



# AGROMETEOROLOGICAL BULLETIN

*March 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



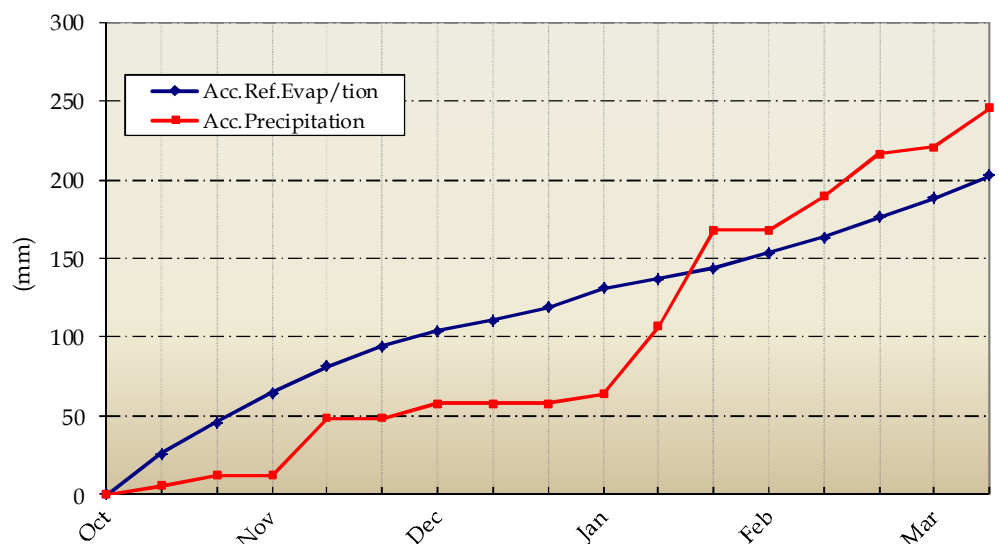
Hellenic National Meteorological Service  
Division of Climatology-Applications  
El. Venizelou Street 14, 16777  
Helliniko, Athens

*Web addresses of HNMS*  
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[www.meteo.gov.gr](http://www.meteo.gov.gr)  
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1st 10-day period (1-10/03/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.0	13.0	14.2	17.6	15.8	15.6	16.2	14.2	13.4	14.4	14.9	16.2	10.6
	Min	9.0	8.8	2.4	2.4	3.0	4.6	8.4	10.2	9.6	8.8	6.7	8.9	2.2
Relative Humidity	Max	95	93	93	93	90	97	97	97	88	87	93	94	-
	Min	84	80	62	42	47	72	68	84	65	59	66	64	-
Soil Temperature at 10 cm	06 UTC	11.0	11.4	7.4	8.2	8.0	9.2	11.0	12.0	11.0	10.2	9.9	11.2	5.9
	12 UTC	12.6	11.6	13.0	14.2	14.0	12.6	14.4	12.4	11.8	13.6	13.0	13.6	8.0
Sunshine Duration		0.8	0.5	9.3	9.7	9.5	2.1	2.5	0.0	0.0	5.5	4.0	4.9	4.8
Precipitation			8.0					0.0	14.5	0.3	1.8	24.6	36.3	16.7
Evaporation		0.8	0.7	2.0	3.0	3.5	1.5	0.7	0.5	0.6	3.7	17.0	20.0	18.5
Growing Degrees	5	7.0	5.9	3.3	5.0	4.4	5.1	7.3	7.2	6.5	6.6	58.3	75.3	22.8
	10	2.0	0.9	0.0	0.0	0.0	0.1	2.3	2.2	1.5	1.6	10.6	26.6	2.2

1st 10-day period (1-10/03/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.5	16.6	16.2
Precipitation - Reference Evapotranspiration	10.1	19.7	0.5
Number of Rainy Days	4.0	4.0	2.2
Number of Dry Days	3.0	7.0	-

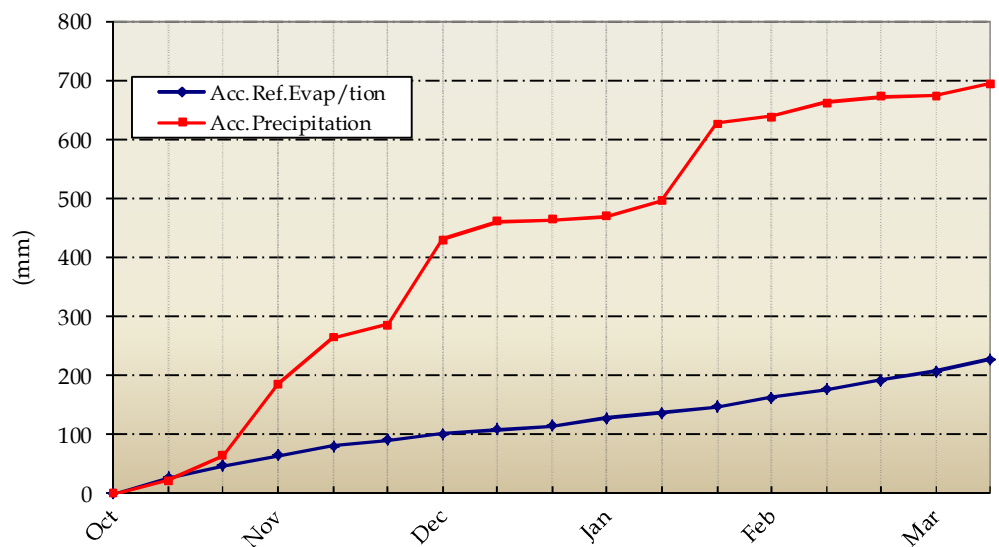
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/03/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.6	16.4	17.2	18.6	18.9	17.6	16.5	15.5	16.0	15.1	16.9	17.0	15.2
	Min	8.7	11.0	6.0	5.6	4.9	9.8	9.0	8.6	5.8	10.0	7.9	7.7	5.8
Relative Humidity	Max	90	86	88	89	90	90	90	90	90	90	89	89	-
	Min	59	45	42	49	44	61	55	55	56	58	52	50	-
Soil Temperature at 10 cm	06 UTC	13.0	13.0	11.8	12.0	7.6	13.4	11.0	12.5	11.4	11.0	11.7	-	10.0
	12 UTC	16.4	14.0	14.4	18.6	14.5	14.0	14.4	12.5	12.0	12.8	14.4	-	12.2
Sunshine Duration		9.1	9.4	10.0	10.1	8.2	5.5	0.0	0.7	2.0	1.2	5.6	5.8	6.1
Precipitation		0.1						8.4	10.5		2.1	21.1	40.5	26.8
Evaporation		2.0	2.0	3.0	1.0	1.0	2.0	6.7	2.3	2.1	0.1	22.2	25.0	25.2
Growing Degrees	5	8.2	8.7	6.6	7.1	6.9	8.7	7.8	7.1	5.9	7.6	74.4	73.4	55.6
	10	3.2	3.7	1.6	2.1	1.9	3.7	2.8	2.1	0.9	2.6	24.4	23.4	13.0

1st 10-day period (1-10/03/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	20.0	19.7	18.0
Precipitation - Reference Evapotranspiration	1.1	20.8	8.8
Number of Rainy Days	4.0	7.0	3.2
Number of Dry Days	1.0	9.0	-

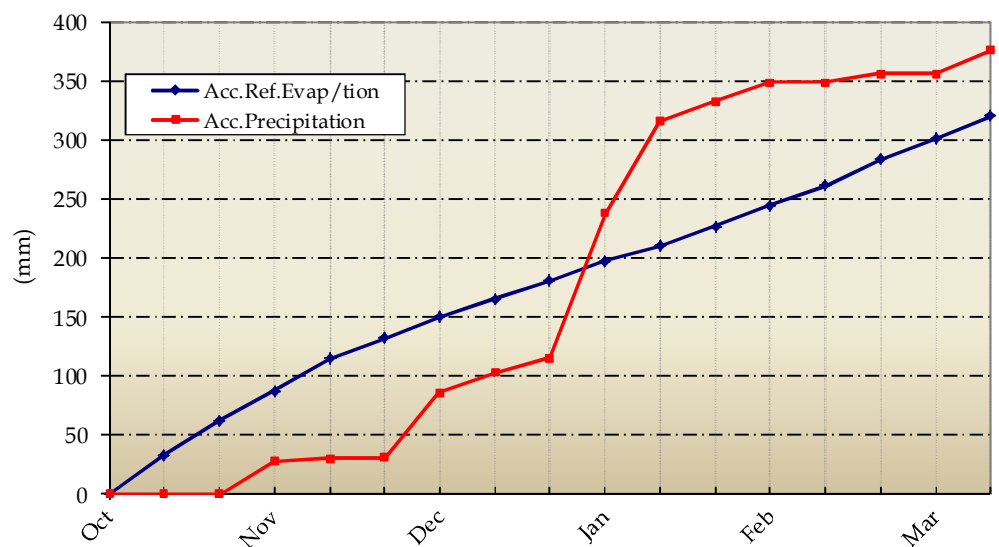
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/03/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.0	17.0	17.2	17.2	16.8	17.4	20.0	17.4	16.4	16.2	17.4	19.1	15.6
	Min	9.8	12.0	8.6	8.4	8.2	9.4	11.6	13.4	10.2	10.2	10.2	12.6	8.9
Relative Humidity	Max	97	92	95	97	97	94	95	88	92	95	94	83	-
	Min	87	80	83	80	82	74	75	78	77	78	79	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		7.9	9.5	9.7	8.5	9.2	8.7	2.2	6.4	4.7	2.9	7.0	7.8	5.3
Precipitation								0.0	6.5	4.6	8.9	20.0	2.0	20.8
Evaporation		3.5	3.7	1.9	0.9	1.4	2.4	4.1	0.2	1.3	0.4	19.8	28.9	33.2
Growing Degrees	5	8.9	9.5	7.9	7.8	7.5	8.4	10.8	10.4	8.3	8.2	87.7	108.3	72.7
	10	3.9	4.5	2.9	2.8	2.5	3.4	5.8	5.4	3.3	3.2	37.7	58.3	25.3

1st 10-day period (1-10/03/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	19.7	30.6	-
Precipitation - Reference Evapotranspiration	0.3	-28.6	20.8
Number of Rainy Days	3.0	1.0	3.3
Number of Dry Days	21.0	11.0	-

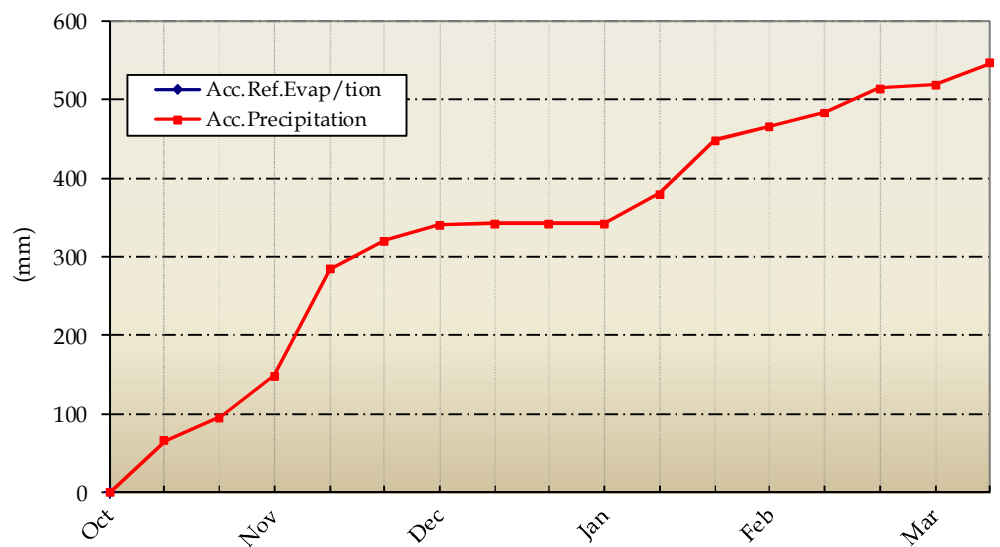
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/03/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	-	15.8	-	-	18.6	15.4	12.6	13.6	13.8	15.0	15.0	13.2	12.2
	Min	2.2	-0.5	-0.8	-0.8	-	-	-	3.8	8.5	-	2.1	4.2	1.7
Relative Humidity	Max	100	100	100	-	-	-	100	100	-	87	98	99	-
	Min	78	-	28	-	-	-	60	48	-	41	51	51	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	7.3
Sunshine Duration		0.7	-	8.2	-	-	-	-	4.5	-	0.8	3.6	3.3	4.6
Precipitation		9.4					4.2	8.5	5.6		0.0	27.7	46.2	27.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	14.8
Growing Degrees	5	-	2.7	-	-	-	-	-	3.7	6.2	-	-	-	25.1
	10	-	0.0	-	-	-	-	-	0.0	1.2	-	-	-	2.0

1st 10-day period (1-10/03/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	15.2
Precipitation - Reference Evapotranspiration	-	-	12.1
Number of Rainy Days	4.0	7.0	3.5
Number of Dry Days	1.0	1.0	-

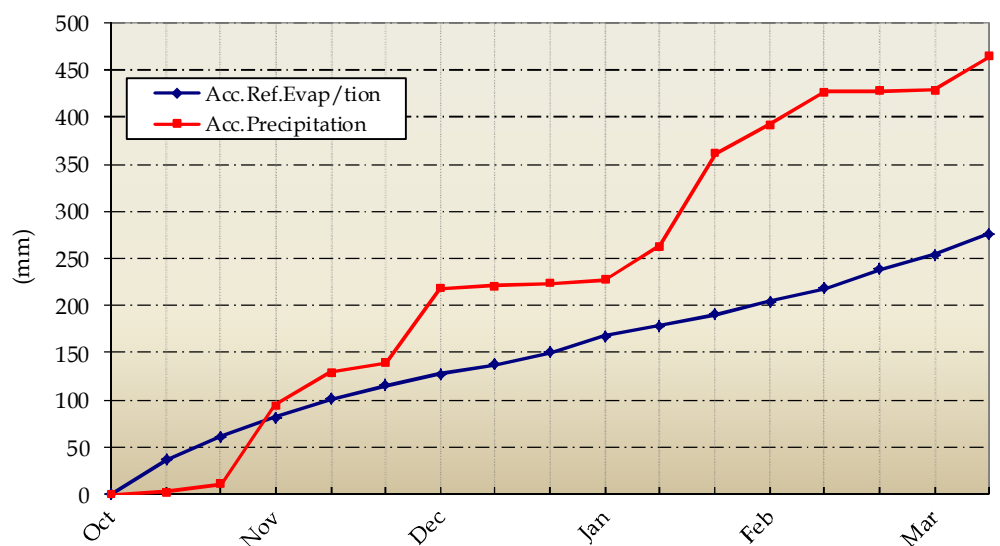
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/03/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.6	19.0	20.7	19.4	18.7	18.2	17.7	15.6	15.7	18.2	18.2	18.6	16.0
	Min	6.5	7.5	4.5	4.2	4.8	6.5	7.4	7.8	7.2	9.0	6.5	7.3	5.6
Relative Humidity	Max	92	93	91	94	94	94	94	95	92	91	93	93	-
	Min	51	37	31	42	47	56	50	65	50	50	48	46	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	13.1	10.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	14.4	12.1
Sunshine Duration		6.3	9.9	10.8	10.5	9.4	6.8	3.0	2.5	0.5	3.1	6.3	7.0	5.8
Precipitation		0.0	0.3					10.0	24.8	0.3	0.3	35.7	15.7	26.1
Evaporation		3.5	4.8	3.6	3.0	2.6	3.5	0.4	1.6	0.2	2.0	25.2	18.5	29.9
Growing Degrees	5	7.6	8.3	7.6	6.8	6.8	7.4	7.6	6.7	6.5	8.6	73.6	79.3	58.2
	10	2.6	3.3	2.6	1.8	1.8	2.4	2.6	1.7	1.5	3.6	23.6	29.3	14.6

1st 10-day period (1-10/03/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.7	23.7	18.8
Precipitation - Reference Evapotranspiration	13.0	-8.0	7.3
Number of Rainy Days	5.0	5.0	3.2
Number of Dry Days	2.0	6.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

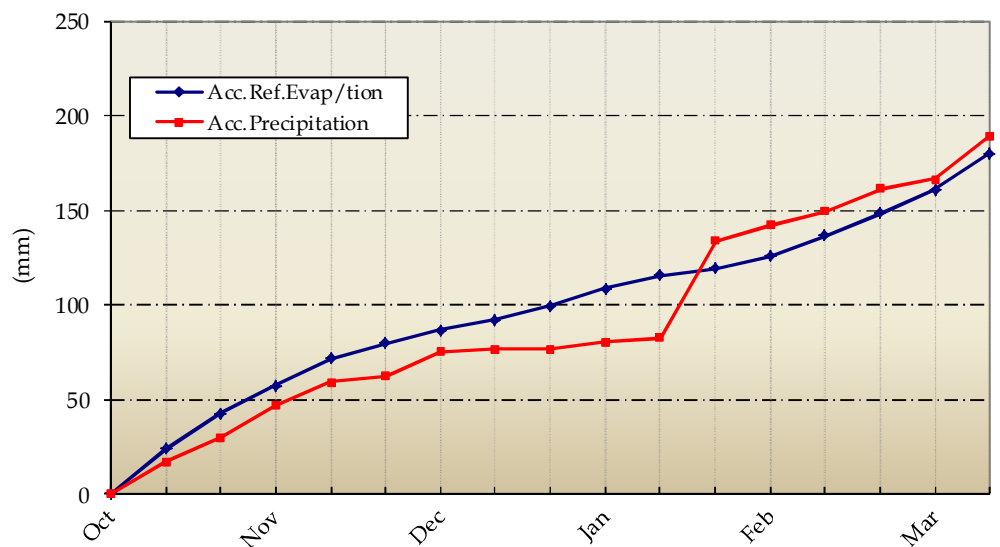


Larisa

1st 10-day period (1-10/03/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.2	18.8	18.4	18.6	19.1	19.0	18.0	14.8	13.2	12.0	17.2	17.8	13.6
	Min	5.4	8.2	1.6	1.8	2.4	4.7	4.4	7.6	8.6	8.4	5.3	4.3	2.4
Relative Humidity	Max	100	81	100	100	100	100	94	100	100	100	98	100	-
	Min	42	20	30	39	46	43	39	66	72	69	47	41	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	12.0	7.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	11.9	8.9
Sunshine Duration		4.1	10.5	9.7	9.5	7.7	4.8	3.4	1.8	0.1	0.0	5.2	5.7	4.9
Precipitation		1.6	0.9						9.1	5.4	6.0	23.0	25.1	10.9
Evaporation		3.7	3.8	3.6	4.1	0.3	4.1	2.7	0.7	0.2	0.0	23.2	31.0	18.9
Growing Degrees	5	7.8	8.5	5.0	5.2	5.8	6.9	6.2	6.2	5.9	5.2	62.6	60.9	34.4
	10	2.8	3.5	0.0	0.2	0.8	1.9	1.2	1.2	0.9	0.2	12.6	11.9	4.1

1st 10-day period (1-10/03/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	19.6	19.6	17.1
Precipitation - Reference Evapotranspiration	3.4	5.5	-6.2
Number of Rainy Days	5.0	5.0	3.2
Number of Dry Days	1.0	5.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

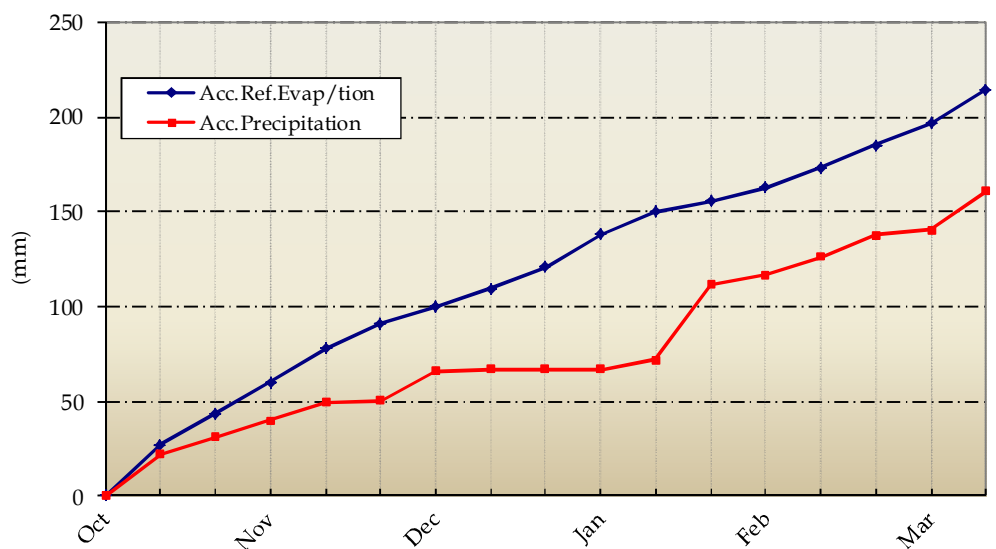


Mikra

1st 10-day period (1-10/03/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.6	15.8	18.2	17.9	15.8	18.2	12.6	15.2	13.2	12.2	15.6	17.0	12.6
	Min	11.1	9.5	3.5	3.4	4.4	4.5	6.5	11.2	10.8	9.6	7.4	7.5	3.4
Relative Humidity	Max	91	74	82	93	94	96	94	90	96	97	91	91	-
	Min	56	38	32	40	65	42	40	58	74	77	52	44	-
Soil Temperature at 10 cm	06 UTC	11.6	10.1	9.0	9.6	9.8	10.2	10.6	11.8	11.2	11.0	10.5	11.7	7.2
	12 UTC	11.6	11.6	12.0	11.8	12.6	11.0	12.2	12.8	11.6	11.6	11.9	13.5	9.8
Sunshine Duration		3.6	10.1	9.8	9.9	8.1	4.2	2.1	0.4	0.0	0.0	4.8	6.6	4.9
Precipitation		1.6	0.3					0.0	1.6	2.4	14.5	20.4	42.9	13.0
Evaporation		2.4	3.7	4.5	2.5	3.8	1.7	1.3	1.9	0.1	0.1	22.0	34.3	22.1
Growing Degrees	5	8.9	7.7	5.9	5.7	5.1	6.4	4.6	8.2	7.0	5.9	65.1	72.3	33.9
	10	3.9	2.7	0.9	0.7	0.1	1.4	0.0	3.2	2.0	0.9	15.6	22.3	4.3

1st 10-day period (1-10/03/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	17.9	22.1	17.6
Precipitation - Reference Evapotranspiration	2.5	20.8	-4.6
Number of Rainy Days	5.0	4.0	3.2
Number of Dry Days	1.0	6.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



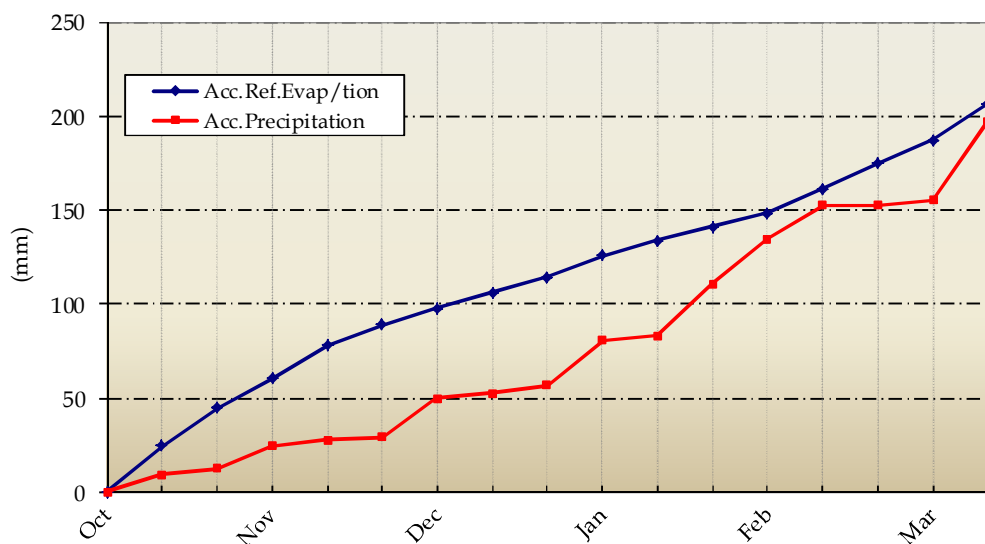


Tanagra

1st 10-day period (1-10/03/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.4	16.3	18.0	18.1	19.3	19.4	17.9	15.6	13.0	11.6	16.9	17.8	13.1
	Min	7.2	4.8	2.2	2.9	3.4	5.8	8.0	10.6	8.2	9.2	6.2	7.6	3.8
Relative Humidity	Max	100	96	95	99	94	97	84	100	100	100	96	91	-
	Min	38	28	30	35	32	35	45	49	81	82	46	43	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		6.0	9.7	9.8	9.6	9.9	8.3	3.2	1.6	0.0	0.0	5.8	6.6	
Precipitation			0.9						4.0	31.7	5.4	42.0	19.0	19.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	28.2	
Growing Degrees	5	8.3	5.6	5.1	5.5	6.4	7.6	8.0	8.1	5.6	5.4	65.5	76.8	
	10	3.3	0.6	0.1	0.5	1.4	2.6	3.0	3.1	0.6	0.4	15.5	26.8	

1st 10-day period (1-10/03/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	19.3	21.4	
Precipitation - Reference Evapotranspiration	22.7	-2.4	19.5
Number of Rainy Days	4.0	5.0	4.7
Number of Dry Days	2.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

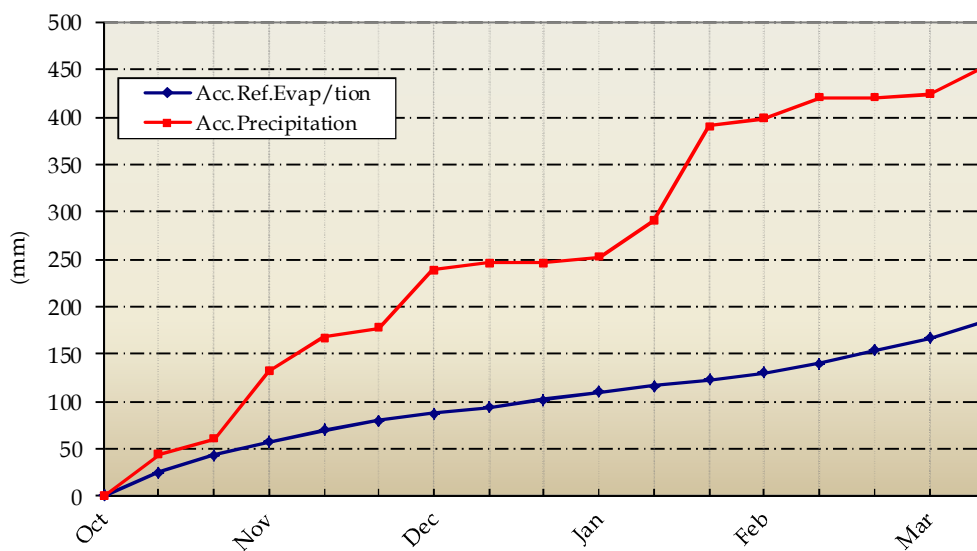


Tripoli

1st 10-day period (1-10/03/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.6	16.9	18.6	18.4	19.1	15.4	14.1	11.6	9.7	12.9	15.1	14.3	11.8
	Min	0.7	3.7	-1.7	-1.0	-1.0	0.2	2.6	3.4	6.2	4.1	1.7	4.0	1.3
Relative Humidity	Max	100	100	100	100	100	100	100	100	100	100	100	96	-
	Min	47	25	21	26	22	51	43	60	72	57	42	44	-
Soil Temperature at 10 cm	06 UTC	7.8	7.8	6.8	7.0	7.2	7.8	8.2	7.8	8.2	7.6	7.6	8.4	6.2
	12 UTC	10.4	10.8	10.9	-	-	10.8	10.2	10.6	8.6	10.6	10.4	12.2	7.4
Sunshine Duration		6.3	9.9	9.7	9.1	8.9	8.5	3.3	2.1	0.4	1.5	6.0	6.6	5.4
Precipitation			1.5					0.0	10.7	12.0	5.0	29.2	32.8	26.7
Evaporation		2.2	2.9	2.8	2.4	2.0	2.2	2.2	0.8	0.3	1.0	18.8	18.8	15.8
Growing Degrees	5	2.7	5.3	3.5	3.7	4.1	2.8	3.4	2.5	3.0	3.5	34.3	41.3	22.7
	10	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	5.3	1.9

1st 10-day period (1-10/03/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	18.1	19.2	17.7
Precipitation - Reference Evapotranspiration	11.1	13.6	9.0
Number of Rainy Days	4.0	4.0	3.4
Number of Dry Days	3.0	8.0	-

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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Papakrivou Anastasia

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