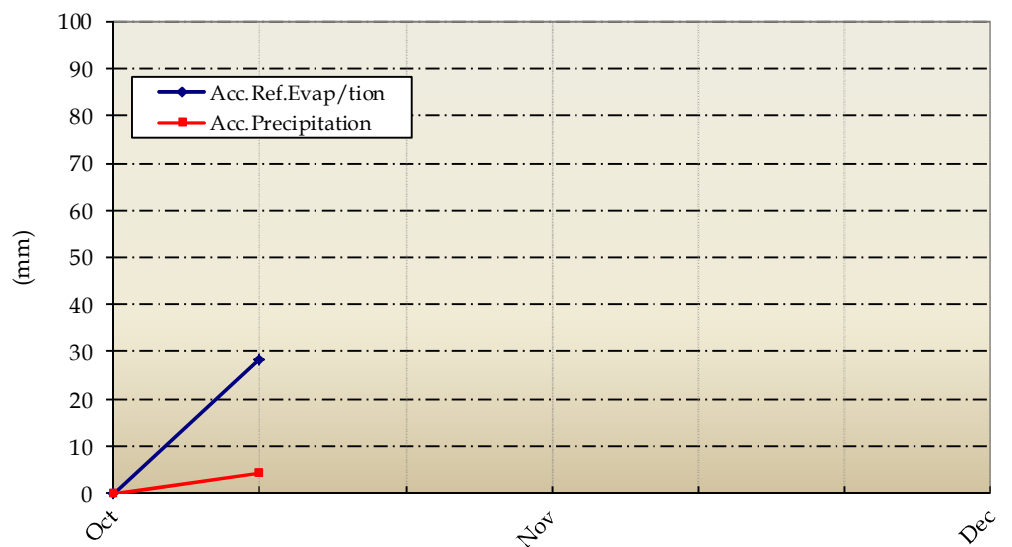
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/10/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.2	25.4	25.5	25.3	25.8	26.6	24.2	21.0	22.2	23.6	24.4	25.2	25.6
	Min	10.7	11.0	10.5	13.2	13.4	15.4	17.6	10.4	10.6	10.9	12.4	14.7	14.3
Relative Humidity	Max	88	87	87	85	86	86	84	76	80	75	83	88	-
	Min	29	31	31	36	38	36	46	31	31	28	34	47	-
Soil Temperature at 10 cm	06 UTC	20.3	20.0	20.4	20.8	21.0	21.9	22.7	19.0	18.4	18.6	20.3	-	20.5
	12 UTC	24.0	22.5	22.6	24.8	23.2	24.5	23.8	22.0	22.0	21.0	23.0	-	23.8
Sunshine Duration		9.9	9.5	9.6	7.6	10.0	8.4	4.2	10.0	10.1	10.0	8.9	7.2	7.7
Precipitation								4.4				4.4	22.2	23.2
Evaporation		8.0	4.0	3.0	3.0	3.0	6.3	4.1	6.0	5.0	5.0	47.4	51.1	42.9
Growing Degrees	5	12.5	13.2	13.0	14.3	14.6	16.0	15.9	10.7	11.4	12.3	133.8	149.5	149.6
	10	7.5	8.2	8.0	9.3	9.6	11.0	10.9	5.7	6.4	7.3	83.8	99.5	99.6

1st 10-day period (1-10/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.5	25.6	26.8
Precipitation - Reference Evapotranspiration	-24.1	-3.4	-3.6
Number of Rainy Days	1.0	2.0	2.2
Number of Dry Days	7.0	17.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

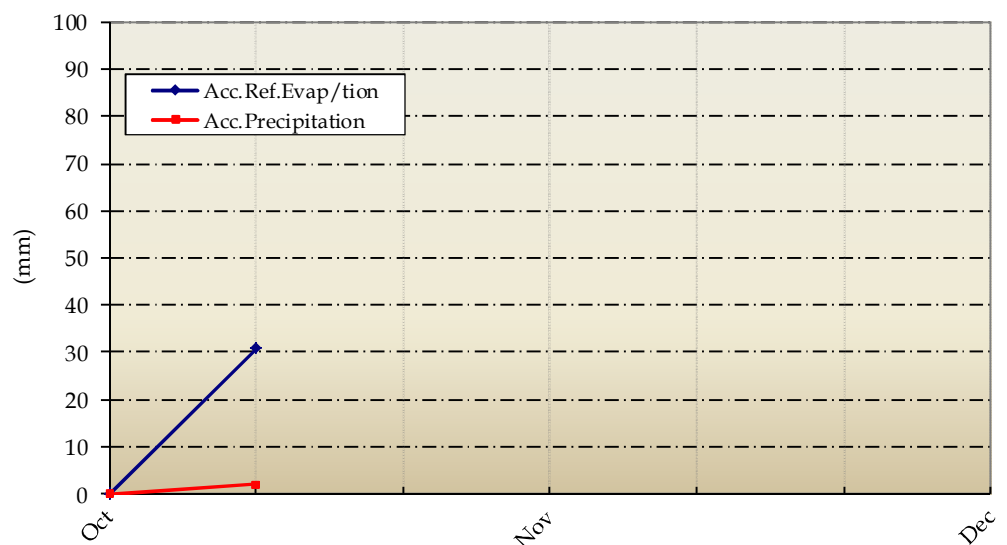


Iraklio

1st 10-day period (1-10/10/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.4	23.0	22.0	23.2	24.4	25.4	25.6	22.8	22.6	23.0	23.4	26.2	24.6
	Min	18.0	19.6	19.0	19.0	18.0	17.2	19.6	20.0	14.2	14.6	17.9	18.2	17.5
Relative Humidity	Max	90	81	77	77	80	77	85	81	93	78	82	86	-
	Min	67	68	56	58	52	48	68	59	47	53	58	58	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		3.5	3.8	8.6	9.1	8.7	2.1	7.8	7.7	9.0	8.7	6.9	8.8	7.9
Precipitation		1.7					0.2					1.9		6.0
Evaporation		3.8	6.6	4.4	5.5	4.6	1.8	2.6	4.1	6.1	3.0	42.5	34.2	53.7
Growing Degrees	5	15.2	16.3	15.5	16.1	16.2	16.3	17.6	16.4	13.4	13.8	156.8	171.9	160.1
	10	10.2	11.3	10.5	11.1	11.2	11.3	12.6	11.4	8.4	8.8	106.8	121.9	110.1

1st 10-day period (1-10/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.8	32.6	-
Precipitation - Reference Evapotranspiration	-28.9	-32.6	6.0
Number of Rainy Days	2.0	0.0	0.9
Number of Dry Days	0.0	17.0	-

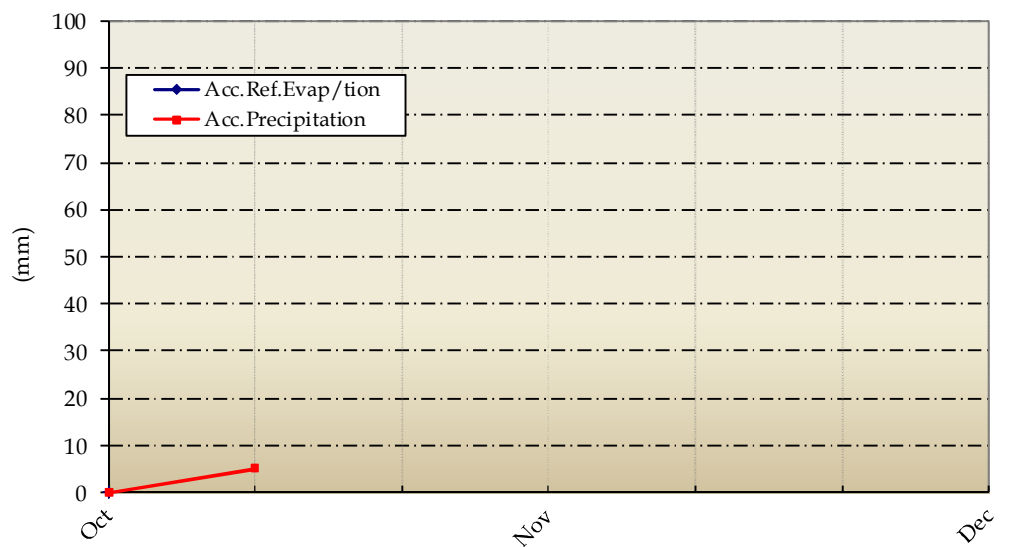
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/10/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.8	24.8	24.2	25.6	25.8	24.8	19.0	18.4	20.8	21.8	22.9	22.0	22.8
	Min	3.8	8.0	5.8	6.0	6.4	6.6	10.2	3.0	0.6	2.6	5.3	8.5	10.0
Relative Humidity	Max	100	100	100	100	100	100	98	100	100	100	100	100	-
	Min	31	29	27	21	27	42	65	30	23	31	33	52	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	15.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	18.3
Sunshine Duration		7.5	8.1	7.3	7.7	8.4	4.8	3.1	8.5	8.6	8.6	7.3	5.5	5.7
Precipitation			0.0				0.0	5.0				5.0	66.2	25.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	32.1
Growing Degrees	5	8.8	11.4	10.0	10.8	11.1	10.7	9.6	5.7	5.7	7.2	91.0	-	114.5
	10	3.8	6.4	5.0	5.8	6.1	5.7	4.6	0.7	0.7	2.2	41.0	-	64.7

1st 10-day period (1-10/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	21.0
Precipitation - Reference Evapotranspiration	-	-	4.8
Number of Rainy Days	1.0	2.0	2.6
Number of Dry Days	9.0	9.0	-

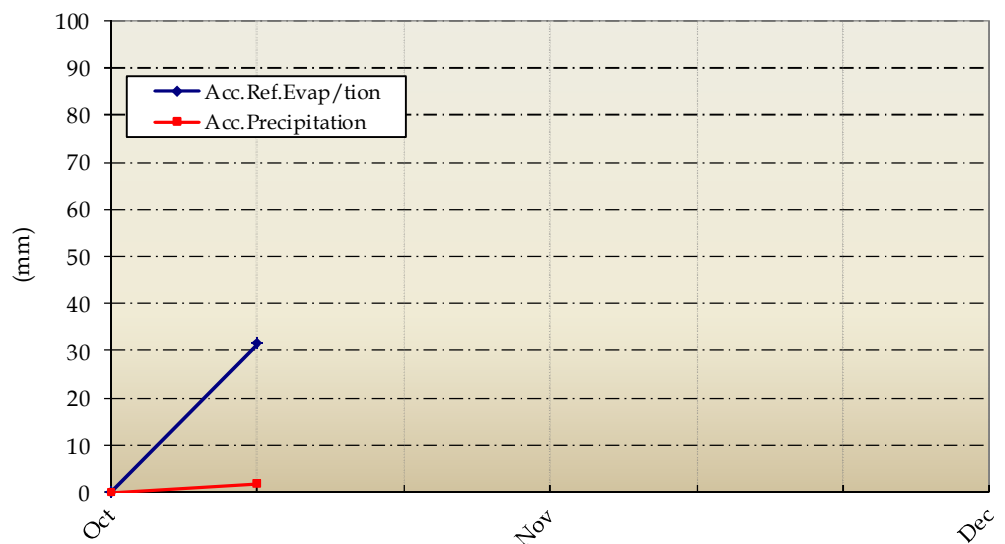
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/10/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.4	25.8	26.0	24.7	25.7	24.5	26.4	22.9	25.1	23.8	24.9	27.9	26.1
	Min	12.4	12.8	12.2	14.4	13.6	14.4	13.3	8.7	7.9	8.1	11.8	14.2	13.8
Relative Humidity	Max	82	87	82	83	88	86	90	86	86	82	85	88	-
	Min	38	38	28	45	52	43	53	24	17	24	36	32	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.6
Sunshine Duration		10.2	9.4	9.8	8.1	9.9	2.6	5.8	9.9	10.2	10.1	8.6	9.4	7.4
Precipitation							0.4	1.4				1.8	2.8	17.8
Evaporation		4.0	4.2	3.8	6.0	2.0	2.6	0.4	3.0	5.8	3.8	35.6	54.9	46.9
Growing Degrees	5	13.4	14.3	14.1	14.6	14.7	14.5	14.9	10.8	11.5	11.0	133.6	160.6	149.4
	10	8.4	9.3	9.1	9.6	9.7	9.5	9.9	5.8	6.5	6.0	83.6	110.6	99.4

1st 10-day period (1-10/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	31.5	36.6	28.3
Precipitation - Reference Evapotranspiration	-29.7	-33.8	-10.5
Number of Rainy Days	2.0	2.0	2.3
Number of Dry Days	6.0	11.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

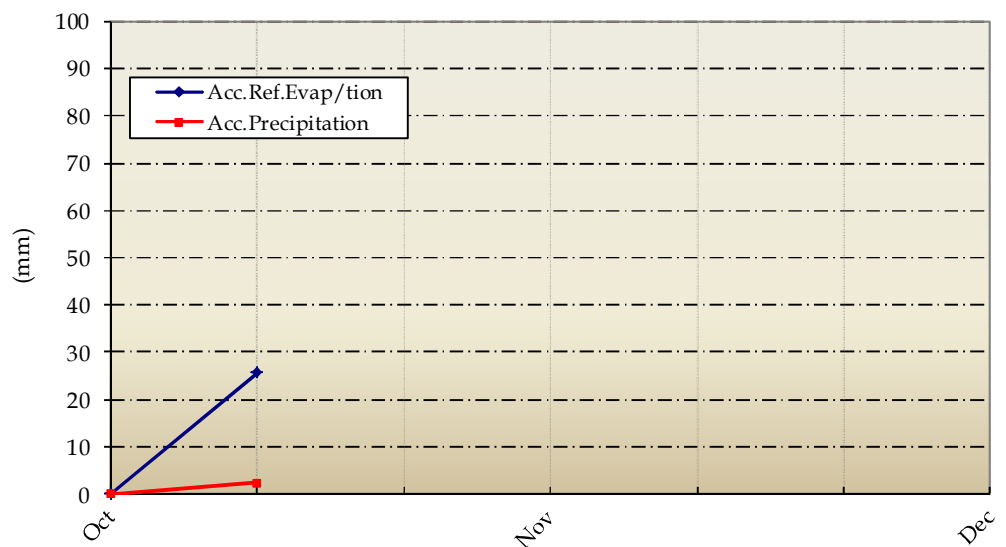


Larisa

1st 10-day period (1-10/10/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.0	20.4	23.8	26.0	28.4	31.2	24.4	22.0	23.8	24.2	24.5	26.0	25.0
	Min	13.1	14.0	8.8	7.0	9.6	9.8	13.0	5.5	5.0	5.8	9.2	11.6	11.6
Relative Humidity	Max	95	95	94	94	93	87	82	81	84	80	88	95	-
	Min	52	58	38	33	25	18	44	23	24	25	34	38	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	20.6	19.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	21.4	20.9
Sunshine Duration		3.3	7.9	7.3	7.3	7.3	7.2	2.2	7.3	7.3	7.3	6.4	6.4	6.2
Precipitation		1.5	0.5					0.3				2.3	17.0	10.5
Evaporation		3.2	5.7	4.8	4.7	11.7	0.4	2.4	0.6	1.0	8.0	42.5	39.2	41.2
Growing Degrees	5	12.1	12.2	11.3	11.5	14.0	15.5	13.7	8.8	9.4	10.0	118.4	138.1	133.0
	10	7.1	7.2	6.3	6.5	9.0	10.5	8.7	3.8	4.4	5.0	68.4	88.1	83.0

1st 10-day period (1-10/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	25.7	23.9	26.4
Precipitation - Reference Evapotranspiration	-23.4	-6.9	-15.9
Number of Rainy Days	3.0	2.0	2.1
Number of Dry Days	0.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

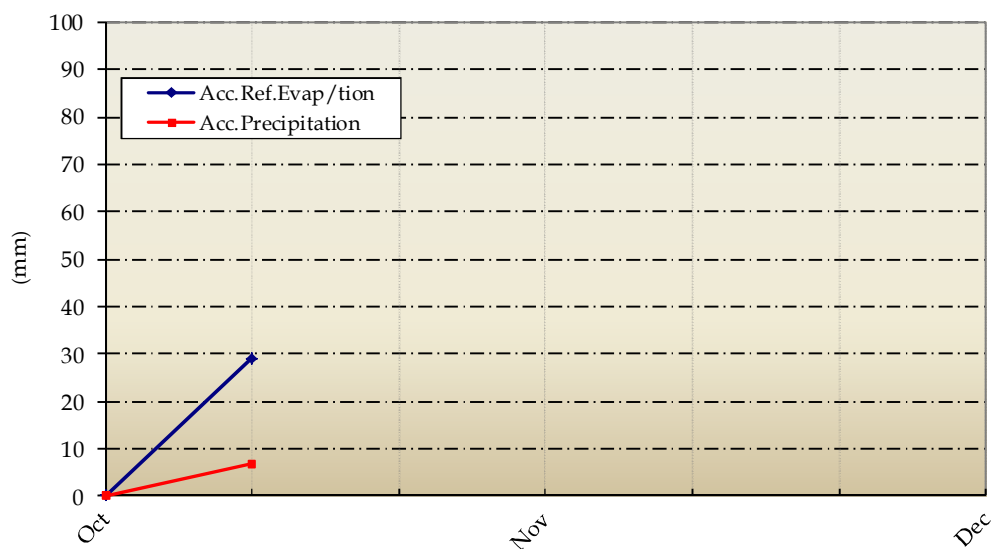


Mikra

1st 10-day period (1-10/10/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.2	21.0	23.1	23.8	26.1	26.8	21.6	19.0	22.5	22.5	22.9	23.7	23.5
	Min	16.0	15.2	12.8	12.1	12.3	11.0	11.3	11.4	6.4	7.1	11.6	12.9	12.8
Relative Humidity	Max	63	68	79	81	79	78	86	59	78	75	75	88	-
	Min	39	41	39	43	31	26	58	29	27	29	36	42	-
Soil Temperature at 10 cm	06 UTC	19.8	20.2	19.4	19.4	19.8	19.6	21.2	15.0	15.3	14.0	18.4	19.8	18.4
	12 UTC	22.0	23.2	21.4	22.0	22.1	22.2	20.8	17.0	18.0	18.0	20.7	22.7	21.9
Sunshine Duration		7.8	4.3	8.8	8.8	10.0	9.4	0.5	11.5	10.0	10.0	8.1	7.6	6.2
Precipitation								6.9				6.9	30.8	9.7
Evaporation		3.8	9.2	12.5	2.5	4.2	1.4	7.1	0.0	4.6	3.4	48.7	40.1	40.2
Growing Degrees	5	14.1	13.1	13.0	13.0	14.2	13.9	11.5	10.2	9.5	9.8	122.1	133.1	131.6
	10	9.1	8.1	8.0	8.0	9.2	8.9	6.5	5.2	4.5	4.8	72.1	83.1	81.6

1st 10-day period (1-10/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	29.2	27.2	25.5
Precipitation - Reference Evapotranspiration	-22.3	3.6	-15.8
Number of Rainy Days	1.0	3.0	1.7
Number of Dry Days	8.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



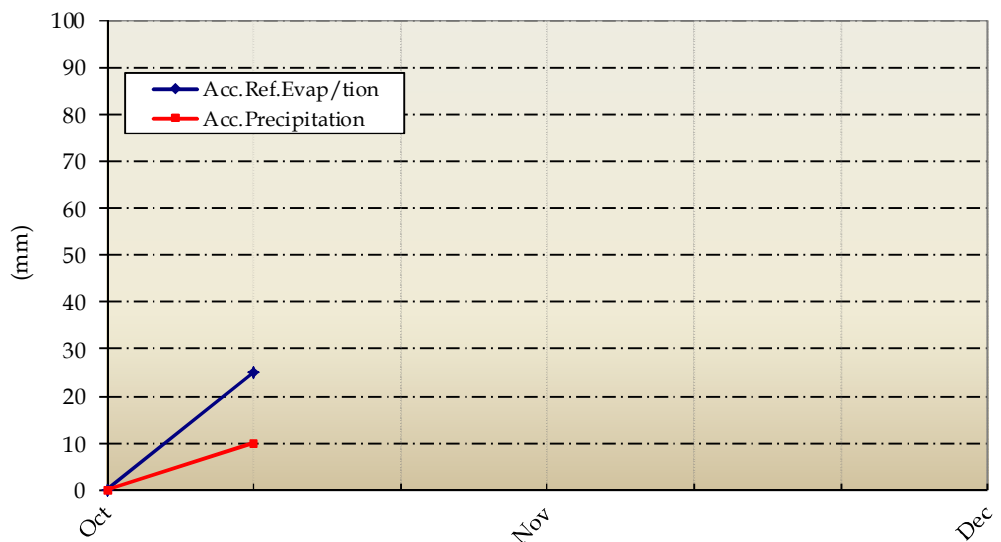


Tanagra

1st 10-day period (1-10/10/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.4	21.2	21.1	24.1	27.1	28.6	27.6	19.4	23.3	23.0	23.3	26.8	24.7
	Min	13.8	13.0	10.8	10.1	1.8	14.8	18.2	12.0	8.2	9.7	11.2	13.8	12.9
Relative Humidity	Max	99	97	95	98	97	94	69	77	77	83	89	88	-
	Min	68	41	43	33	24	26	37	28	22	27	35	34	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		0.0	8.3	7.1	9.5	9.3	10.5	8.4	9.5	9.6	9.8	8.2	7.8	
Precipitation		10.0						0.0				10.0	9.2	9.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	10.6	12.1	11.0	12.1	9.5	16.7	17.9	10.7	10.8	11.4	122.6	153.2	
	10	5.6	7.1	6.0	7.1	4.5	11.7	12.9	5.7	5.8	6.4	72.6	103.2	

1st 10-day period (1-10/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	25.1	24.7	
Precipitation - Reference Evapotranspiration	-15.1	-15.5	9.2
Number of Rainy Days	1.0	2.0	2.1
Number of Dry Days	0.0	13.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

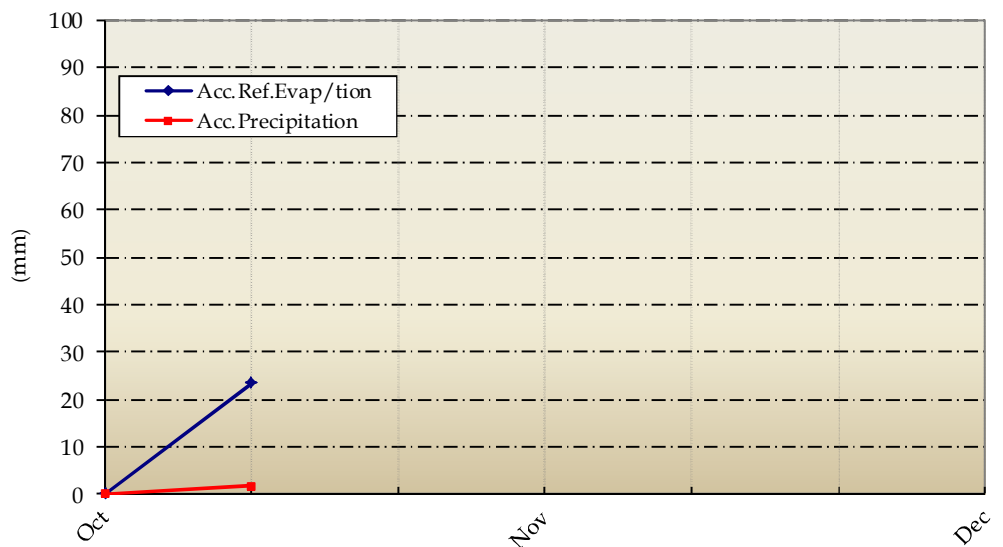


Tripoli

1st 10-day period (1-10/10/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.1	20.4	20.6	24.0	25.1	24.1	21.4	20.1	21.3	22.8	22.0	24.6	23.3
	Min	6.8	9.2	5.7	7.3	6.7	8.5	9.3	4.7	1.7	3.9	6.4	7.7	9.0
Relative Humidity	Max	100	100	100	100	100	93	100	91	93	95	97	100	-
	Min	43	41	35	32	26	32	54	15	14	19	31	31	-
Soil Temperature at 10 cm	06 UTC	-	17.0	16.0	16.2	16.2	17.0	-	-	13.8	14.2	15.8	17.0	17.3
	12 UTC	-	19.8	18.4	19.4	20.2	19.4	-	-	17.2	17.8	18.9	21.8	19.3
Sunshine Duration		6.9	7.1	8.8	7.5	10.0	8.5	5.7	10.0	9.7	9.4	8.4	8.4	7.4
Precipitation								1.8				1.8	43.9	9.7
Evaporation		-	2.2	3.2	2.8	4.1	-	-	-	2.8	3.0	-	-	32.6
Growing Degrees	5	8.5	9.8	8.2	10.7	10.9	11.3	10.4	7.4	6.5	8.4	91.9	111.7	111.8
	10	3.5	4.8	3.2	5.7	5.9	6.3	5.4	2.4	1.5	3.4	41.9	61.7	62.0

1st 10-day period (1-10/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.5	24.9	25.4
Precipitation - Reference Evapotranspiration	-21.7	19.0	-15.7
Number of Rainy Days	1.0	2.0	2.0
Number of Dry Days	7.0	16.0	-

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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