



AGROMETEOROLOGICAL BULLETIN

*October 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



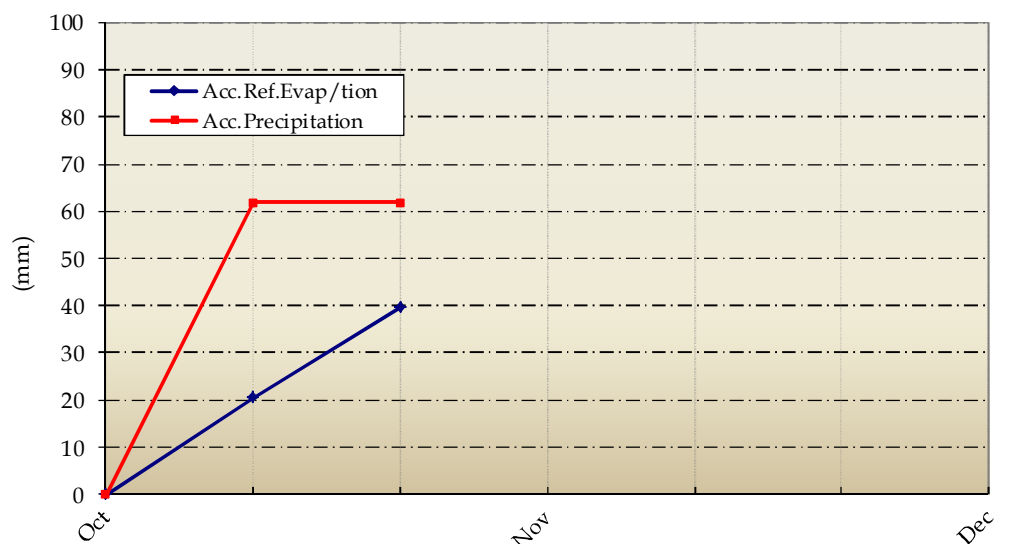
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2nd 10-day period (11-20/10/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.0	22.4	23.0	23.8	20.0	25.2	24.8	27.0	23.6	21.4	23.3	20.4	20.8
	Min	7.4	7.6	8.2	9.4	7.2	9.4	8.2	10.4	7.4	8.0	8.3	10.0	10.8
Relative Humidity	Max	97	97	97	95	95	97	95	90	94	97	95	87	-
	Min	53	53	52	44	51	42	41	30	46	58	47	53	-
Soil Temperature at 10 cm	06 UTC	13.2	14.0	14.4	15.2	14.2	15.0	15.8	15.8	15.6	15.4	14.9	16.3	15.2
	12 UTC	17.2	17.6	19.0	18.6	18.6	19.0	19.6	20.0	19.4	19.0	18.8	20.4	18.0
Sunshine Duration		8.4	9.9	10.0	9.9	8.5	9.8	9.4	9.7	8.6	9.3	9.4	6.5	5.9
Precipitation													6.8	15.0
Evaporation		2.8	3.7	3.3	2.4	1.8	4.4	4.2	2.6	3.3	3.4	31.9	30.8	42.1
Growing Degrees	5	9.7	10.0	10.6	11.6	8.6	12.3	11.5	13.7	10.5	9.7	108.2	101.8	107.7
	10	4.7	5.0	5.6	6.6	3.6	7.3	6.5	8.7	5.5	4.7	58.2	51.8	58.4

2nd 10-day period (11-20/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	19.2	19.8	22.7
Precipitation - Reference Evapotranspiration	-19.2	-13.0	-7.7
Number of Rainy Days	0.0	3.0	1.9
Number of Dry Days	12.0	2.0	-

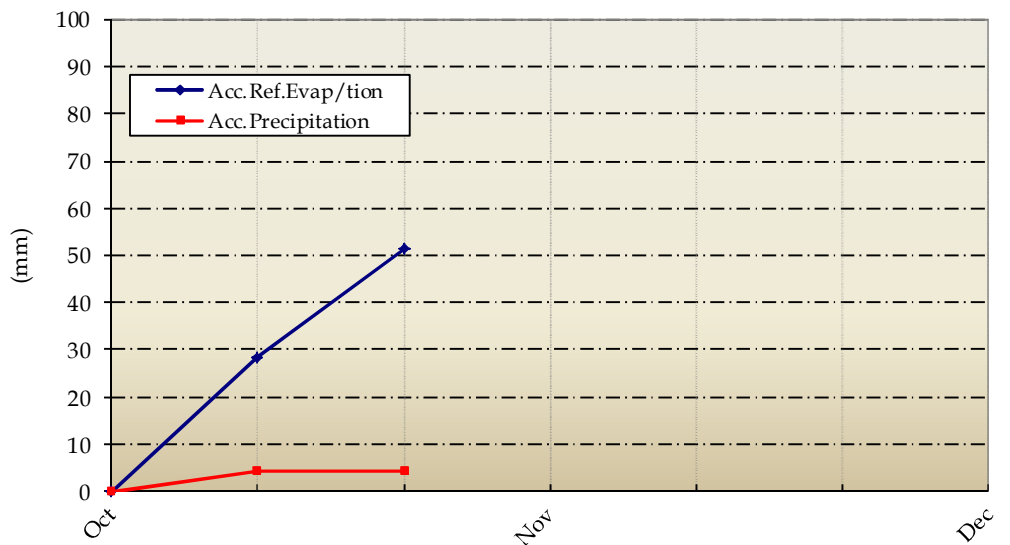
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/10/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	23.7	24.3	25.9	26.2	25.8	29.0	26.4	24.2	24.2	25.4	24.4	24.1
	Min	13.8	9.4	11.6	10.8	10.6	9.0	9.5	11.4	14.3	14.0	11.4	12.9	13.2
Relative Humidity	Max	78	93	86	82	81	82	85	89	90	90	86	90	-
	Min	40	32	35	28	29	30	23	36	57	45	36	47	-
Soil Temperature at 10 cm	06 UTC	19.6	18.9	18.8	19.0	18.6	19.0	19.4	19.4	20.3	20.2	19.3	-	18.6
	12 UTC	20.6	21.2	21.0	21.2	21.4	21.6	21.6	22.0	21.2	24.8	21.7	-	21.5
Sunshine Duration		2.7	9.3	9.8	9.9	9.7	10.2	9.9	9.1	9.3	9.0	8.9	6.0	7.1
Precipitation							0.0					0.0	42.2	23.9
Evaporation		2.0	4.0	6.0	3.0	6.0	4.0	6.0	3.0	5.0	5.0	44.0	34.6	36.4
Growing Degrees	5	13.9	11.6	13.0	13.4	13.4	12.4	14.3	13.9	14.3	14.1	134.1	136.6	136.6
	10	8.9	6.6	8.0	8.4	8.4	7.4	9.3	8.9	9.3	9.1	84.1	86.6	86.6

2nd 10-day period (11-20/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.8	20.8	22.5
Precipitation - Reference Evapotranspiration	-22.8	21.4	1.4
Number of Rainy Days	0.0	2.0	2.6
Number of Dry Days	13.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

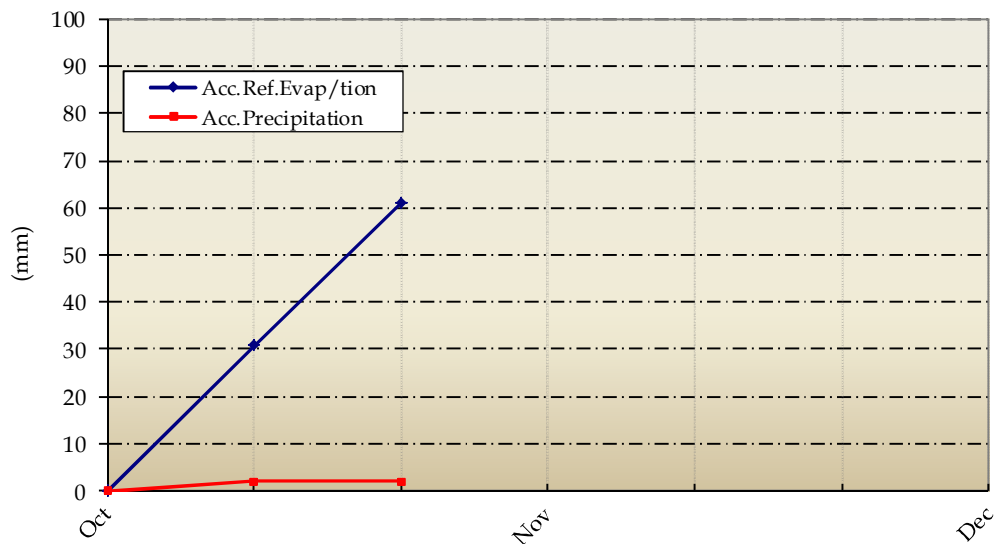


Iraklio

2nd 10-day period (11-20/10/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.2	23.0	23.0	23.4	22.0	23.4	22.2	22.8	23.6	23.2	23.0	24.1	24.0
	Min	14.0	20.0	19.0	18.4	19.0	19.2	20.0	14.6	15.0	14.4	17.4	19.0	17.1
Relative Humidity	Max	84	73	76	80	72	74	85	89	89	93	82	82	-
	Min	54	54	58	54	56	62	64	66	71	60	60	55	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.8	8.3	8.8	8.3	7.4	7.5	8.1	8.0	8.0	8.2	8.1	5.9	6.5
Precipitation														12.5
Evaporation		4.0	5.1	6.1	5.1	5.5	3.5	1.9	2.0	3.1	2.6	38.9	43.8	49.3
Growing Degrees	5	13.6	16.5	16.0	15.9	15.5	16.3	16.1	13.7	14.3	13.8	151.7	165.5	155.9
	10	8.6	11.5	11.0	10.9	10.5	11.3	11.1	8.7	9.3	8.8	101.7	115.5	105.9

2nd 10-day period (11-20/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.1	29.6	-
Precipitation - Reference Evapotranspiration	-30.1	-29.6	12.5
Number of Rainy Days	0.0	0.0	1.7
Number of Dry Days	14.0	27.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

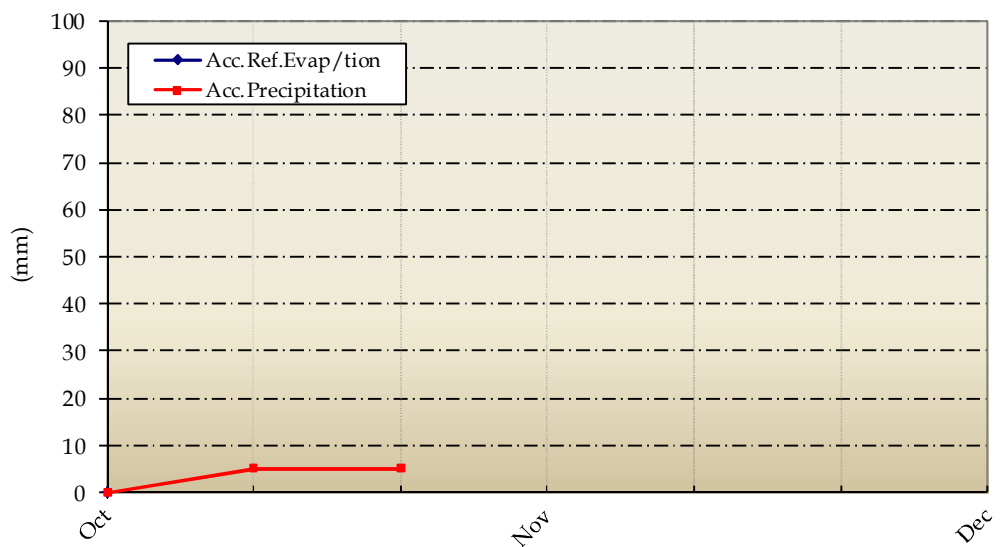


Ioannina

2nd 10-day period (11-20/10/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	23.8	25.2	26.0	27.0	28.4	28.8	27.6	25.0	24.4	26.0	20.7	20.6
	Min	5.0	4.0	4.6	5.0	7.0	4.8	5.5	4.0	5.0	5.0	5.0	7.0	8.9
Relative Humidity	Max	100	100	100	97	75	100	100	97	100	100	97	100	-
	Min	27	27	29	19	21	23	26	18	27	33	25	52	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	14.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	16.3
Sunshine Duration		7.4	8.3	9.2	9.1	8.3	8.5	7.7	7.3	7.9	7.0	8.1	4.9	5.3
Precipitation													29.8	37.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	30.1
Growing Degrees	5	9.5	8.9	9.9	10.5	12.0	11.6	12.2	10.8	10.0	9.7	105.1	88.5	98.7
	10	4.5	3.9	4.9	5.5	7.0	6.6	7.2	5.8	5.0	4.7	55.1	38.5	49.1

2nd 10-day period (11-20/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	17.6
Precipitation - Reference Evapotranspiration	-	-	19.5
Number of Rainy Days	0.0	4.0	3.4
Number of Dry Days	13.0	0.0	-

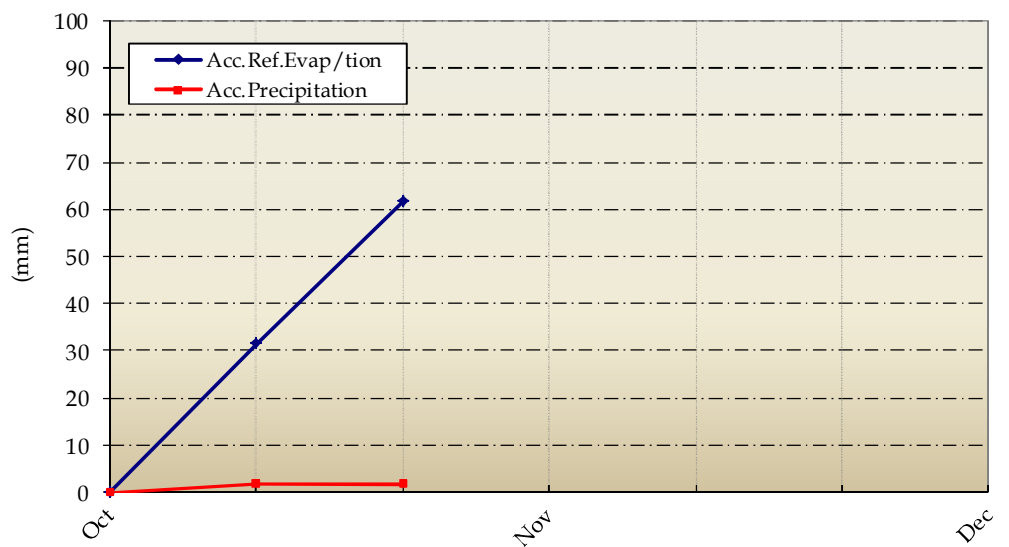
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/10/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.5	26.5	25.5	27.5	27.9	25.8	25.6	24.7	25.8	27.5	26.0	24.8	24.7
	Min	9.8	12.0	10.0	11.0	11.4	10.9	10.3	11.2	12.3	11.6	11.0	13.5	13.1
Relative Humidity	Max	85	85	84	81	81	80	91	91	92	88	86	90	-
	Min	32	27	31	27	25	39	41	57	51	37	37	46	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	18.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.9
Sunshine Duration		3.1	9.9	9.9	9.8	10.0	10.0	10.1	8.3	9.0	9.8	9.0	7.1	6.8
Precipitation		0.0										0.0	7.6	24.4
Evaporation		2.4	4.0	2.2	5.1	4.5	3.2	3.0	2.6	6.4	3.2	36.6	29.6	39.0
Growing Degrees	5	11.7	14.3	12.8	14.3	14.7	13.4	13.0	13.0	14.1	14.6	135.4	141.5	138.6
	10	6.7	9.3	7.8	9.3	9.7	8.4	8.0	8.0	9.1	9.6	85.4	91.5	88.6

2nd 10-day period (11-20/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.2	24.2	24.3
Precipitation - Reference Evapotranspiration	-30.2	-16.6	0.1
Number of Rainy Days	0.0	5.0	2.7
Number of Dry Days	13.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

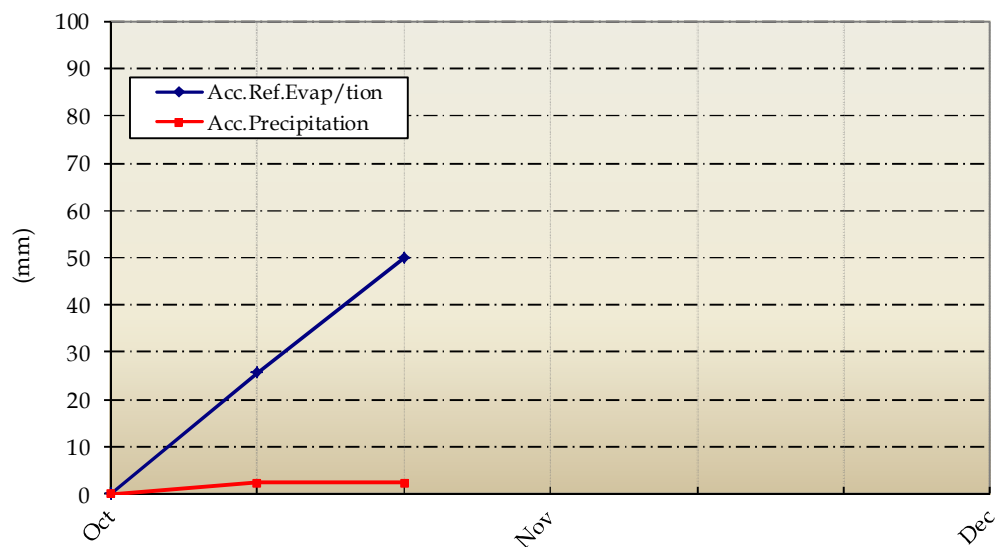


Larisa

2nd 10-day period (11-20/10/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	26.6	27.6	26.6	25.5	27.8	26.7	27.2	27.6	27.6	26.7	21.2	23.0
	Min	7.0	6.4	7.6	7.2	10.6	8.0	9.4	7.4	7.2	7.6	7.8	11.3	10.1
Relative Humidity	Max	92	92	82	78	88	82	89	84	78	87	85	96	-
	Min	33	23	24	23	29	25	31	29	20	24	26	48	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	18.9	17.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	19.1	18.6
Sunshine Duration		7.2	7.1	7.1	7.2	7.3	7.2	7.1	7.0	7.3	7.0	7.2	4.1	5.6
Precipitation													12.5	14.1
Evaporation		6.0	14.0	6.0	5.4	4.6	6.1	6.6	4.4	3.9	6.6	63.6	22.8	31.3
Growing Degrees	5	10.5	11.5	12.6	11.9	13.1	12.9	13.1	12.3	12.4	12.6	122.8	112.5	115.6
	10	5.5	6.5	7.6	6.9	8.1	7.9	8.1	7.3	7.4	7.6	72.8	62.5	65.8

2nd 10-day period (11-20/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	24.2	18.5	20.6
Precipitation - Reference Evapotranspiration	-24.2	-6.0	-6.5
Number of Rainy Days	0.0	3.0	2.4
Number of Dry Days	13.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

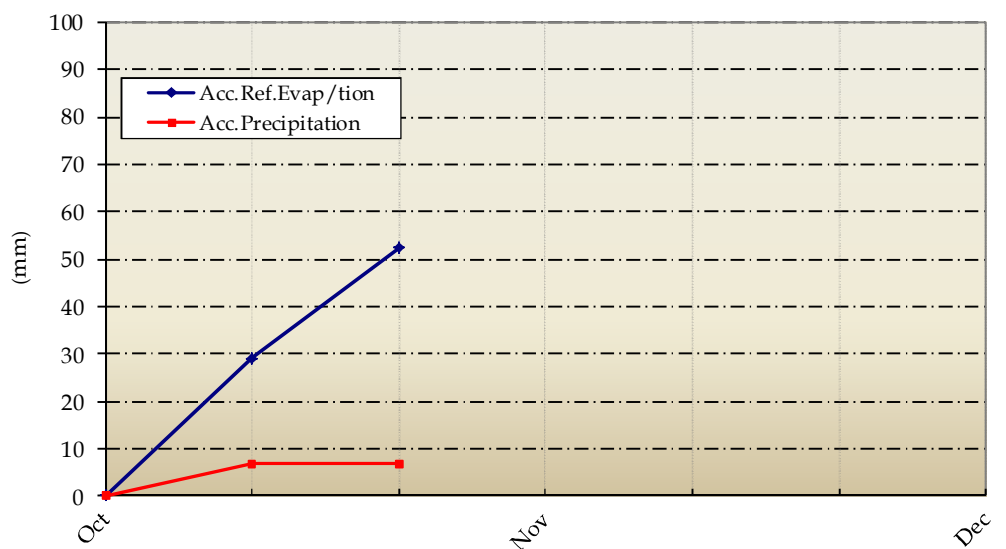


Mikra

2nd 10-day period (11-20/10/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.4	24.2	25.7	24.4	24.0	26.0	24.4	28.5	25.2	24.5	24.9	19.4	21.6
	Min	10.2	8.6	9.6	16.8	10.8	10.5	10.6	9.9	10.4	9.0	10.6	13.1	11.6
Relative Humidity	Max	79	77	78	69	77	80	81	81	63	69	75	84	-
	Min	40	30	27	32	30	30	38	23	21	34	30	54	-
Soil Temperature at 10 cm	06 UTC	16.8	16.7	17.2	18.2	23.0	18.0	18.4	18.2	18.0	17.5	18.2	16.8	16.5
	12 UTC	19.4	19.0	24.6	20.2	20.4	20.8	20.8	20.6	20.4	20.0	20.6	18.2	19.4
Sunshine Duration		10.6	9.6	9.5	9.4	9.6	9.2	9.0	8.9	9.1	9.0	9.4	3.0	5.3
Precipitation													9.2	13.0
Evaporation		3.9	3.3	4.6	7.1	3.8	4.6	2.8	5.6	1.7	4.1	41.5	26.4	31.8
Growing Degrees	5	11.3	11.4	12.7	15.6	12.4	13.3	12.5	14.2	12.8	11.8	127.9	112.4	116.2
	10	6.3	6.4	7.7	10.6	7.4	8.3	7.5	9.2	7.8	6.8	77.9	62.4	66.2

2nd 10-day period (11-20/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.1	16.2	20.4
Precipitation - Reference Evapotranspiration	-23.1	-7.0	-7.4
Number of Rainy Days	0.0	2.0	2.0
Number of Dry Days	13.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

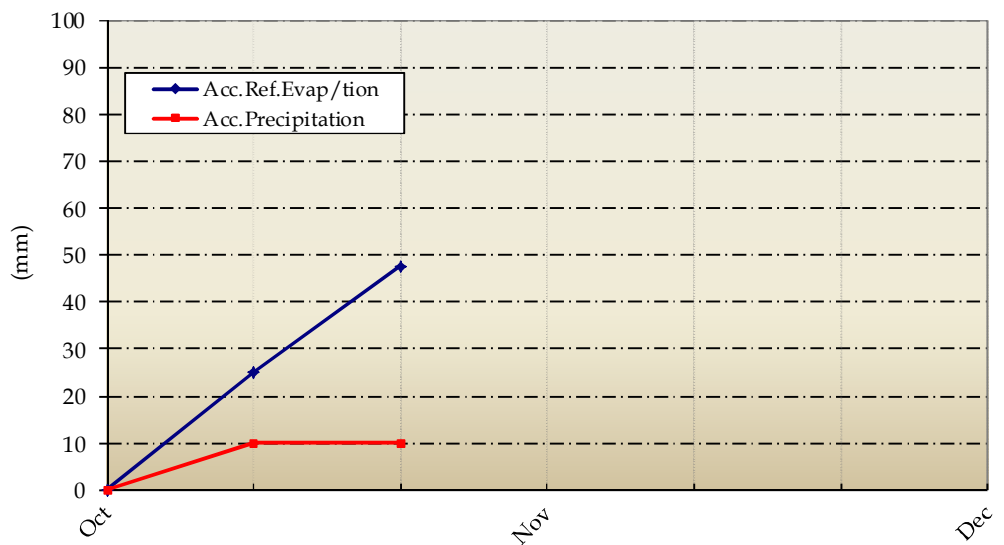


Tanagra

2nd 10-day period (11-20/10/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.9	23.9	24.2	23.8	23.0	26.2	24.1	25.5	25.6	26.2	24.5	22.2	22.8
	Min	9.9	8.6	9.8	11.4	1.3	11.3	12.9	11.7	9.6	10.5	9.7	12.8	12.0
Relative Humidity	Max	83	86	77	79	81	79	85	76	80	98	82	86	-
	Min	30	25	28	28	26	26	33	28	27	27	28	42	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		7.2	9.3	9.3	9.4	8.9	9.0	8.7	7.9	9.3	8.8	8.8	5.4	
Precipitation			0.0									0.0	3.3	11.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	11.4	11.3	12.0	12.6	7.2	13.8	13.5	13.6	12.6	13.4	121.2	125.2	
	10	6.4	6.3	7.0	7.6	2.2	8.8	8.5	8.6	7.6	8.4	71.2	75.2	

2nd 10-day period (11-20/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.6	20.0	
Precipitation - Reference Evapotranspiration	-22.6	-16.7	11.3
Number of Rainy Days	0.0	1.0	2.5
Number of Dry Days	19.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

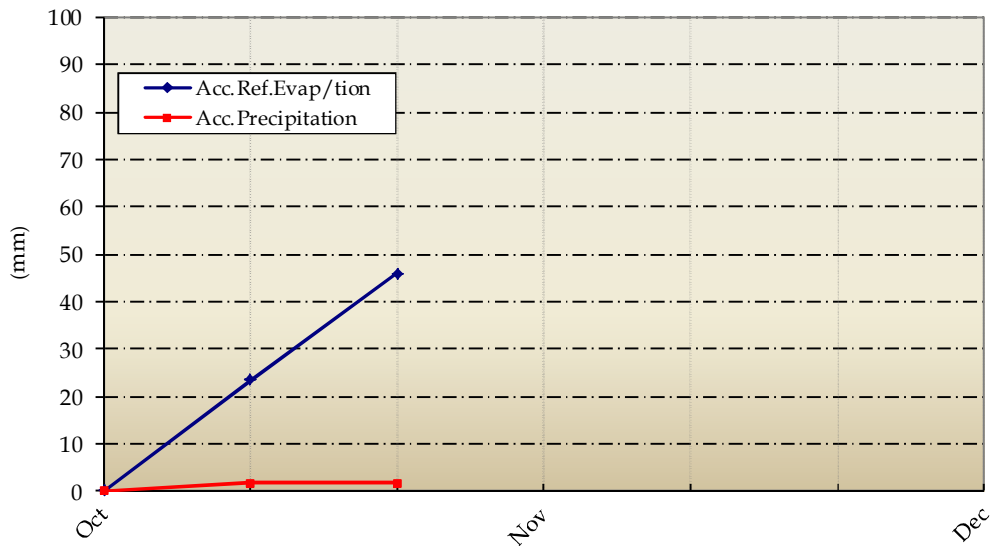


Tripoli

2nd 10-day period (11-20/10/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.5	22.3	23.2	24.6	21.1	25.1	24.7	24.5	25.8	25.2	23.6	21.6	21.3
	Min	3.7	3.5	2.8	3.7	7.6	4.8	11.1	4.4	4.2	4.2	5.0	8.3	8.2
Relative Humidity	Max	100	100	89	91	85	89	84	100	100	100	94	96	-
	Min	40	20	21	20	28	24	23	19	17	25	24	48	-
Soil Temperature at 10 cm	06 UTC	14.8	14.6	14.4	14.6	15.4	14.8	16.2	15.2	15.0	15.4	15.0	15.0	15.5
	12 UTC	17.4	18.0	17.8	-	-	17.8	18.8	17.8	17.6	18.4	18.0	18.0	17.2
Sunshine Duration		4.0	9.8	9.9	9.8	9.5	9.7	9.7	9.5	9.2	9.6	9.1	4.0	6.8
Precipitation													17.0	15.9
Evaporation		2.1	3.2	4.4	4.2	4.1	4.0	4.2	3.7	2.4	2.5	34.8	-	28.1
Growing Degrees	5	6.6	7.9	8.0	9.2	9.4	10.0	12.9	9.5	10.0	9.7	93.0	99.3	97.5
	10	1.6	2.9	3.0	4.2	4.4	5.0	7.9	4.5	5.0	4.7	43.0	49.3	48.2

2nd 10-day period (11-20/10/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.5	18.1	21.4
Precipitation - Reference Evapotranspiration	-22.5	-1.1	-5.5
Number of Rainy Days	0.0	2.0	2.7
Number of Dry Days	13.0	2.0	-

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_n 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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