



# AGROMETEOROLOGICAL BULLETIN

*February 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



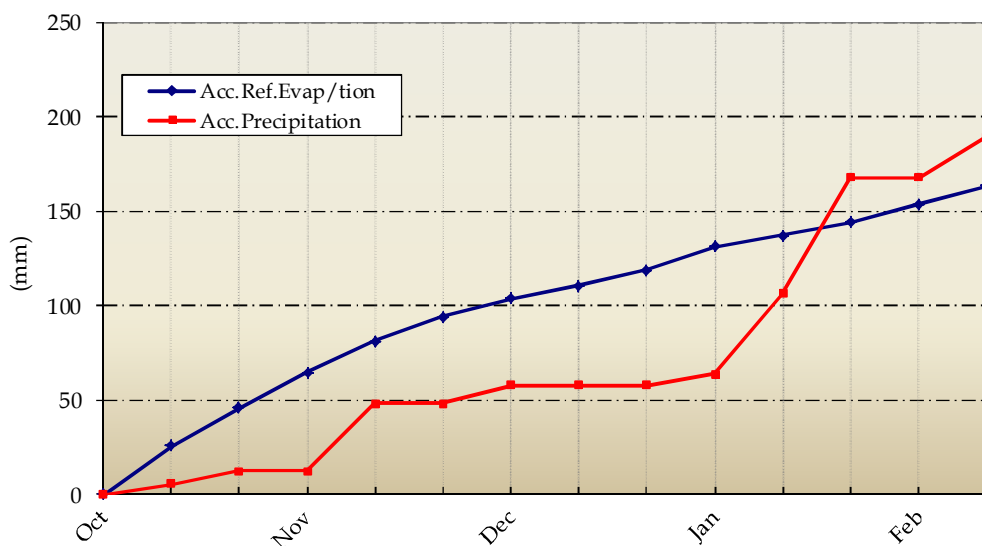
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1st 10-day period (1-10/02/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	6.8	10.0	13.4	15.8	16.6	15.4	15.0	13.8	8.8	7.0	12.3	12.8	9.1
	Min	-6.8	-4.0	4.6	9.0	8.4	6.2	9.2	8.4	3.8	3.2	4.2	3.5	0.8
Relative Humidity	Max	95	91	94	95	97	97	97	95	79	76	92	94	-
	Min	49	72	62	70	66	74	73	69	66	58	66	62	-
Soil Temperature at 10 cm	06 UTC	8.0	2.4	5.6	7.6	9.2	8.0	11.0	9.6	8.0	6.0	7.5	6.3	5.3
	12 UTC	3.6	4.6	8.6	10.2	12.0	10.6	10.6	11.8	8.2	7.4	8.8	8.7	6.6
Sunshine Duration		8.1	1.6	5.8	6.0	5.4	1.8	0.0	1.7	0.0	1.1	3.2	4.8	3.9
Precipitation						1.3		20.4		0.1		21.8	80.6	19.4
Evaporation		0.0	0.0	0.5	2.1	1.8	1.4	0.1	3.0	2.3	1.2	12.4	17.4	11.6
Growing Degrees	5	0.0	0.0	4.0	7.4	7.5	5.8	7.1	6.1	1.3	0.1	39.3	37.1	14.1
	10	0.0	0.0	0.0	2.4	2.5	0.8	2.1	1.1	0.0	0.0	8.9	8.2	1.4

1st 10-day period (1-10/02/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	9.9	11.9	10.9
Precipitation - Reference Evapotranspiration	11.9	68.7	8.5
Number of Rainy Days	3.0	1.0	2.5
Number of Dry Days	15.0	9.0	-

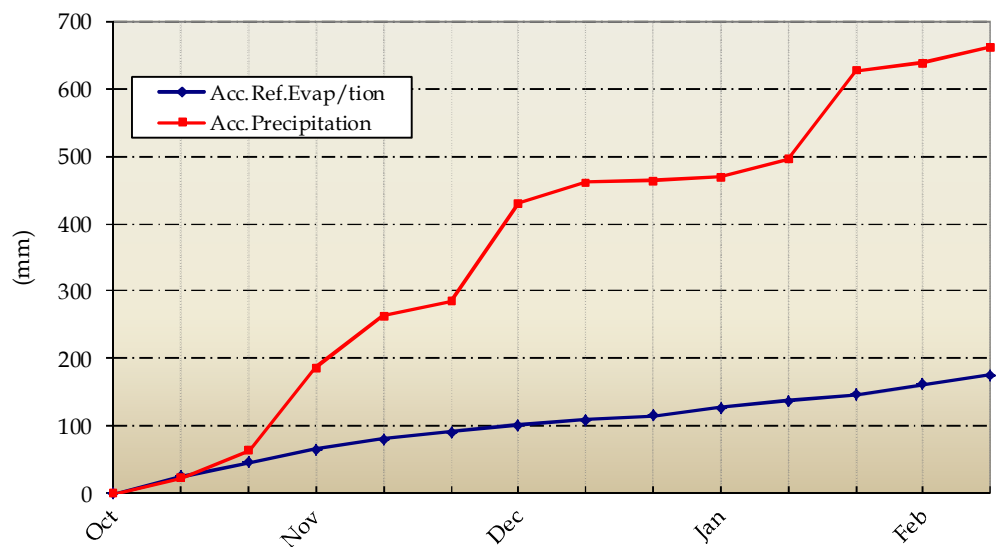
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/02/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.3	17.0	17.0	17.2	17.8	18.6	13.6	16.2	16.0	13.8	16.2	15.8	14.0
	Min	7.0	7.0	10.0	9.8	12.6	12.2	8.4	6.1	6.8	8.2	8.8	5.7	4.8
Relative Humidity	Max	89	89	90	89	88	86	89	89	86	89	88	87	-
	Min	61	48	63	58	61	47	63	51	47	51	55	54	-
Soil Temperature at 10 cm	06 UTC	9.4	10.0	11.2	10.2	10.4	12.6	12.2	10.6	11.0	9.7	10.7	-	9.2
	12 UTC	14.6	11.2	13.8	14.2	13.2	11.0	13.0	11.8	12.0	13.4	12.8	-	10.9
Sunshine Duration		3.9	5.9	5.8	6.5	6.0	6.4	2.0	9.1	2.3	0.0	4.8	6.0	5.2
Precipitation			0.8	5.0			5.2	13.1			0.1	24.2	17.1	28.0
Evaporation		1.0	7.4	2.0	4.0	4.0	3.4	1.8	1.0	2.0	2.0	28.6	21.6	19.1
Growing Degrees	5	6.2	7.0	8.5	8.5	10.2	10.4	6.0	6.2	6.4	6.0	75.3	57.6	44.7
	10	1.2	2.0	3.5	3.5	5.2	5.4	1.0	1.2	1.4	1.0	25.3	13.8	7.9

1st 10-day period (1-10/02/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.0	14.2	12.4
Precipitation - Reference Evapotranspiration	10.2	2.9	15.6
Number of Rainy Days	5.0	3.0	4.1
Number of Dry Days	5.0	14.0	-

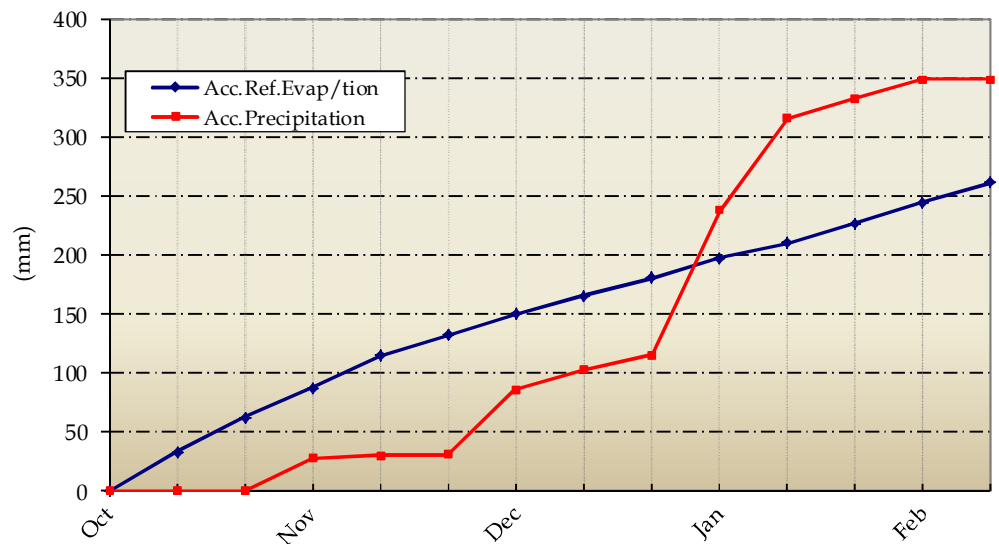
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/02/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	12.6	16.0	16.2	17.0	19.4	20.4	16.8	17.0	15.6	16.4	16.7	15.8	14.6
	Min	9.0	6.2	8.0	11.2	9.0	13.2	12.8	9.6	10.2	9.0	9.8	9.4	8.7
Relative Humidity	Max	85	87	91	85	86	86	86	85	92	92	88	83	-
	Min	57	64	66	59	53	40	56	55	68	73	59	54	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		5.8	6.8	7.6	4.6	5.2	8.6	0.0	8.2	7.2	7.2	6.1	6.5	4.3
Precipitation										0.0		0.0	29.9	22.4
Evaporation		1.4	1.6	4.3	3.6	1.4	2.4	3.6	0.5	1.4	1.5	21.7	26.2	29.3
Growing Degrees	5	5.8	6.1	7.1	9.1	9.2	11.8	9.8	8.3	7.9	7.7	82.8	76.1	66.4
	10	0.8	1.1	2.1	4.1	4.2	6.8	4.8	3.3	2.9	2.7	32.8	26.6	19.8

1st 10-day period (1-10/02/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	17.1	21.3	-
Precipitation - Reference Evapotranspiration	-17.1	8.6	22.4
Number of Rainy Days	0.0	2.0	4.2
Number of Dry Days	11.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

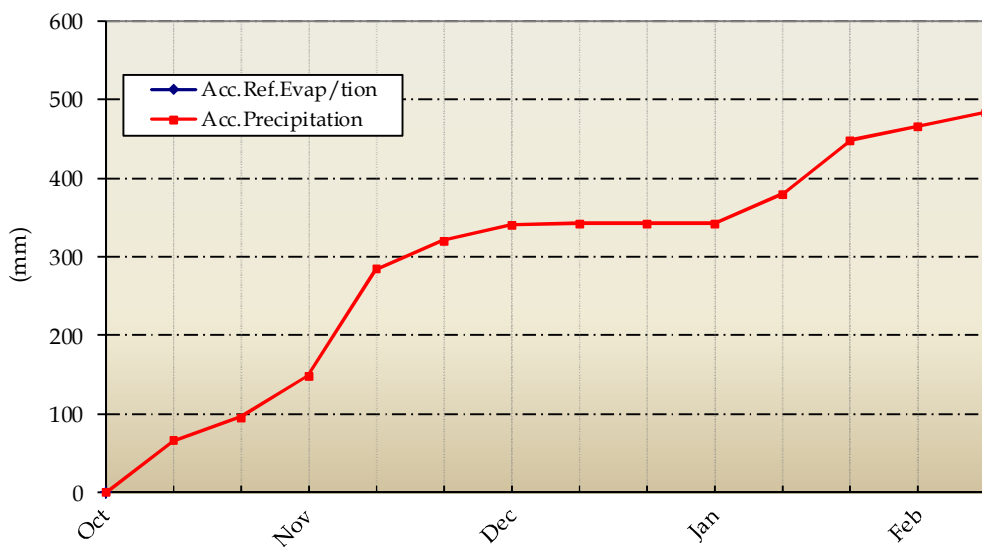


Ioannina

1st 10-day period (1-10/02/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.8	11.4	12.0	14.0	11.8	14.6	9.1	-	12.8	-	12.2	13.6	10.0
	Min	4.4	-1.0	2.0	6.0	-	8.1	4.3	-0.5	1.0	5.6	3.3	0.8	0.6
Relative Humidity	Max	100	100	100	-	100	100	100	100	100	100	100	99	-
	Min	78	-	64	-	94	53	65	50	40	42	61	46	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	4.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.1
Sunshine Duration		3.0	-	1.2	-	0.0	1.0	2.5	3.1	-	7.0	2.5	4.0	3.6
Precipitation		0.8	0.0	0.5	1.5	2.2	6.6	6.0	0.0			17.6	24.8	35.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	5.0
Growing Degrees	5	3.1	0.2	2.0	5.0	-	6.4	1.7	-	1.9	-	-	-	13.4
	10	0.0	0.0	0.0	0.0	-	1.4	0.0	-	0.0	-	-	-	0.3

1st 10-day period (1-10/02/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	9.3
Precipitation - Reference Evapotranspiration	-	-	26.5
Number of Rainy Days	6.0	3.0	3.5
Number of Dry Days	0.0	16.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

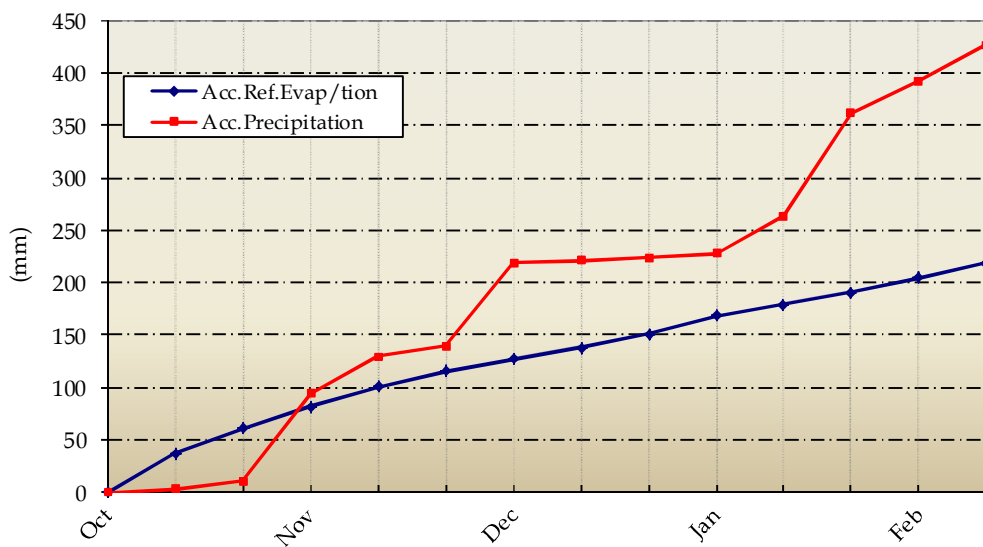


Kalamata

1st 10-day period (1-10/02/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.2	14.8	15.2	18.2	17.8	18.6	14.8	17.2	17.8	18.7	16.6	17.3	14.9
	Min	2.4	9.3	5.0	7.0	5.9	6.0	8.0	8.6	6.9	8.2	6.7	4.7	4.8
Relative Humidity	Max	93	94	95	94	93	95	94	93	92	91	93	91	-
	Min	64	77	61	49	62	56	56	51	47	40	56	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	10.6	9.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	11.6	11.0
Sunshine Duration		0.1	0.7	2.0	3.8	4.0	5.2	0.0	3.3	5.9	4.4	2.9	6.1	5.1
Precipitation		0.0	3.5		0.5		5.7	10.7	11.0		3.6	35.0	13.8	28.3
Evaporation		0.7	6.7	0.4	0.7	1.4	0.6	10.0	4.9	2.2	2.4	30.0	20.1	24.5
Growing Degrees	5	2.8	7.1	5.1	7.6	6.9	7.3	6.4	7.9	7.4	8.5	66.8	59.9	48.9
	10	0.0	2.1	0.1	2.6	1.9	2.3	1.4	2.9	2.4	3.5	19.0	13.2	8.7

1st 10-day period (1-10/02/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.5	16.2	14.4
Precipitation - Reference Evapotranspiration	21.5	-2.4	13.9
Number of Rainy Days	6.0	3.0	4.1
Number of Dry Days	2.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

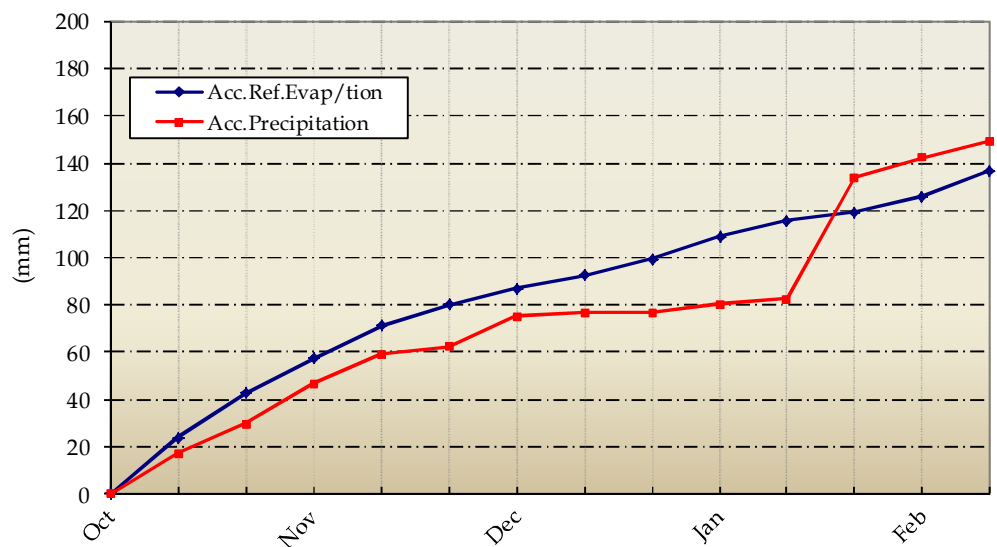


Larisa

1st 10-day period (1-10/02/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	9.2	11.8	16.6	18.1	20.4	19.5	14.8	13.8	10.0	8.2	14.2	16.1	11.2
	Min	-1.9	-2.7	-1.7	1.8	4.0	5.0	8.0	2.0	3.8	6.8	2.5	1.4	0.4
Relative Humidity	Max	100	100	100	100	100	100	100	100	100	100	100	96	-
	Min	62	62	40	39	40	39	57	58	92	74	56	41	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	8.2	6.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	8.0	6.8
Sunshine Duration		4.5	6.0	7.2	5.9	5.9	4.0	3.6	1.4	0.0	0.0	3.8	4.9	4.3
Precipitation							0.6	1.7	0.2	3.7	0.9	7.1	0.0	9.7
Evaporation		0.0	0.0	0.9	1.6	4.4	1.0	2.2	1.4	4.7	0.3	16.5	14.2	6.9
Growing Degrees	5	0.0	0.0	2.5	5.0	7.2	7.3	6.4	2.9	1.9	2.5	35.6	38.5	16.7
	10	0.0	0.0	0.0	0.0	2.2	2.3	1.4	0.0	0.0	0.0	5.9	7.7	0.7

1st 10-day period (1-10/02/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.1	12.9	9.6
Precipitation - Reference Evapotranspiration	-4.0	-12.9	0.1
Number of Rainy Days	5.0	0.0	2.8
Number of Dry Days	6.0	21.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



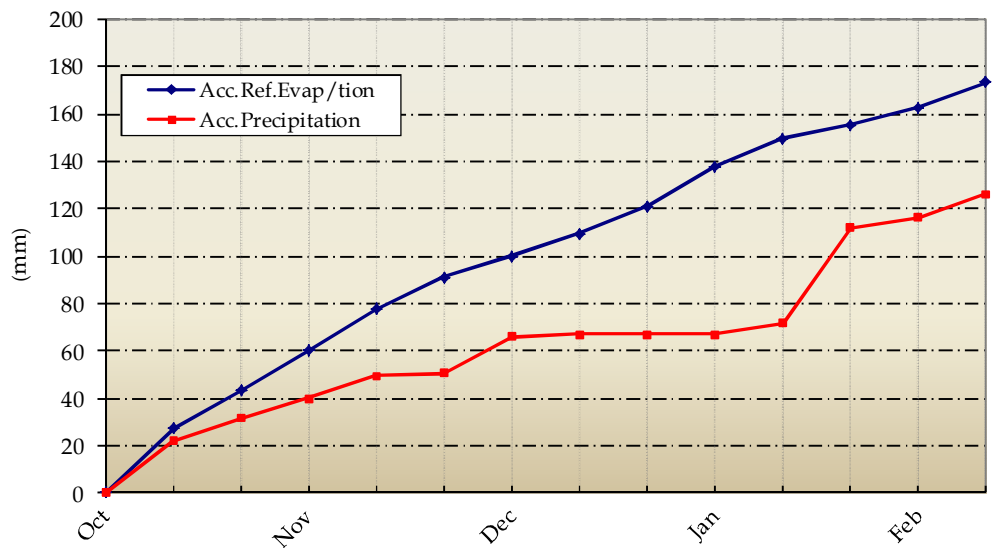


Mikra

1st 10-day period (1-10/02/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	8.0	9.4	10.7	16.2	18.2	19.0	16.6	13.6	10.2	8.6	13.0	13.6	10.3
	Min	3.4	2.1	2.8	2.6	7.4	9.2	9.3	3.8	6.9	7.0	5.4	4.4	1.6
Relative Humidity	Max	94	96	97	97	85	85	96	99	90	71	91	88	-
	Min	70	67	66	47	41	36	61	55	67	53	56	53	-
Soil Temperature at 10 cm	06 UTC	4.8	5.2	6.0	6.2	8.4	9.0	10.1	8.4	9.0	8.4	7.6	7.6	5.6
	12 UTC	6.2	6.8	7.8	7.6	10.2	10.6	11.2	9.6	10.4	8.8	8.9	9.0	7.1
Sunshine Duration		1.8	1.1	6.6	5.1	6.1	2.1	0.3	7.3	0.1	0.0	3.0	4.7	4.3
Precipitation							0.0	9.5	0.3			9.8	0.8	10.5
Evaporation		0.6	1.4	1.5	0.6	1.8	2.1	1.6	2.2	0.6	1.9	14.3	13.6	12.4
Growing Degrees	5	0.7	0.8	1.8	4.4	7.8	9.1	8.0	3.7	3.6	2.8	42.5	40.3	17.2
	10	0.0	0.0	0.0	0.0	2.8	4.1	3.0	0.0	0.0	0.0	9.9	3.4	0.8

1st 10-day period (1-10/02/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	10.6	14.6	11.4
Precipitation - Reference Evapotranspiration	-0.8	-13.8	-0.9
Number of Rainy Days	2.0	1.0	2.6
Number of Dry Days	8.0	17.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



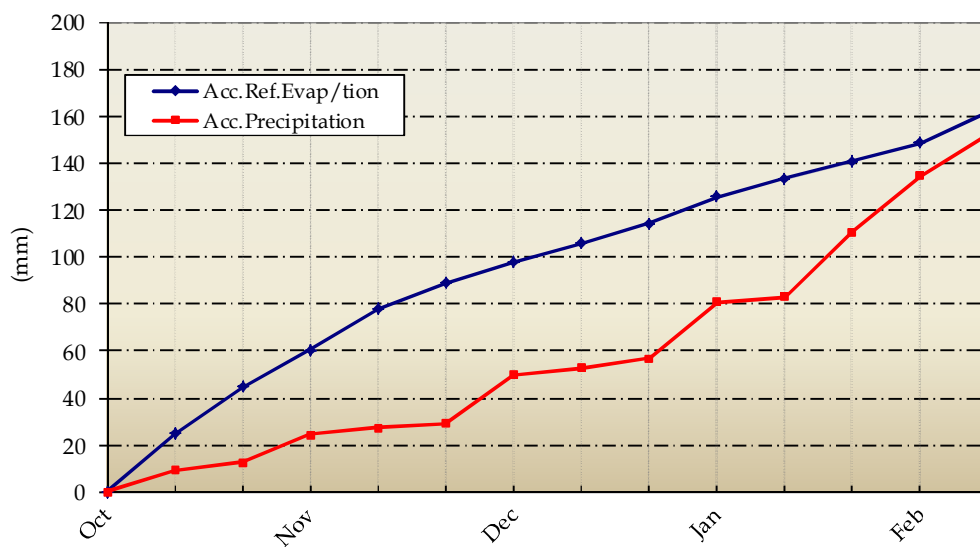


Tanagra

1st 10-day period (1-10/02/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.7	14.4	17.3	18.4	18.3	19.3	12.7	11.8	10.5	9.3	14.4	14.9	12.0
	Min	2.6	2.4	4.6	3.2	11.9	12.4	8.2	4.9	6.8	7.7	6.5	4.5	2.6
Relative Humidity	Max	98	100	99	100	68	64	100	100	99	74	90	96	-
	Min	55	54	44	35	40	33	61	71	65	68	53	48	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		6.4	8.0	7.2	6.6	2.7	3.1	0.2	0.2	0.0	0.0	3.4	5.1	
Precipitation								14.5	3.1	0.1		17.7	21.6	16.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	21.6	
Growing Degrees	5	2.2	3.4	6.0	5.8	10.1	10.9	5.5	3.4	3.7	3.5	54.2	46.6	
	10	0.0	0.0	1.0	0.8	5.1	5.9	0.5	0.0	0.0	0.0	13.2	13.8	

1st 10-day period (1-10/02/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	12.8	12.6	
Precipitation - Reference Evapotranspiration	4.9	9.0	16.3
Number of Rainy Days	3.0	2.0	4.1
Number of Dry Days	7.0	10.0	-

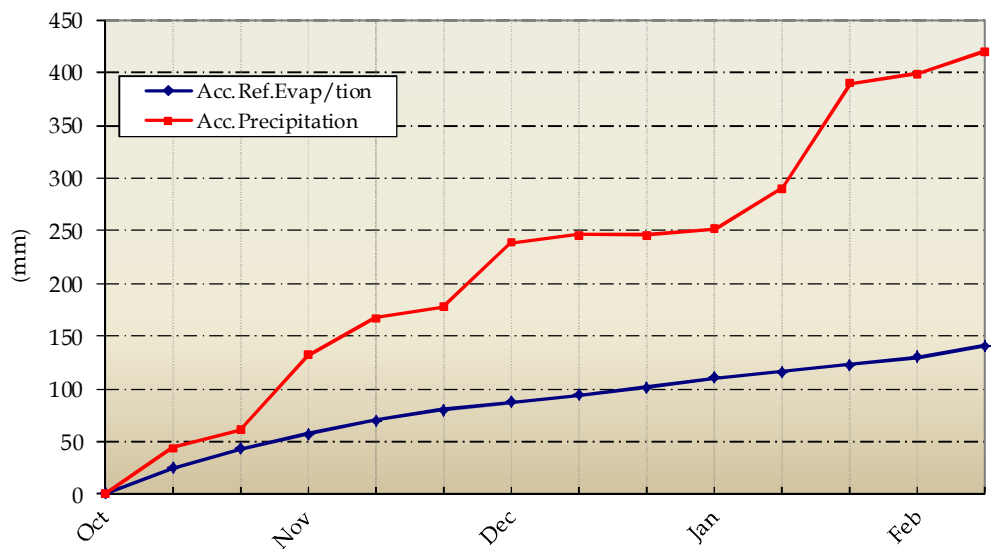
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/02/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.7	13.5	13.1	12.4	13.8	15.2	10.8	10.6	10.6	6.8	11.8	13.6	10.0
	Min	-3.3	0.8	6.9	5.8	7.4	5.4	3.7	4.8	1.6	4.2	3.7	0.1	0.4
Relative Humidity	Max	100	100	100	90	98	100	100	100	100	95	98	100	-
	Min	57	51	49	57	58	43	68	66	62	76	59	46	-
Soil Temperature at 10 cm	06 UTC	2.4	4.2	6.2	6.4	-	7.4	7.4	7.2	6.8	7.2	6.1	4.9	5.0
	12 UTC	-	6.6	7.4	-	-	9.6	8.6	8.2	8.4	7.2	8.0	8.3	5.8
Sunshine Duration		4.0	3.2	2.3	4.5	4.1	6.0	1.1	0.6	1.2	0.0	2.7	5.7	4.9
Precipitation			0.0	0.0		0.2	0.1	14.4	7.1	0.0	0.0	21.8	12.5	26.5
Evaporation		0.0	0.9	0.8	-	-	1.6	0.4	0.4	0.7	1.2	-	25.2	8.6
Growing Degrees	5	0.0	2.2	5.0	4.1	5.6	5.3	2.3	2.7	1.1	0.5	28.7	21.7	13.4
	10	0.0	0.0	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.0	0.9	0.9	0.4

1st 10-day period (1-10/02/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	10.2	12.3	11.6
Precipitation - Reference Evapotranspiration	11.6	0.2	14.9
Number of Rainy Days	4.0	2.0	4.1
Number of Dry Days	8.0	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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