



# AGROMETEOROLOGICAL BULLETIN

*August 2017*  
*2nd 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



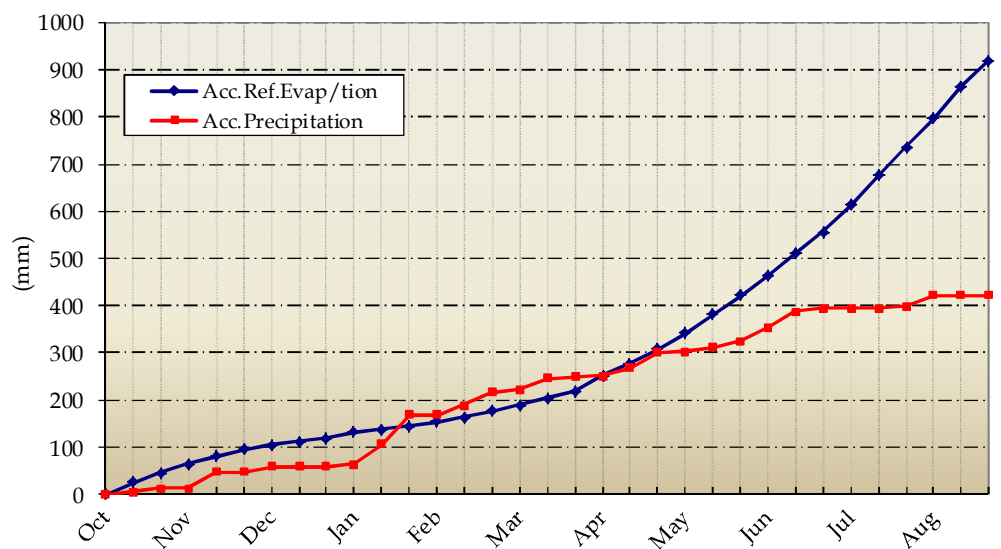
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2nd 10-day period (11-20/08/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.6	35.2	34.4	31.2	29.4	33.2	35.4	35.8	36.2	34.8	34.0	32.4	30.5
	Min	20.2	17.8	18.2	17.8	20.4	23.6	25.0	17.0	16.4	17.0	19.3	18.9	17.7
Relative Humidity	Max	85	84	92	88	77	56	69	85	64	82	78	75	-
	Min	38	33	30	44	55	35	20	24	22	32	33	37	-
Soil Temperature at 10 cm	06 UTC	-	25.0	25.0	22.8	23.6	23.6	23.6	23.8	21.8	21.8	23.4	27.4	23.8
	12 UTC	-	32.8	28.0	29.8	26.4	28.0	29.8	30.2	31.0	31.0	29.7	33.1	27.9
Sunshine Duration		12.6	12.5	8.4	8.8	10.5	12.1	12.5	12.3	12.4	12.5	11.5	12.0	10.0
Precipitation														3.9
Evaporation		10.4	12.4	5.8	9.0	9.0	10.4	12.1	10.0	9.9	7.6	96.6	114.0	94.5
Growing Degrees	5	22.4	21.5	21.3	19.5	19.9	23.4	25.2	21.4	21.3	20.9	216.8	206.6	191.3
	10	17.4	16.5	16.3	14.5	14.9	18.4	20.2	16.4	16.3	15.9	166.8	156.6	141.3

2nd 10-day period (11-20/08/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	55.4	56.4	55.4
Precipitation - Reference Evapotranspiration	-55.4	-56.4	-51.5
Number of Rainy Days	0.0	0.0	1.0
Number of Dry Days	23.0	47.0	-

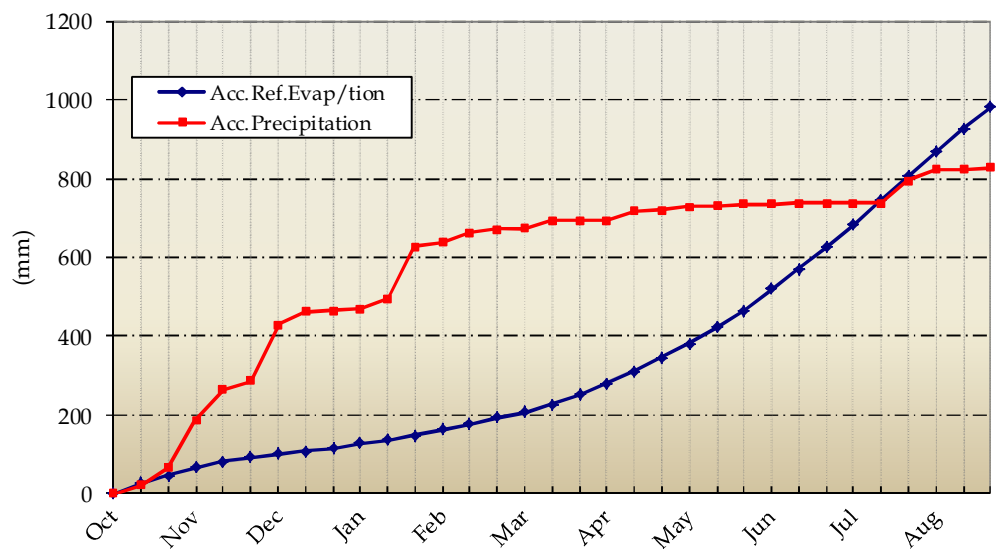
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/08/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.0	33.7	28.0	29.9	31.3	31.7	33.4	33.7	34.1	33.0	32.4	30.3	31.2
	Min	21.4	21.8	24.0	19.3	18.9	19.0	20.0	18.4	17.2	17.0	19.7	18.6	18.7
Relative Humidity	Max	84	85	76	83	83	83	81	82	77	81	82	87	-
	Min	31	34	46	36	32	38	28	24	23	25	32	37	-
Soil Temperature at 10 cm	06 UTC	30.0	24.0	30.0	29.0	29.0	29.0	29.0	29.0	28.5	28.0	28.6	-	27.4
	12 UTC	32.4	32.0	29.0	30.8	31.0	31.0	32.5	30.8	30.5	30.5	31.0	-	31.7
Sunshine Duration		11.4	11.0	12.2	12.3	12.0	11.4	12.4	11.7	11.7	11.6	11.8	10.6	11.2
Precipitation													3.7	4.0
Evaporation		2.0	12.0	11.0	3.0	16.0	4.0	12.0	12.0	1.0	9.0	82.0	81.7	73.5
Growing Degrees	5	23.2	22.8	21.0	19.6	20.1	20.4	21.7	21.1	20.7	20.0	210.4	194.7	199.2
	10	18.2	17.8	16.0	14.6	15.1	15.4	16.7	16.1	15.7	15.0	160.4	144.7	149.2

2nd 10-day period (11-20/08/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	55.7	48.6	49.2
Precipitation - Reference Evapotranspiration	-55.7	-44.9	-45.2
Number of Rainy Days	0.0	1.0	0.3
Number of Dry Days	24.0	48.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

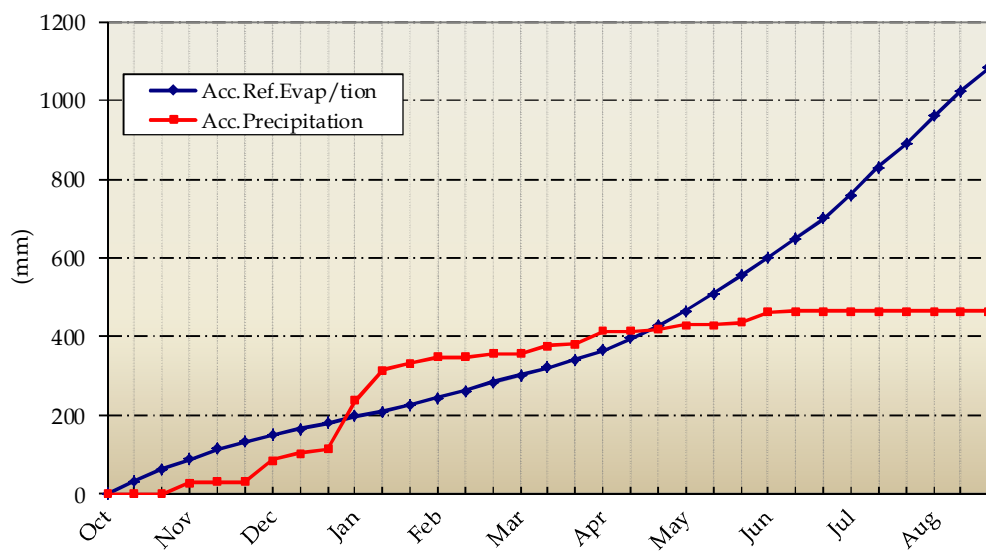


Iraklio

2nd 10-day period (11-20/08/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.0	32.0	30.2	30.0	29.2	28.6	27.6	29.0	29.2	29.0	29.6	28.8	28.2
	Min	27.0	24.4	24.8	21.0	25.4	24.0	26.2	26.0	22.0	21.8	24.3	22.3	22.2
Relative Humidity	Max	69	65	73	80	69	69	70	69	67	69	70	86	-
	Min	48	41	41	59	56	58	55	54	57	54	52	60	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.5	11.6	11.4	12.3	11.3	11.2	9.2	11.5	11.2	9.8	11.1	11.7	11.0
Precipitation														0.0
Evaporation		8.8	11.5	7.3	10.0	7.8	8.3	8.1	6.9	8.0	5.3	82.0	65.7	81.3
Growing Degrees	5	24.0	23.2	22.5	20.5	22.3	21.3	21.9	22.5	20.6	20.4	219.2	205.3	202.0
	10	19.0	18.2	17.5	15.5	17.3	16.3	16.9	17.5	15.6	15.4	169.2	155.3	152.0

2nd 10-day period (11-20/08/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	60.3	54.0	-
Precipitation - Reference Evapotranspiration	-60.3	-54.0	0.0
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	33.0	73.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

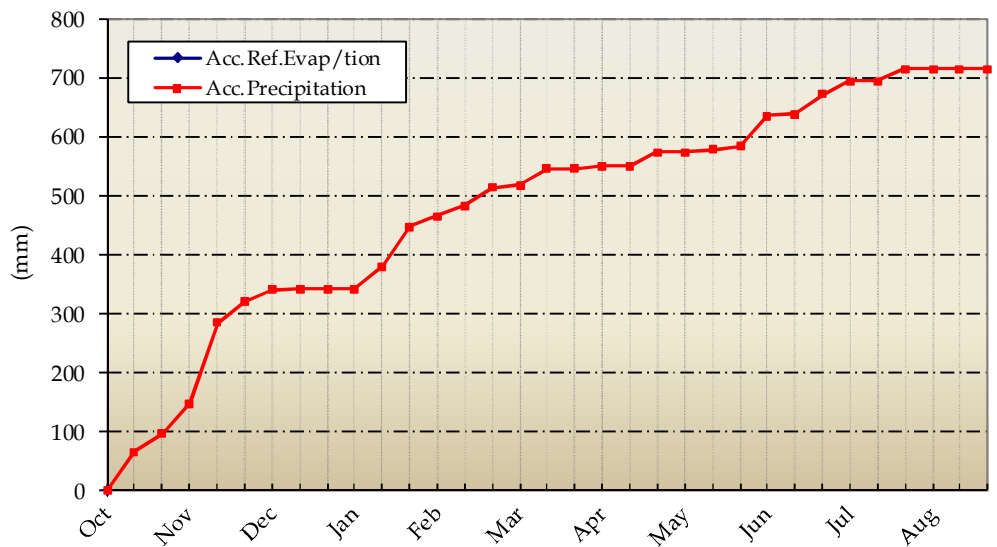


Ioannina

2nd 10-day period (11-20/08/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	39.0	36.4	29.2	32.8	34.4	35.2	34.0	33.8	34.4	35.0	34.4	31.5	30.9
	Min	18.2	16.8	15.0	15.5	15.0	15.6	16.5	15.2	15.0	15.2	15.8	14.6	15.4
Relative Humidity	Max	88	94	55	100	90	98	90	98	92	90	90	86	-
	Min	19	27	30	22	23	22	19	19	16	17	21	27	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	23.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.1
Sunshine Duration		10.2	11.3	12.1	11.1	10.7	8.4	9.4	10.0	10.4	8.2	10.2	10.2	9.5
Precipitation													0.0	11.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	64.1
Growing Degrees	5	23.6	21.6	17.1	19.2	19.7	20.4	20.3	19.5	19.7	20.1	201.1	-	176.6
	10	18.6	16.6	12.1	14.2	14.7	15.4	15.3	14.5	14.7	15.1	151.1	-	127.8

2nd 10-day period (11-20/08/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	45.3
Precipitation - Reference Evapotranspiration	-	-	-34.0
Number of Rainy Days	0.0	0.0	1.8
Number of Dry Days	12.0	17.0	-

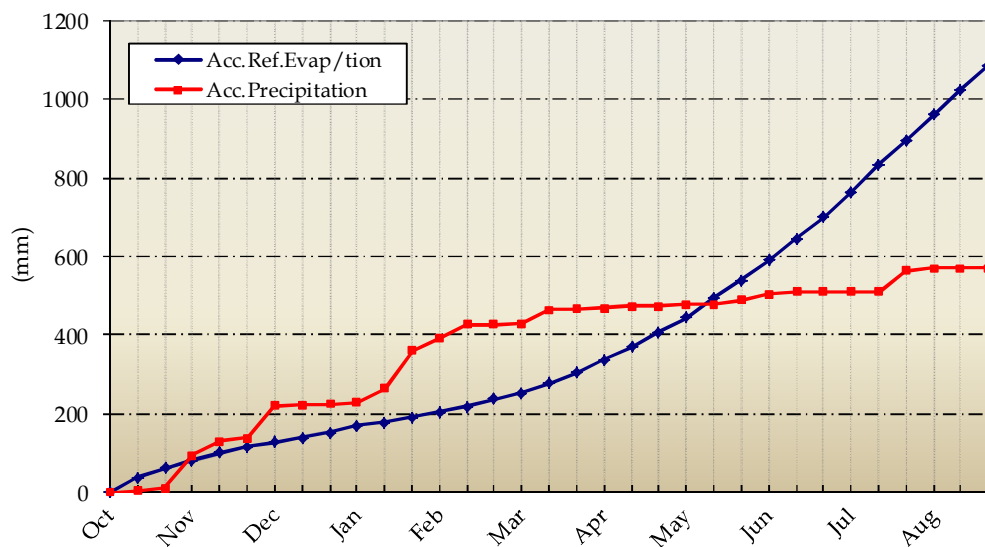
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/08/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.0	34.2	31.1	32.0	32.1	35.3	36.5	37.2	36.1	34.6	34.5	32.5	31.4
	Min	20.4	20.8	20.7	18.7	20.1	19.0	18.8	17.4	18.4	18.2	19.2	18.8	18.2
Relative Humidity	Max	87	81	71	76	73	83	83	82	83	70	79	81	-
	Min	33	33	30	30	35	24	18	15	17	20	26	30	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	25.9	25.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	28.0	29.6
Sunshine Duration		11.8	11.8	12.1	12.1	12.2	11.5	9.5	12.3	11.4	10.8	11.6	11.2	10.6
Precipitation													7.3	3.9
Evaporation		7.6	6.9	5.0	9.9	5.1	6.8	7.7	8.1	4.8	7.4	69.3	89.2	78.6
Growing Degrees	5	23.2	22.5	20.9	20.4	21.1	22.2	22.7	22.3	22.3	21.4	218.8	206.5	198.2
	10	18.2	17.5	15.9	15.4	16.1	17.2	17.7	17.3	17.3	16.4	168.8	156.5	148.2

2nd 10-day period (11-20/08/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	62.4	59.9	50.7
Precipitation - Reference Evapotranspiration	-62.4	-52.6	-46.8
Number of Rainy Days	0.0	1.0	0.7
Number of Dry Days	24.0	36.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

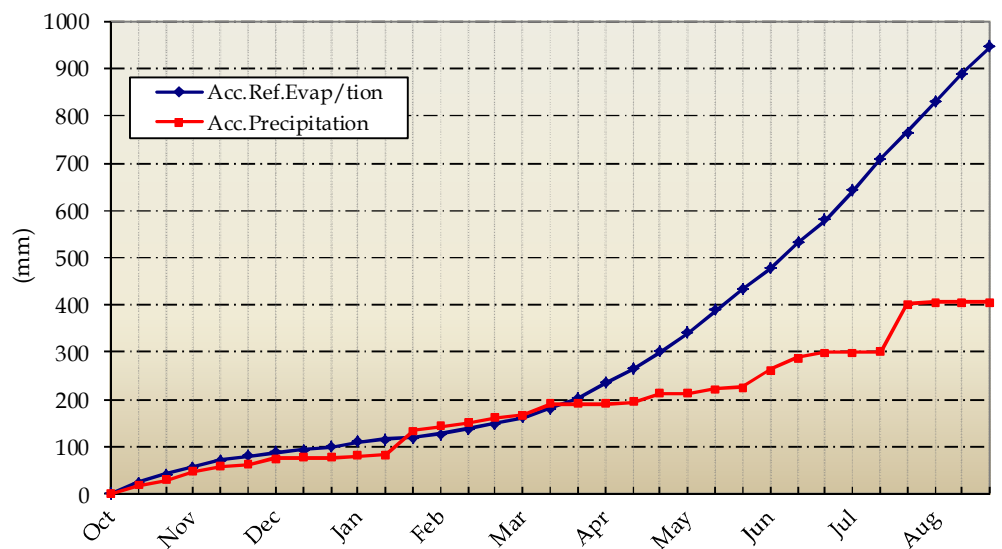


Larisa

2nd 10-day period (11-20/08/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.7	36.4	33.3	31.8	33.2	34.8	34.4	34.4	35.0	36.0	34.5	33.0	32.3
	Min	21.4	20.8	24.0	19.0	17.7	20.2	22.0	20.2	16.8	17.4	20.0	17.6	17.5
Relative Humidity	Max	72	75	58	65	75	75	65	54	59	85	68	74	-
	Min	28	29	21	29	29	21	21	18	18	18	23	23	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	28.2	26.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	28.3	28.7
Sunshine Duration		11.3	11.4	11.3	11.6	11.6	11.2	11.3	11.1	11.0	10.9	11.3	10.2	9.9
Precipitation													2.0	6.2
Evaporation		11.8	16.8	9.8	7.9	12.0	9.0	12.3	10.2	11.8	10.6	112.2	109.4	84.1
Growing Degrees	5	23.6	23.6	23.7	20.4	20.5	22.5	23.2	22.3	20.9	21.7	222.3	203.1	199.1
	10	18.6	18.6	18.7	15.4	15.5	17.5	18.2	17.3	15.9	16.7	172.3	153.1	149.1

2nd 10-day period (11-20/08/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.9	59.8	53.3
Precipitation - Reference Evapotranspiration	-57.9	-57.8	-47.1
Number of Rainy Days	0.0	1.0	1.4
Number of Dry Days	24.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

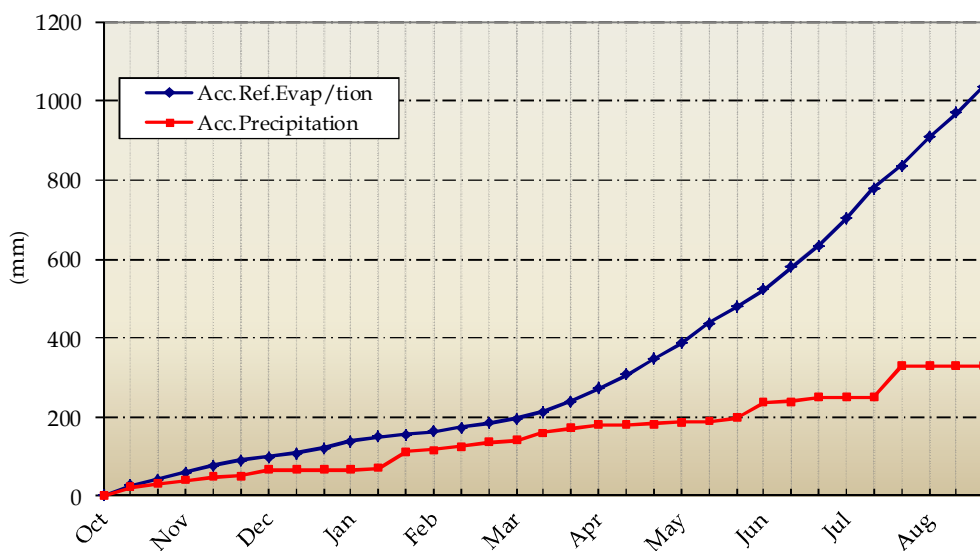


Mikra

2nd 10-day period (11-20/08/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.5	36.0	32.0	31.6	32.0	33.8	33.8	34.6	34.7	34.6	33.9	31.3	31.3
	Min	23.4	23.2	24.4	21.0	21.6	21.6	21.6	21.6	20.4	19.5	21.8	19.2	18.9
Relative Humidity	Max	65	59	52	55	60	70	66	62	60	57	61	74	-
	Min	26	15	34	30	32	30	22	17	15	16	24	28	-
Soil Temperature at 10 cm	06 UTC	31.4	31.2	30.6	28.2	29.0	29.7	29.2	29.6	29.2	28.9	29.7	27.5	26.0
	12 UTC	34.2	34.8	33.2	31.8	31.4	33.0	33.0	33.2	31.8	32.2	32.9	30.4	30.5
Sunshine Duration		11.3	12.9	12.5	11.8	11.9	7.7	11.6	10.4	11.2	11.5	11.3	11.3	10.0
Precipitation														6.6
Evaporation		10.2	14.3	11.8	9.9	7.0	9.0	9.8	9.2	8.9	9.7	99.8	88.9	83.0
Growing Degrees	5	24.5	24.6	23.2	21.3	21.8	22.7	22.7	23.1	22.6	22.1	228.5	202.9	201.0
	10	19.5	19.6	18.2	16.3	16.8	17.7	17.7	18.1	17.6	17.1	178.5	152.9	151.0

2nd 10-day period (11-20/08/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	67.6	60.5	52.4
Precipitation - Reference Evapotranspiration	-67.6	-60.5	-45.8
Number of Rainy Days	0.0	0.0	1.1
Number of Dry Days	34.0	11.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



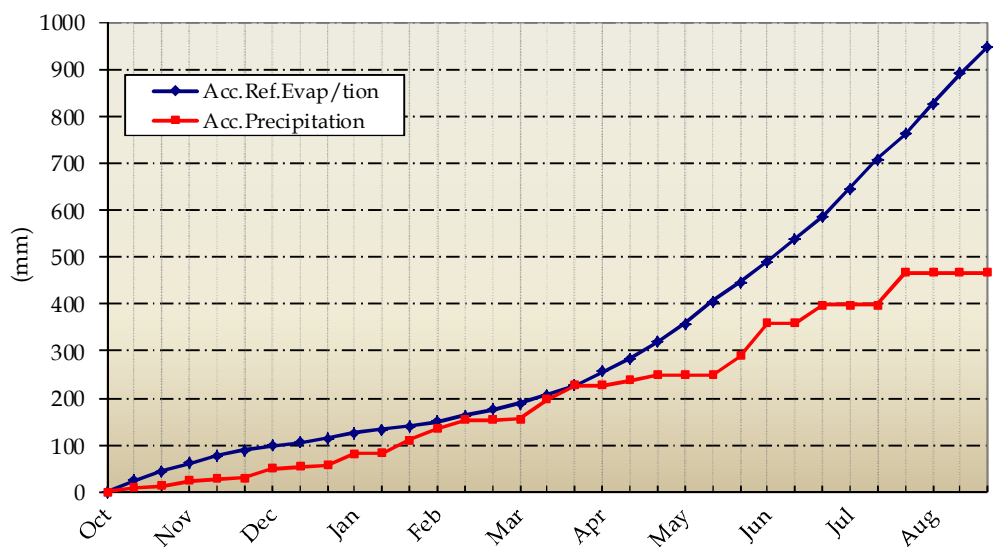


Tanagra

2nd 10-day period (11-20/08/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.1	37.0	33.6	30.5	31.0	31.5	31.7	32.3	33.0	34.2	32.9	31.6	31.8
	Min	22.0	20.8	20.6	18.2	20.4	21.0	25.2	19.4	20.0	18.7	20.6	18.7	18.4
Relative Humidity	Max	65	63	56	76	64	64	50	60	46	47	59	61	-
	Min	27	13	16	30	32	26	19	20	17	16	22	25	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.0	12.3	12.2	12.4	12.2	11.7	12.1	12.2	11.9	12.3	12.1	11.7	
Precipitation													0.0	3.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	23.1	23.9	22.1	19.4	20.7	21.3	23.5	20.9	21.5	21.5	217.6	201.2	
	10	18.1	18.9	17.1	14.4	15.7	16.3	18.5	15.9	16.5	16.5	167.6	151.2	

2nd 10-day period (11-20/08/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	56.8	54.6	
Precipitation - Reference Evapotranspiration	-56.8	-54.6	3.4
Number of Rainy Days	0.0	0.0	0.8
Number of Dry Days	24.0	53.0	-

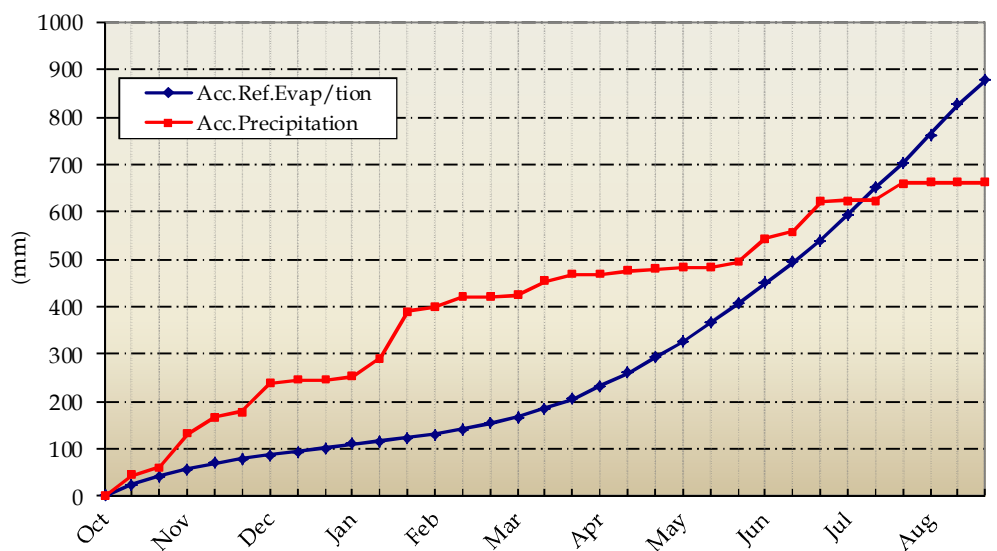
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/08/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.9	36.8	30.0	30.7	30.5	32.0	32.2	32.6	32.7	32.9	32.7	30.9	29.9
	Min	17.2	17.1	15.5	13.5	13.7	14.6	13.4	14.3	20.6	12.3	15.2	13.8	14.5
Relative Humidity	Max	73	85	78	86	87	87	77	69	58	72	77	91	-
	Min	21	16	24	27	28	24	23	18	17	16	21	23	-
Soil Temperature at 10 cm	06 UTC	28.8	29.4	28.8	28.2	-	27.2	27.2	27.0	-	-	28.1	23.8	24.7
	12 UTC	33.2	-	-	31.8	-	30.8	30.8	30.8	-	-	31.5	30.3	27.4
Sunshine Duration		11.6	11.5	11.2	8.5	9.9	11.8	11.8	11.7	11.7	8.5	10.8	10.8	9.7
Precipitation													7.0	13.8
Evaporation		8.3	9.2	7.7	-	-	7.8	8.7	-	-	-	-	-	56.3
Growing Degrees	5	22.1	22.0	17.8	17.1	17.1	18.3	17.8	18.5	21.7	17.6	189.8	173.6	172.3
	10	17.1	17.0	12.8	12.1	12.1	13.3	12.8	13.5	16.7	12.6	139.8	123.6	122.3

2nd 10-day period (11-20/08/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	52.2	47.4	47.6
Precipitation - Reference Evapotranspiration	-52.2	-40.4	-33.8
Number of Rainy Days	0.0	1.0	1.4
Number of Dry Days	24.0	9.0	-

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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