



# AGROMETEOROLOGICAL BULLETIN

*September 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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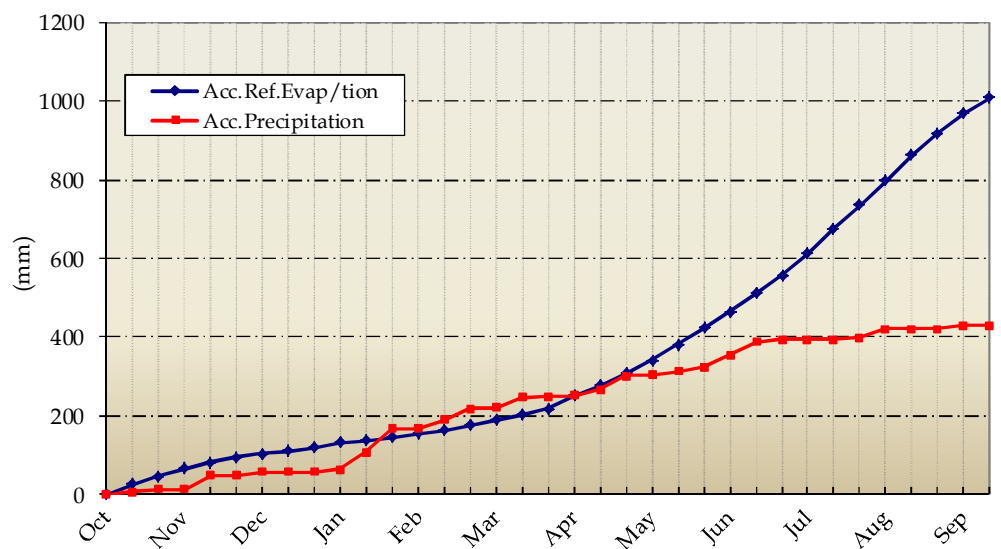
*Web addresses of HNMS*  
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[www.meteo.gov.gr](http://www.meteo.gov.gr)  
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Alexandroupoli

1st 10-day period (1-10/09/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.4	29.8	30.0	29.8	28.4	25.8	27.6	28.6	28.6	29.2	28.5	30.4	27.3
	Min	12.0	13.8	14.8	16.4	19.2	10.4	13.4	12.6	12.0	16.0	14.1	19.6	15.0
Relative Humidity	Max	95	87	80	83	70	88	84	84	93	94	86	75	-
	Min	45	31	36	33	33	32	51	37	38	55	39	30	-
Soil Temperature at 10 cm	06 UTC	22.8	23.0	23.4	24.0	24.2	22.6	22.6	22.6	23.0	23.8	23.2	25.8	21.2
	12 UTC	26.0	26.6	26.8	27.2	27.0	25.6	26.2	26.4	26.6	26.8	26.5	30.2	24.9
Sunshine Duration		11.8	11.8	11.7	11.2	8.6	11.5	11.5	11.3	10.8	10.4	11.1	8.9	8.8
Precipitation														6.6
Evaporation		6.5	5.4	6.7	7.5	15.1	4.2	1.7	10.0	7.6	3.4	68.1	82.2	73.7
Growing Degrees	5	14.7	16.8	17.4	18.1	18.8	13.1	15.5	15.6	15.3	17.6	162.9	199.9	161.8
	10	9.7	11.8	12.4	13.1	13.8	8.1	10.5	10.6	10.3	12.6	112.9	149.9	111.8

1st 10-day period (1-10/09/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	38.9	48.6	42.4
Precipitation - Reference Evapotranspiration	-38.9	-48.6	-35.8
Number of Rainy Days	0.0	0.0	1.1
Number of Dry Days	19.0	68.0	-

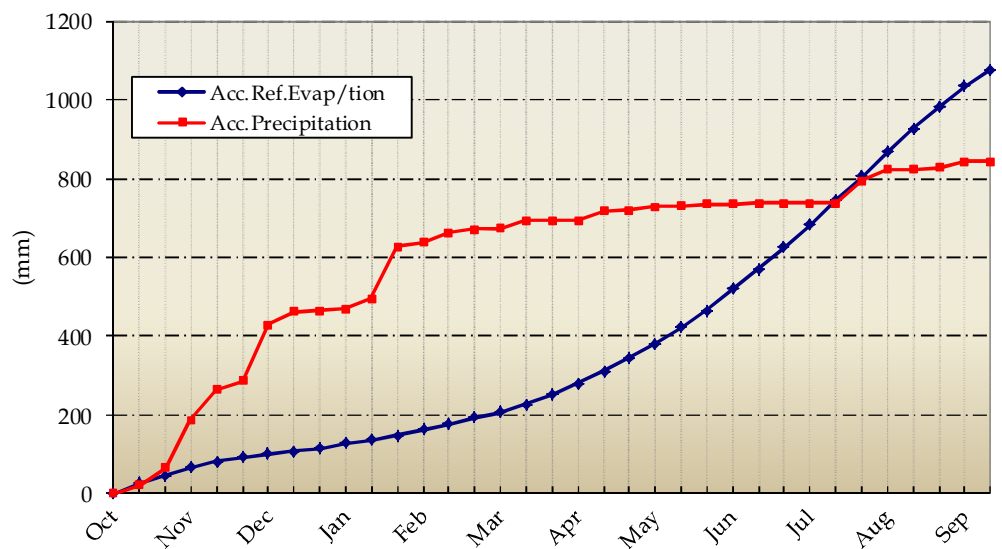
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/09/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.0	30.3	30.3	28.4	27.2	28.0	28.7	28.9	29.4	30.0	29.0	28.9	28.8
	Min	17.8	19.6	20.3	19.0	16.8	17.0	16.3	18.9	20.6	18.9	18.5	18.9	17.3
Relative Humidity	Max	89	89	87	86	83	78	84	86	89	88	86	87	-
	Min	43	43	53	38	35	19	31	47	49	48	41	45	-
Soil Temperature at 10 cm	06 UTC	25.0	25.8	26.4	26.0	25.6	25.5	25.2	25.0	26.5	26.0	25.7	-	24.8
	12 UTC	27.5	28.0	28.8	31.6	31.0	27.5	27.8	28.0	27.0	28.5	28.6	-	28.9
Sunshine Duration		11.0	10.7	9.7	11.6	11.4	11.7	11.3	9.2	7.5	9.3	10.3	7.6	9.7
Precipitation													80.1	5.8
Evaporation		4.0	6.0	6.0	8.0	3.0	14.0	4.0	2.0	5.0	4.0	56.0	55.8	62.5
Growing Degrees	5	18.4	20.0	20.3	18.7	17.0	17.5	17.5	18.9	20.0	19.5	187.7	189.3	180.3
	10	13.4	15.0	15.3	13.7	12.0	12.5	12.5	13.9	15.0	14.5	137.7	139.3	130.3

1st 10-day period (1-10/09/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	42.7	37.7	40.4
Precipitation - Reference Evapotranspiration	-42.7	42.4	-34.6
Number of Rainy Days	0.0	3.0	1.2
Number of Dry Days	11.0	22.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

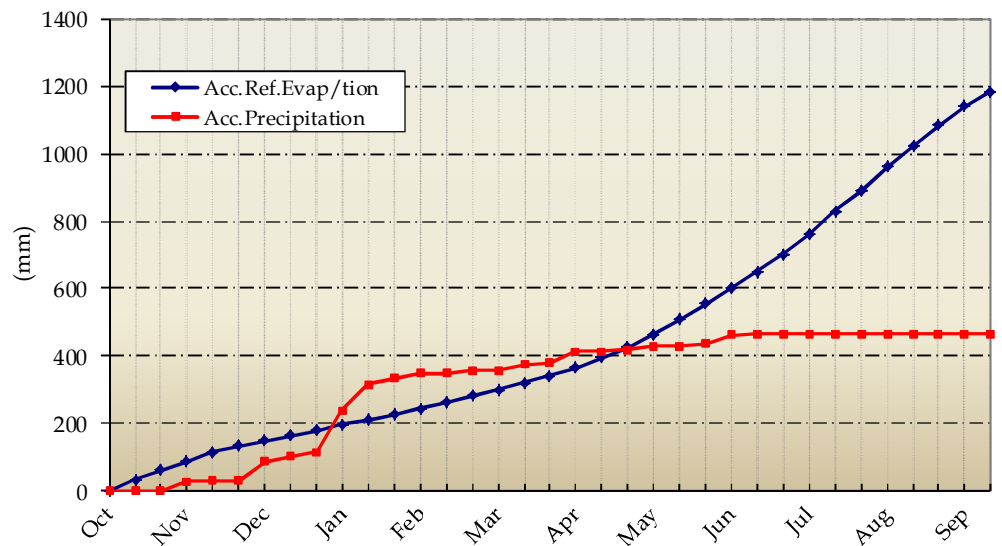


Iraklio

1st 10-day period (1-10/09/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.8	29.0	32.2	29.0	28.4	26.4	27.0	28.0	28.4	28.8	28.4	29.4	27.0
	Min	20.2	19.0	20.6	22.4	18.8	20.6	17.4	17.6	20.0	22.8	19.9	22.6	20.4
Relative Humidity	Max	72	85	85	90	94	79	83	74	85	85	83	87	-
	Min	50	50	37	48	56	55	54	35	45	53	48	60	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.9	10.6	10.5	10.1	10.1	10.1	10.1	9.2	8.7	9.2	10.0	9.9	9.9
Precipitation														1.6
Evaporation		5.7	6.4	5.0	1.8	6.7	5.4	6.6	6.9	2.3	2.9	49.7	66.2	74.3
Growing Degrees	5	18.5	19.0	21.4	20.7	18.6	18.5	17.2	17.8	19.2	20.8	191.7	209.9	187.3
	10	13.5	14.0	16.4	15.7	13.6	13.5	12.2	12.8	14.2	15.8	141.7	159.9	137.3

1st 10-day period (1-10/09/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	45.0	47.5	-
Precipitation - Reference Evapotranspiration	-45.0	-47.5	1.6
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	54.0	94.0	-

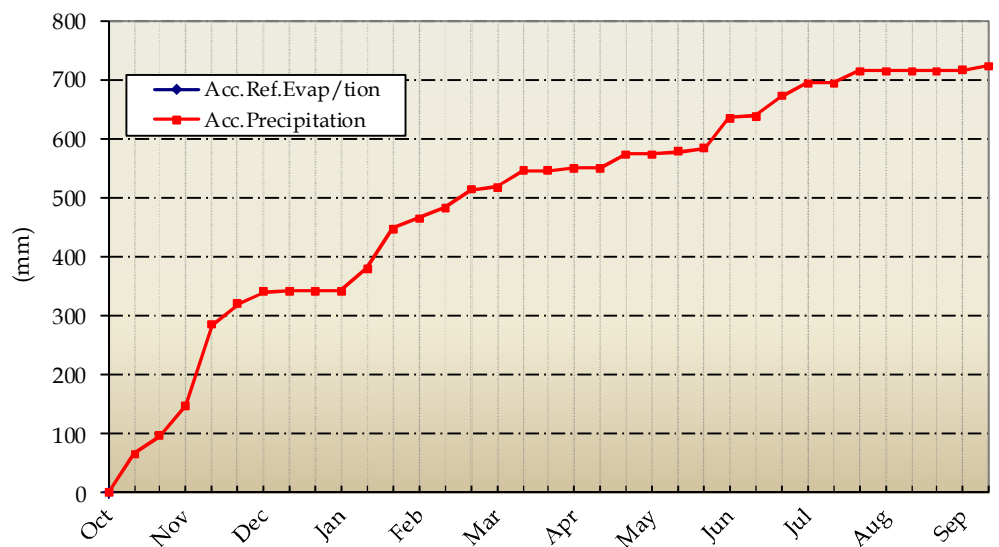
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/09/2017)		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	34.4	29.4	27.0	25.8	28.0	29.2	28.0	25.6	28.4	28.8	26.8	27.0
	Min	12.8	14.6	17.6	12.0	9.2	9.2	8.8	11.4	16.8	11.2	12.4	14.3	13.0
Relative Humidity	Max	100	100	68	98	83	98	87	100	100	100	93	100	-
	Min	28	23	47	25	19	23	30	45	44	46	33	51	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	19.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.8
Sunshine Duration		9.9	9.2	8.5	10.1	6.9	10.2	10.2	6.1	3.5	6.8	8.1	4.9	7.5
Precipitation				0.0					4.3	3.6		7.9	121.9	16.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	44.5
Growing Degrees	5	17.4	19.5	18.5	14.5	12.5	13.6	14.0	14.7	16.2	14.8	155.7	155.9	150.0
	10	12.4	14.5	13.5	9.5	7.5	8.6	9.0	9.7	11.2	9.8	105.7	105.9	100.0

1st 10-day period (1-10/09/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	33.0
Precipitation - Reference Evapotranspiration	-	-	-16.6
Number of Rainy Days	2.0	6.0	2.1
Number of Dry Days	16.0	0.0	-

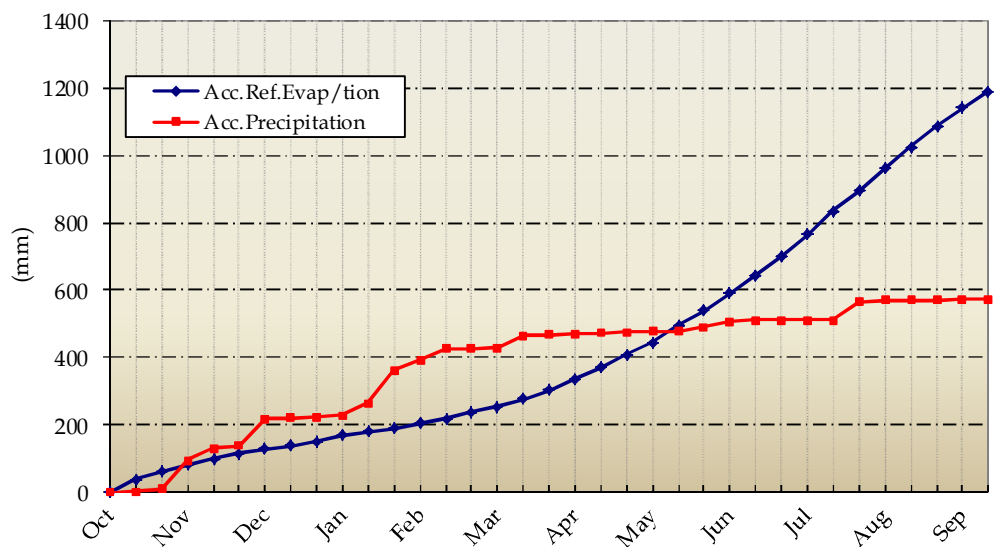
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/09/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.9	31.1	33.8	32.0	31.2	28.8	29.7	32.1	28.8	29.0	30.6	29.8	29.3
	Min	16.0	18.0	18.4	17.2	18.4	16.7	14.4	16.2	19.8	18.3	17.3	18.4	16.6
Relative Humidity	Max	89	88	86	88	66	68	81	83	88	90	83	87	-
	Min	40	34	34	29	15	31	25	34	56	58	36	40	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	24.3	23.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	26.0	27.2
Sunshine Duration		11.4	11.8	10.9	11.1	11.6	11.6	11.6	11.1	8.9	8.6	10.9	6.5	9.3
Precipitation													143.1	7.7
Evaporation		12.4	9.0	7.0	7.2	6.0	7.2	4.8	6.4	9.6	4.8	74.4	-	67.1
Growing Degrees	5	18.0	19.6	21.1	19.6	19.8	17.8	17.1	19.2	19.3	18.7	189.9	190.7	179.8
	10	13.0	14.6	16.1	14.6	14.8	12.8	12.1	14.2	14.3	13.7	139.9	140.7	129.8

1st 10-day period (1-10/09/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	50.1	40.4	43.1
Precipitation - Reference Evapotranspiration	-50.1	102.7	-35.4
Number of Rainy Days	0.0	4.0	1.1
Number of Dry Days	11.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

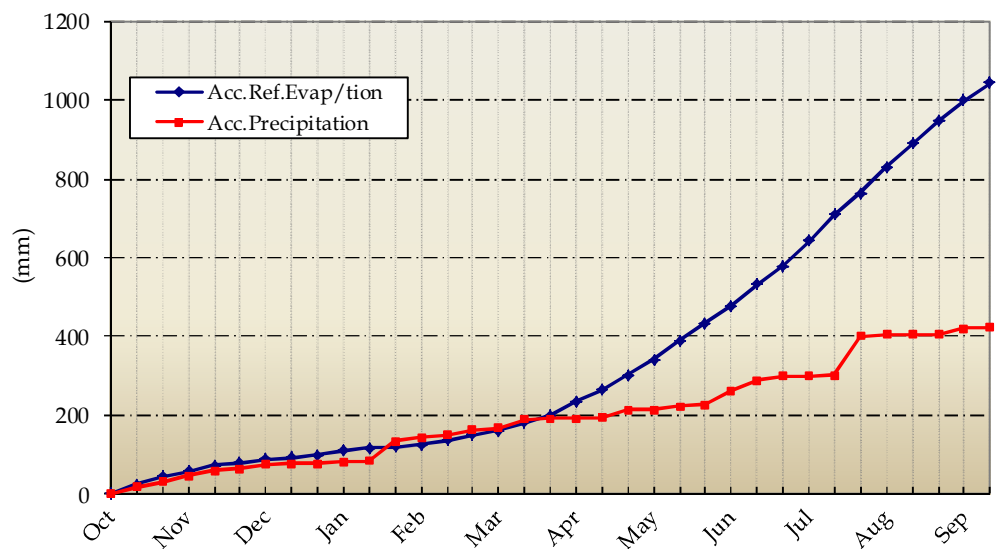


Larisa

1st 10-day period (1-10/09/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.5	32.9	35.0	31.4	28.4	29.3	30.8	31.8	28.8	33.4	31.3	29.2	29.4
	Min	13.7	17.0	17.6	20.2	13.3	12.0	12.0	14.7	19.9	16.3	15.7	18.4	14.9
Relative Humidity	Max	94	92	94	68	91	98	88	86	84	91	89	93	-
	Min	36	32	18	19	34	23	26	26	42	26	28	41	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	26.3	23.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	26.0	25.4
Sunshine Duration		10.9	11.5	10.6	11.5	7.5	10.5	10.8	10.5	1.7	9.0	9.4	5.9	8.7
Precipitation							1.0			0.0		1.0	101.7	5.6
Evaporation		6.4	6.6	3.5	8.0	6.7	6.3	8.0	10.1	15.4	4.9	75.9	64.8	63.7
Growing Degrees	5	17.6	20.0	21.3	20.8	15.9	15.7	16.4	18.3	19.4	19.9	185.0	187.8	171.4
	10	12.6	15.0	16.3	15.8	10.9	10.7	11.4	13.3	14.4	14.9	135.0	137.8	121.4

1st 10-day period (1-10/09/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	44.9	36.5	42.5
Precipitation - Reference Evapotranspiration	-43.9	65.2	-36.9
Number of Rainy Days	1.0	5.0	1.4
Number of Dry Days	6.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

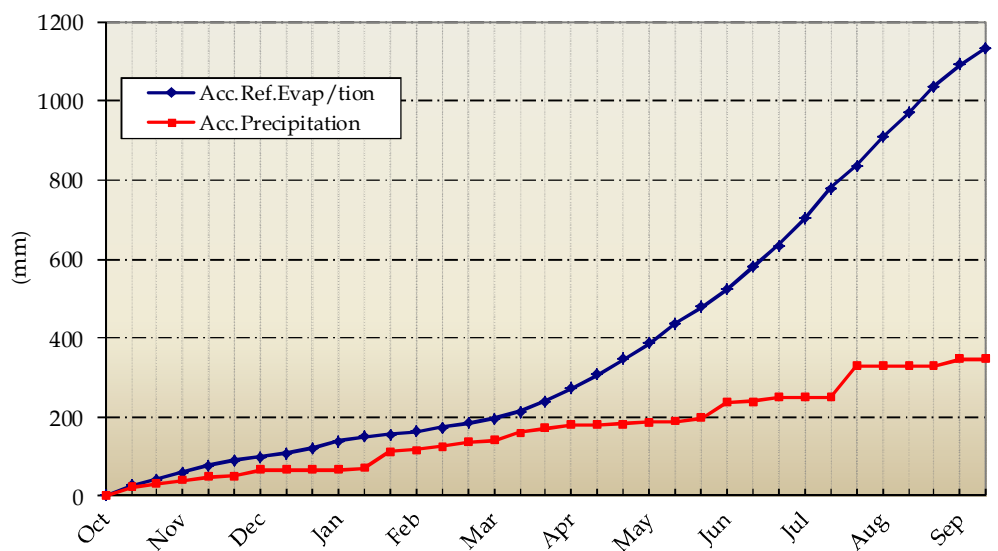


Mikra

1st 10-day period (1-10/09/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.4	30.0	31.6	29.0	27.0	28.0	29.7	29.5	28.3	28.8	29.1	28.5	28.1
	Min	16.2	17.6	18.0	22.6	16.4	12.6	14.8	14.8	18.8	16.5	16.8	18.7	16.4
Relative Humidity	Max	81	88	88	47	68	85	71	68	89	92	78	86	-
	Min	40	38	31	24	34	23	26	32	37	17	30	47	-
Soil Temperature at 10 cm	06 UTC	23.2	23.8	24.4	24.1	23.4	22.4	22.5	23.0	24.2	23.6	23.5	24.8	22.6
	12 UTC	27.4	26.2	26.6	25.6	25.2	29.2	25.0	25.2	24.6	23.4	25.8	26.9	26.5
Sunshine Duration		10.4	9.9	11.0	11.2	6.6	11.3	11.3	11.2	4.3	9.8	9.7	4.5	8.4
Precipitation										0.0		0.0	73.1	7.2
Evaporation		7.6	4.8	9.4	5.7	4.1	7.8	7.9	3.8	8.0	6.0	65.1	44.7	68.9
Growing Degrees	5	17.8	18.8	19.8	20.8	16.7	15.3	17.3	17.2	18.6	17.7	179.8	186.0	172.3
	10	12.8	13.8	14.8	15.8	11.7	10.3	12.3	12.2	13.6	12.7	129.8	136.0	122.3

1st 10-day period (1-10/09/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	42.7	35.5	42.4
Precipitation - Reference Evapotranspiration	-42.7	37.6	-35.2
Number of Rainy Days	0.0	6.0	1.4
Number of Dry Days	11.0	23.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



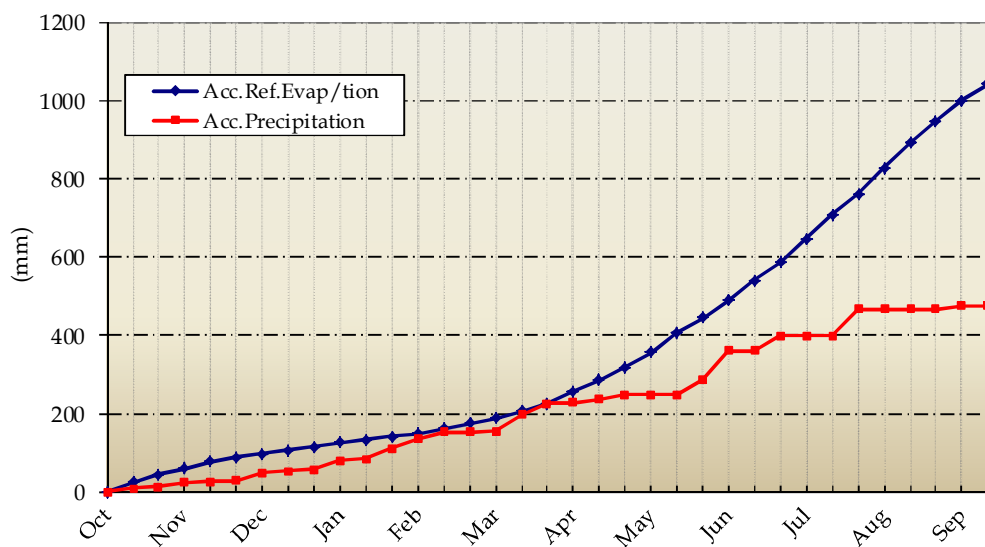


Tanagra

1st 10-day period (1-10/09/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.6	32.6	36.6	30.8	28.6	27.6	30.1	31.2	32.9	31.0	31.2	29.2	28.9
	Min	12.5	16.2	18.8	18.0	16.9	16.3	14.2	16.8	18.6	17.4	16.6	18.9	16.1
Relative Humidity	Max	74	83	73	64	98	95	83	78	80	100	83	81	-
	Min	25	27	15	14	31	19	20	24	25	35	24	32	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.7	11.4	10.8	11.4	10.4	11.0	11.4	11.3	7.8	10.5	10.8	8.1	
Precipitation						0.0						0.0	4.9	8.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	16.6	19.4	22.7	19.4	17.8	17.0	17.2	19.0	20.8	19.2	188.9	190.5	
	10	11.6	14.4	17.7	14.4	12.8	12.0	12.2	14.0	15.8	14.2	138.9	140.5	

1st 10-day period (1-10/09/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	43.0	39.9	
Precipitation - Reference Evapotranspiration	-43.0	-35.0	8.1
Number of Rainy Days	0.0	2.0	1.4
Number of Dry Days	20.0	69.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

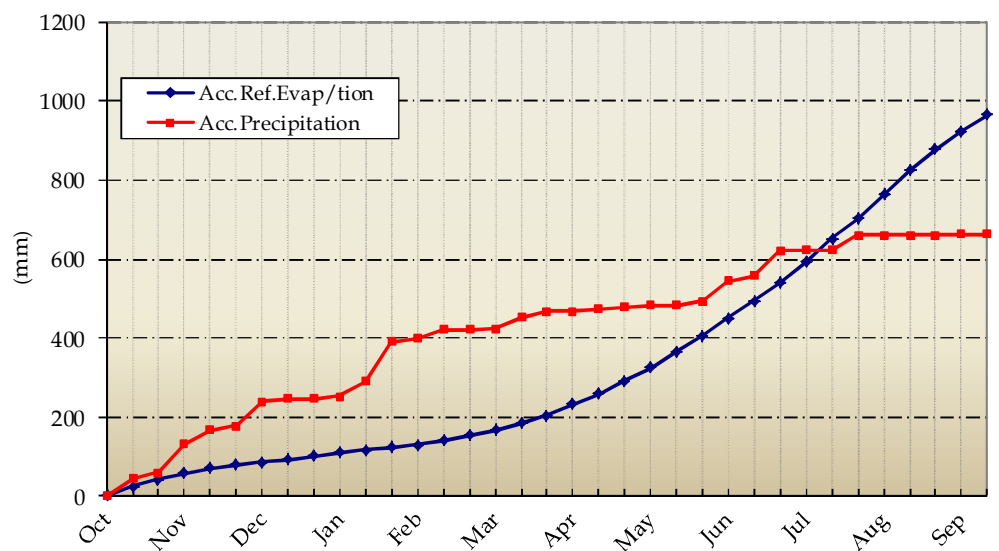


Tripoli

1st 10-day period (1-10/09/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.0	32.6	31.7	29.2	29.5	27.9	28.7	30.4	30.1	30.3	30.1	26.8	27.4
	Min	9.3	12.5	14.1	12.6	9.1	8.1	9.1	9.9	14.9	12.4	11.2	13.7	12.2
Relative Humidity	Max	92	95	90	88	92	80	88	93	84	98	90	98	-
	Min	19	21	21	23	17	23	20	23	23	30	22	39	-
Soil Temperature at 10 cm	06 UTC	23.0	24.4	25.4	25.2	24.2	23.4	23.6	23.8	23.8	-	24.1	21.2	21.7
	12 UTC	27.4	-	-	28.8	28.2	27.4	27.6	27.4	-	-	27.8	24.9	24.2
Sunshine Duration		11.4	10.3	10.9	11.5	10.9	11.4	11.4	11.2	8.7	10.1	10.8	6.8	9.3
Precipitation													50.9	5.8
Evaporation		5.4	6.0	7.6	6.8	7.0	5.2	4.8	5.0	-	-	-	-	47.2
Growing Degrees	5	15.2	17.6	17.9	15.9	14.3	13.0	13.9	15.2	17.5	16.4	156.7	152.3	148.0
	10	10.2	12.6	12.9	10.9	9.3	8.0	8.9	10.2	12.5	11.4	106.7	102.3	98.0

1st 10-day period (1-10/09/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	40.9	32.4	39.2
Precipitation - Reference Evapotranspiration	-40.9	18.5	-33.4
Number of Rainy Days	0.0	5.0	1.6
Number of Dry Days	11.0	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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