



# AGROMETEOROLOGICAL BULLETIN

*May 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



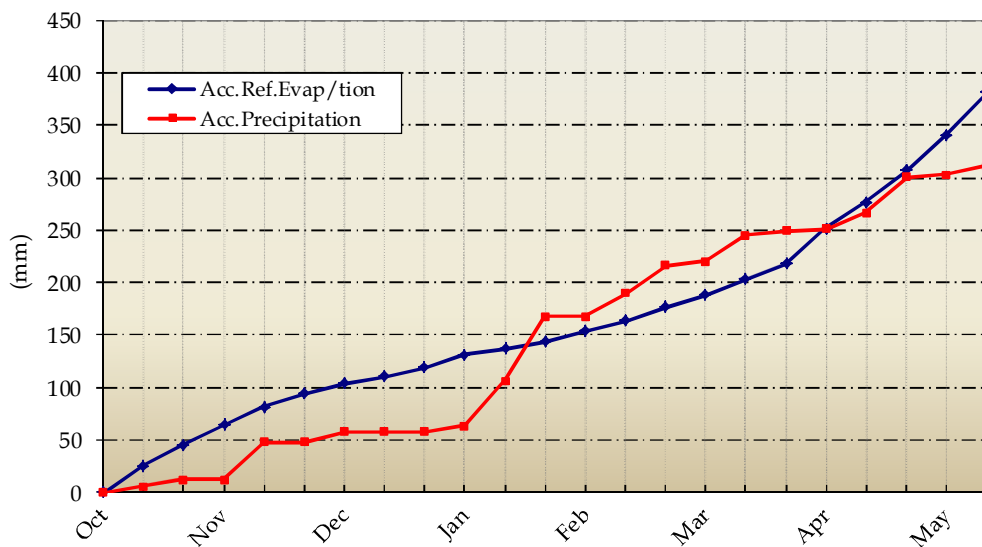
Hellenic National Meteorological Service  
Division of Climatology-Applications  
El. Venizelou Street 14, 16777  
Helliniko, Athens

*Web addresses of HNMS  
[www.hnms.gr](http://www.hnms.gr)  
[www.emy.gov.gr](http://www.emy.gov.gr)  
[www.meteo.gov.gr](http://www.meteo.gov.gr)  
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1st 10-day period (1-10/05/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.0	26.6	27.2	27.2	25.4	21.0	22.8	22.0	24.8	22.0	24.4	20.5	20.6
	Min	11.6	11.0	9.0	9.2	10.2	13.0	8.6	10.4	10.4	12.6	10.6	10.0	9.7
Relative Humidity	Max	81	91	94	87	90	91	95	91	88	93	90	92	-
	Min	30	34	28	32	39	62	40	60	37	51	41	50	-
Soil Temperature at 10 cm	06 UTC	18.6	18.6	18.4	18.8	19.6	20.4	16.6	17.4	18.8	19.2	18.6	15.5	15.1
	12 UTC	25.4	25.6	26.0	26.6	26.8	21.8	23.0	25.6	24.4	23.0	24.8	20.5	19.2
Sunshine Duration		9.9	10.3	12.7	12.5	12.1	4.6	10.7	11.4	9.3	7.1	10.1	7.8	8.0
Precipitation							5.5	0.0	0.2	0.0	2.8	8.5	35.5	9.3
Evaporation		6.3	6.8	8.2	7.1	5.5	2.4	5.0	4.9	4.9	4.2	55.3	43.7	55.4
Growing Degrees	5	13.3	13.8	13.1	13.2	12.8	12.0	10.7	11.2	12.6	12.3	125.0	102.5	101.5
	10	8.3	8.8	8.1	8.2	7.8	7.0	5.7	6.2	7.6	7.3	75.0	52.5	51.6

1st 10-day period (1-10/05/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	40.6	33.8	37.0
Precipitation - Reference Evapotranspiration	-32.1	1.7	-27.7
Number of Rainy Days	3.0	6.0	2.2
Number of Dry Days	11.0	5.0	-

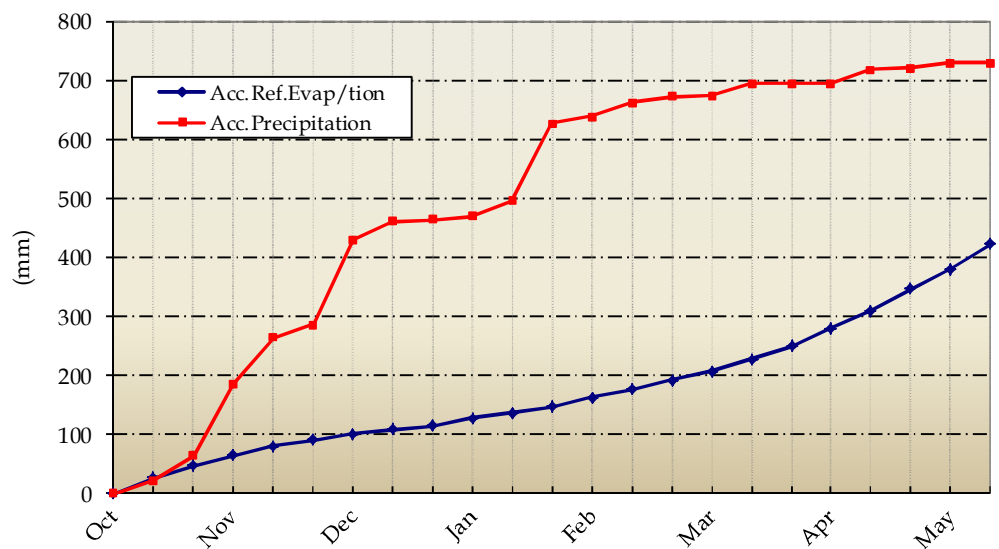
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.6	22.6	23.6	23.0	25.3	24.2	23.8	24.0	22.9	22.8	23.5	22.2	22.2
	Min	11.3	12.5	11.9	11.4	10.4	14.2	12.0	13.8	12.0	12.4	12.2	11.1	11.6
Relative Humidity	Max	90	90	90	91	89	90	84	88	87	88	89	89	-
	Min	48	50	45	33	41	45	39	34	40	50	42	40	-
Soil Temperature at 10 cm	06 UTC	18.5	19.6	18.6	19.6	19.0	21.0	19.2	21.0	20.5	21.0	19.8	-	17.3
	12 UTC	23.0	23.0	23.8	23.2	18.2	23.0	23.8	25.6	24.0	24.0	23.2	-	21.1
Sunshine Duration		10.4	10.7	11.1	11.5	11.9	10.5	10.6	11.1	11.9	11.5	11.1	8.9	8.8
Precipitation									0.1			0.1	27.4	8.6
Evaporation		3.0	4.0	2.6	3.4	4.0	3.0	5.1	8.0	5.0	2.5	40.6	39.5	49.3
Growing Degrees	5	12.0	12.6	12.8	12.2	12.9	14.2	12.9	13.9	12.5	12.6	128.4	116.6	119.0
	10	7.0	7.6	7.8	7.2	7.9	9.2	7.9	8.9	7.5	7.6	78.4	66.6	69.0

1st 10-day period (1-10/05/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	42.1	36.7	35.8
Precipitation - Reference Evapotranspiration	-42.0	-9.3	-27.2
Number of Rainy Days	1.0	3.0	2.0
Number of Dry Days	15.0	6.0	-

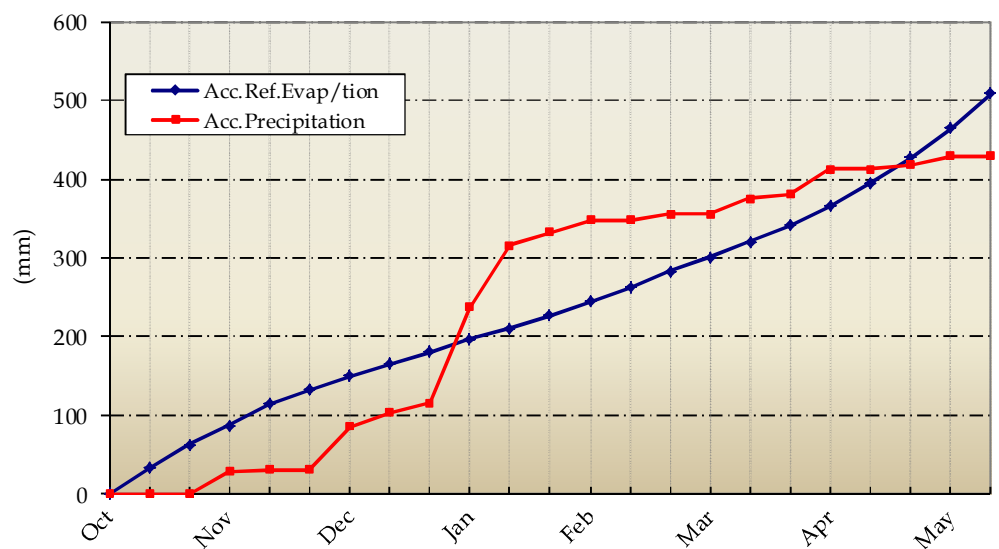
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2017)		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	22.0	21.6	22.2	23.0	26.0	28.0	27.0	23.8	22.0	23.7	21.8	22.0
	Min	17.4	14.8	13.0	13.2	13.2	18.4	16.8	19.4	19.6	13.8	16.0	14.4	14.0
Relative Humidity	Max	95	93	88	93	88	85	85	85	87	85	88	85	-
	Min	71	57	63	61	60	56	44	36	43	65	56	53	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.4	11.3	11.8	11.5	12.2	10.6	11.9	1.5	12.1	12.9	10.4	9.0	9.1
Precipitation													1.6	5.2
Evaporation		0.9	3.5	2.9	5.3	3.6	7.2	3.3	2.8	4.6	6.4	40.5	41.3	59.2
Growing Degrees	5	14.2	13.4	12.3	12.7	13.1	17.2	17.4	18.2	16.7	12.9	148.1	131.0	130.2
	10	9.2	8.4	7.3	7.7	8.1	12.2	12.4	13.2	11.7	7.9	98.1	81.0	80.2

1st 10-day period (1-10/05/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	44.4	41.1	-
Precipitation - Reference Evapotranspiration	-44.4	-39.5	5.2
Number of Rainy Days	0.0	1.0	1.4
Number of Dry Days	18.0	23.0	-

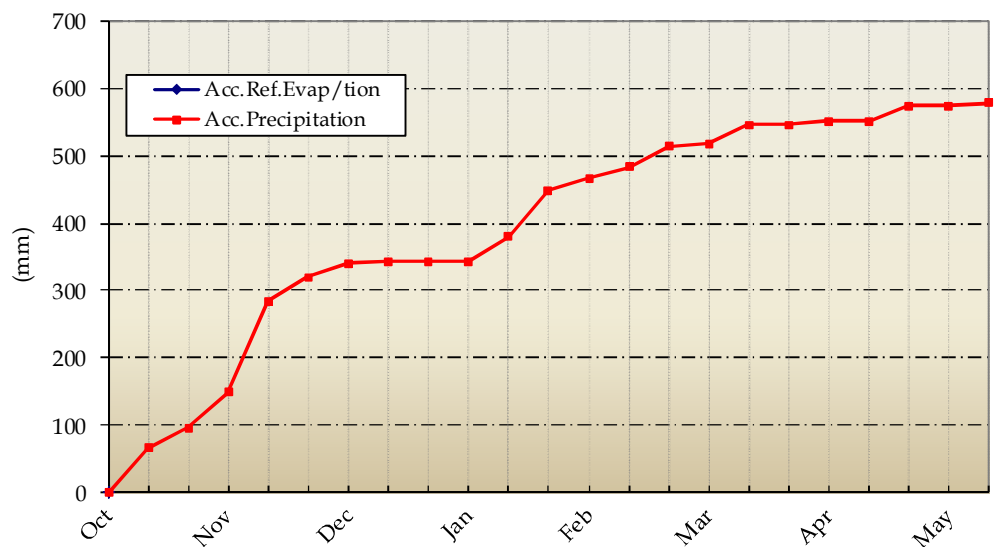
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.8	26.6	-	24.6	24.3	24.0	23.2	22.8	18.6	21.6	23.5	20.1	21.2
	Min	8.4	9.0	10.2	7.2	7.1	8.2	9.4	9.1	13.0	10.0	9.2	6.9	8.6
Relative Humidity	Max	89	100	100	100	100	100	100	94	100	100	98	98	-
	Min	37	36	32	34	25	32	36	38	56	37	36	43	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	13.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	17.5
Sunshine Duration		9.1	10.0	-	-	-	-	-	9.7	4.7	-	8.4	6.1	6.7
Precipitation		2.0	2.1	0.0				0.0		0.1	0.0	4.2	59.5	22.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	36.0
Growing Degrees	5	12.1	12.8	-	10.9	10.7	11.1	11.3	11.0	10.8	10.8	-	84.8	99.4
	10	7.1	7.8	-	5.9	5.7	6.1	6.3	6.0	5.8	5.8	-	34.8	49.6

1st 10-day period (1-10/05/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	33.0
Precipitation - Reference Evapotranspiration	-	-	-10.8
Number of Rainy Days	3.0	6.0	3.9
Number of Dry Days	1.0	1.0	-

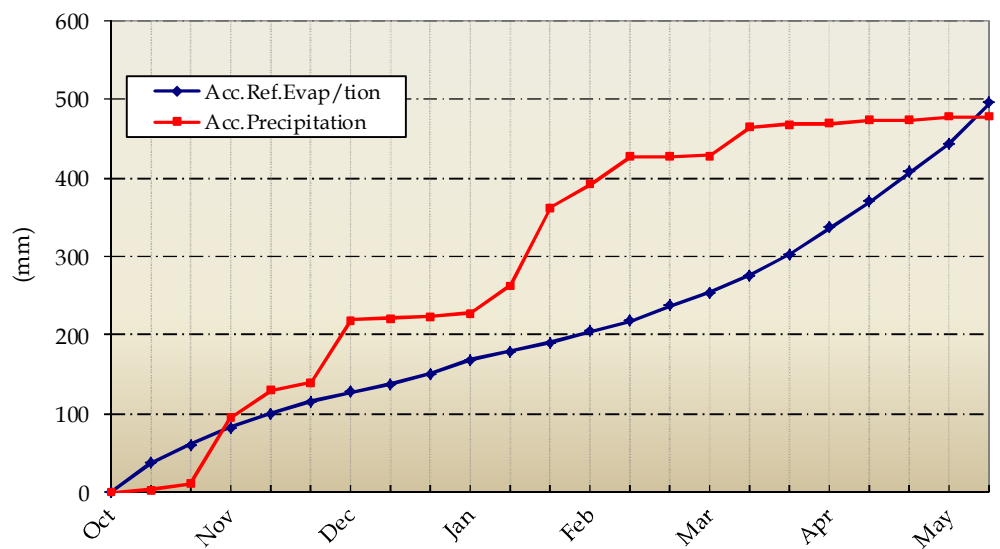
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.9	22.9	24.9	26.2	28.4	27.5	25.7	29.2	25.1	26.0	26.0	22.0	22.8
	Min	10.8	10.9	11.7	11.0	12.5	11.7	11.4	13.8	11.4	11.1	11.6	10.0	11.0
Relative Humidity	Max	92	90	91	89	76	87	89	90	87	90	88	91	-
	Min	40	52	48	31	28	25	28	15	28	25	32	44	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	17.1	16.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	17.5	20.6
Sunshine Duration		10.5	10.3	11.6	11.8	10.8	11.3	11.4	9.8	11.9	12.0	11.1	6.8	8.6
Precipitation													26.3	9.1
Evaporation		6.5	5.0	5.9	7.2	7.8	3.8	8.4	6.6	6.4	6.6	64.2	40.2	52.2
Growing Degrees	5	12.4	11.9	13.3	13.6	15.5	14.6	13.6	16.5	13.3	13.6	138.1	110.3	119.0
	10	7.4	6.9	8.3	8.6	10.5	9.6	8.6	11.5	8.3	8.6	88.1	60.3	69.0

1st 10-day period (1-10/05/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	51.0	35.4	36.5
Precipitation - Reference Evapotranspiration	-51.0	-9.1	-27.4
Number of Rainy Days	0.0	5.0	2.3
Number of Dry Days	18.0	20.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

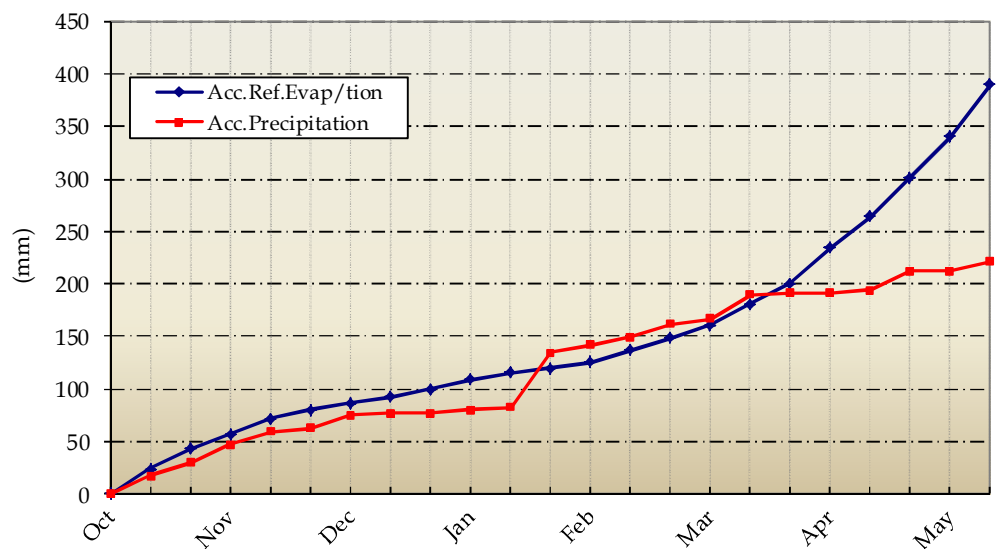




1st 10-day period (1-10/05/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.6	27.6	27.8	28.2	29.6	28.4	29.6	27.9	25.3	25.4	27.5	22.9	23.7
	Min	11.0	8.8	7.8	8.6	8.4	14.4	10.0	12.2	10.5	13.8	10.6	8.8	9.3
Relative Humidity	Max	100	97	90	92	100	70	86	73	100	100	91	100	-
	Min	22	17	21	23	13	15	11	19	29	26	20	36	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	17.3	16.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	17.8	18.4
Sunshine Duration		9.7	11.1	10.7	9.5	11.7	10.5	11.8	11.4	7.5	9.1	10.3	7.4	8.0
Precipitation										8.1	1.0	9.1	23.2	10.2
Evaporation		7.0	7.4	6.8	6.5	6.0	11.0	14.7	10.5	2.3	6.9	79.1	60.7	50.6
Growing Degrees	5	13.3	13.2	12.8	13.4	14.0	16.4	14.8	15.1	12.9	14.6	140.5	108.7	115.4
	10	8.3	8.2	7.8	8.4	9.0	11.4	9.8	10.1	7.9	9.6	90.5	58.7	65.4

1st 10-day period (1-10/05/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	49.1	36.2	38.0
Precipitation - Reference Evapotranspiration	-40.0	-13.0	-27.8
Number of Rainy Days	2.0	5.0	2.5
Number of Dry Days	20.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

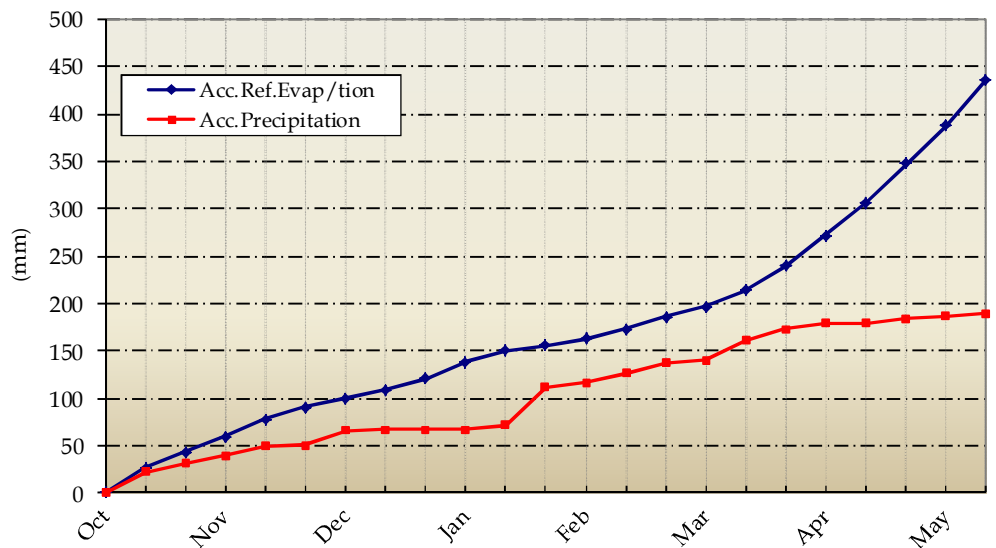


Mikra

1st 10-day period (1-10/05/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.6	26.6	27.6	27.8	27.5	25.1	27.3	26.2	22.0	24.6	25.9	21.9	22.7
	Min	11.6	11.5	11.4	11.4	12.0	10.8	12.4	12.2	15.3	15.9	12.4	11.6	10.7
Relative Humidity	Max	97	80	77	72	78	86	72	75	67	93	80	84	-
	Min	32	23	22	24	26	26	25	24	40	29	27	39	-
Soil Temperature at 10 cm	06 UTC	15.2	18.0	18.8	19.4	20.2	20.2	21.0	21.2	22.4	21.2	19.8	17.3	16.9
	12 UTC	21.5	22.6	23.8	24.4	25.5	25.4	26.2	26.2	24.0	24.6	24.4	21.9	21.5
Sunshine Duration		8.2	11.9	12.0	11.4	11.8	12.2	10.7	12.0	9.6	7.3	10.7	9.0	7.9
Precipitation		0.0									2.6	2.6	22.1	12.9
Evaporation		2.6	9.7	8.3	6.6	7.4	10.6	8.8	8.6	7.6	7.9	78.1	55.4	53.6
Growing Degrees	5	13.1	14.1	14.5	14.6	14.8	13.0	14.9	14.2	13.7	15.3	141.9	117.3	116.7
	10	8.1	9.1	9.5	9.6	9.8	8.0	9.9	9.2	8.7	10.3	91.9	67.3	66.7

1st 10-day period (1-10/05/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	48.9	42.8	38.0
Precipitation - Reference Evapotranspiration	-46.3	-20.7	-25.1
Number of Rainy Days	1.0	2.0	2.6
Number of Dry Days	9.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

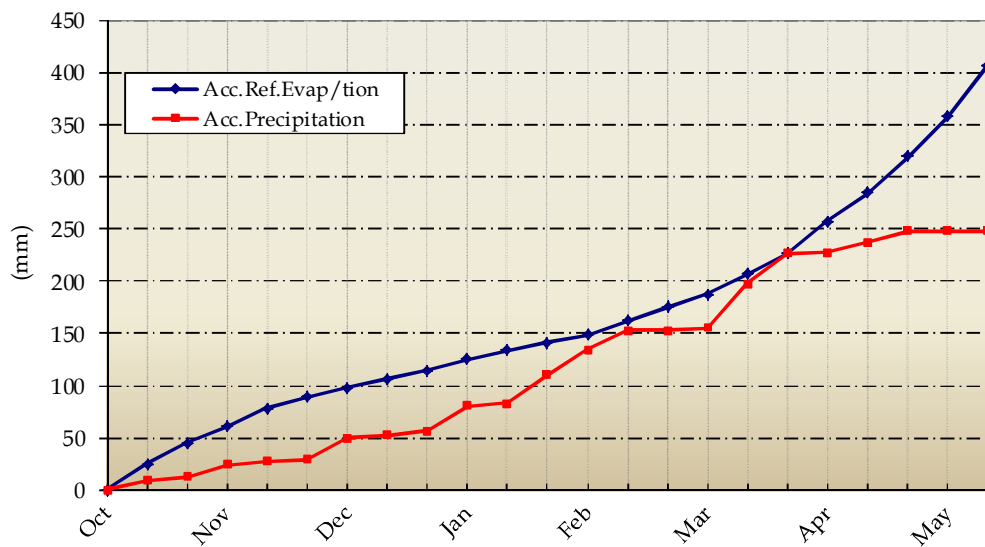




1st 10-day period (1-10/05/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.3	26.4	26.9	27.2	29.0	27.0	28.6	28.5	26.3	24.3	26.8	22.1	22.9
	Min	13.9	10.6	10.3	9.6	12.8	15.3	11.4	14.0	10.6	12.5	12.1	9.2	9.6
Relative Humidity	Max	73	67	71	75	75	71	72	78	81	82	74	86	-
	Min	23	19	23	27	17	27	12	13	24	30	22	33	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		9.3	12.0	11.9	10.8	12.1	12.3	11.0	9.8	12.6	11.1	11.3	8.8	
Precipitation		0.1										0.1	2.3	8.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	58.3	
Growing Degrees	5	14.1	13.5	13.6	13.4	15.9	16.2	15.0	16.3	13.5	13.4	144.8	106.1	
	10	9.1	8.5	8.6	8.4	10.9	11.2	10.0	11.3	8.5	8.4	94.8	56.1	

1st 10-day period (1-10/05/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	49.2	37.6	
Precipitation - Reference Evapotranspiration	-49.1	-35.3	8.5
Number of Rainy Days	1.0	3.0	2.7
Number of Dry Days	13.0	21.0	-

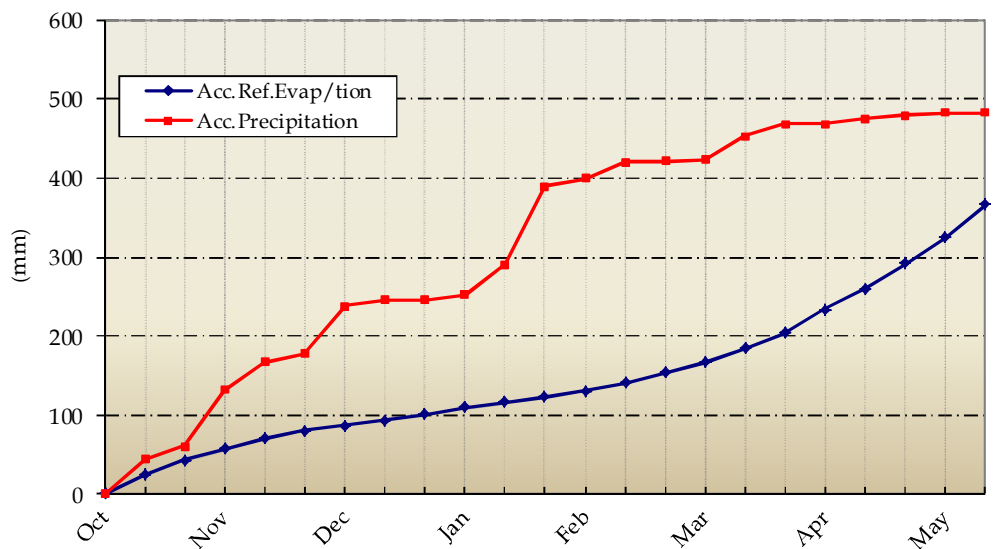
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.2	24.4	26.4	25.7	24.5	25.9	24.9	24.2	20.2	22.3	24.5	18.9	21.0
	Min	6.3	6.0	7.0	8.0	5.3	10.7	8.5	7.4	2.8	6.4	6.8	5.1	7.0
Relative Humidity	Max	90	100	100	100	91	76	78	83	84	100	90	100	-
	Min	21	22	21	17	23	13	17	13	30	32	21	42	-
Soil Temperature at 10 cm	06 UTC	-	17.0	17.6	17.8	17.8	-	-	18.6	16.8	17.6	17.6	15.0	14.6
	12 UTC	-	24.2	24.6	24.0	23.0	-	-	23.8	22.2	-	23.6	19.1	17.1
Sunshine Duration		10.8	10.9	8.0	11.2	11.3	12.6	0.0	12.4	12.2	10.5	10.0	6.1	8.1
Precipitation								0.0				0.0	21.4	10.2
Evaporation		-	6.0	4.3	6.8	-	-	-	8.2	6.0	4.4	-	-	39.1
Growing Degrees	5	11.3	10.2	11.7	11.9	9.9	13.3	11.7	10.8	6.5	9.4	106.6	70.1	89.7
	10	6.3	5.2	6.7	6.9	4.9	8.3	6.7	5.8	1.5	4.4	56.6	20.7	40.9

1st 10-day period (1-10/05/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	41.1	29.4	36.7
Precipitation - Reference Evapotranspiration	-41.1	-8.0	-26.5
Number of Rainy Days	0.0	7.0	2.8
Number of Dry Days	18.0	21.0	-

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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Issue Editors :

Papakrivou Anastasia

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