



AGROMETEOROLOGICAL BULLETIN

June 2023
3rd 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



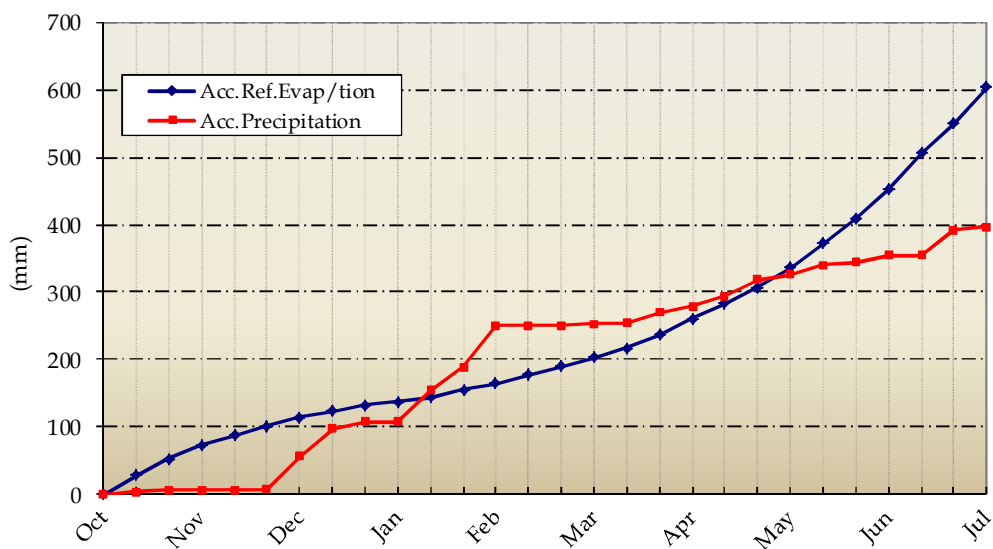
Hellenic National Meteorological Service
Division of Climatology-Applications
El. Venizelou Street 14, 16777
Helliniko, Athens

Web addresses of HNMS
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

3rd 10-day period (21-30/06/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.4	32.4	32.4	33.8	32.8	29.4	29.0	30.8	27.2	28.0	30.5	29.5	29.9
	Min	14.0	16.4	19.0	17.0	16.0	18.0	18.0	17.0	18.0	15.6	16.9	18.5	18.1
Relative Humidity	Max	89	86	82	86	86	86	83	90	92	93	87	89	80
	Min	52	39	42	23	24	52	40	39	59	41	41	45	39
Soil Temperature at 10 cm	06 UTC	21.2	23.0	23.8	24.2	24.8	25.6	25.2	25.4	25.0	22.3	24.0	24.3	24.7
	12 UTC	25.6	27.0	28.0	28.4	28.7	28.6	27.2	29.4	24.4	26.6	27.4	26.9	28.5
Sunshine Duration		13.3	11.2	13.7	13.3	13.1	9.4	12.6	13.6	4.1	13.8	11.8	10.5	10.7
Precipitation										5.3		5.3	16.6	3.0
Evaporation		8.0	8.0	8.4	9.6	0.6	7.5	8.5	9.7	3.6	7.0	70.9	74.1	86.6
Growing Degrees	5	16.7	19.4	20.7	20.4	19.4	18.7	18.5	18.9	17.6	16.8	187.1	190.0	169.9
	10	11.7	14.4	15.7	15.4	14.4	13.7	13.5	13.9	12.6	11.8	137.1	140.0	125.1

3rd 10-day period (21-30/06/2023)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	54.6	51.4	47.0
Precipitation - Reference Evapotranspiration	-49.3	-34.8	-44.0
Number of Rainy Days	1.0	4.0	1.0
Number of Dry Days	8.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

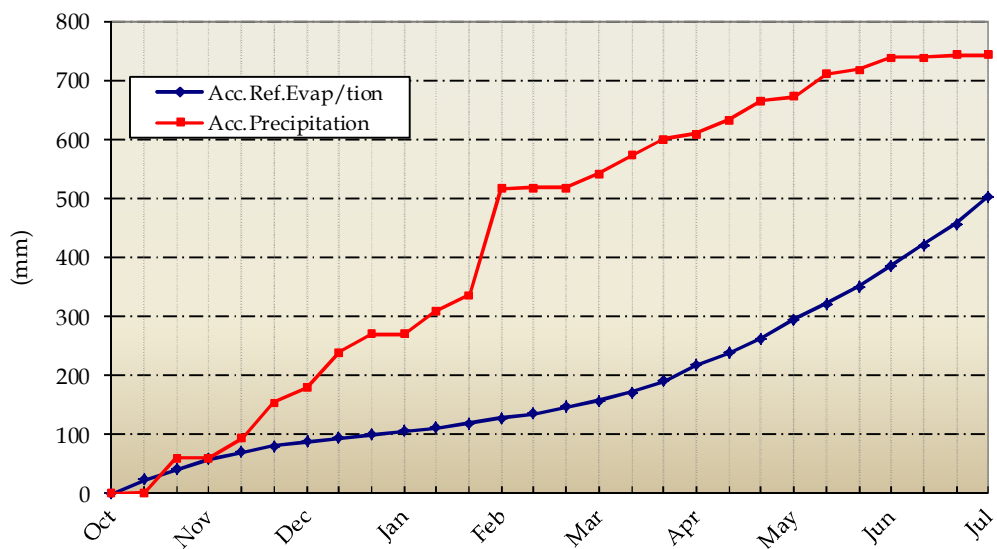


3rd 10-day period (21-30/06/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.4	32.6	33.4	32.9	33.2	30.5	31.8	29.7	29.3	30.7	31.6	32.6	29.7
	Min	17.2	18.8	20.2	20.2	21.0	18.5	20.2	20.2	20.0	19.6	19.6	20.4	18.0
Relative Humidity	Max	95	95	95	96	94	96	96	95	96	96	95	92	88
	Min	46	40	44	49	45	49	50	56	56	48	48	43	41
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	32.4
Sunshine Duration		7.7	12.8	12.2	9.4	6.0	6.0	12.8	13.0	12.5	10.1	10.2	12.6	12.1
Precipitation														4.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	87.5
Growing Degrees	5	19.3	20.7	21.8	21.6	22.1	19.5	21.0	20.0	19.7	20.2	205.7	215.1	158.1
	10	14.3	15.7	16.8	16.6	17.1	14.5	16.0	15.0	14.7	15.2	155.7	165.1	116.1

3rd 10-day period (21-30/06/2023)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	47.3	53.7
Precipitation - Reference Evapotranspiration	-47.3	-53.7
Number of Rainy Days	0.0	0.3
Number of Dry Days	13.0	20.0

The missing info in the tables are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

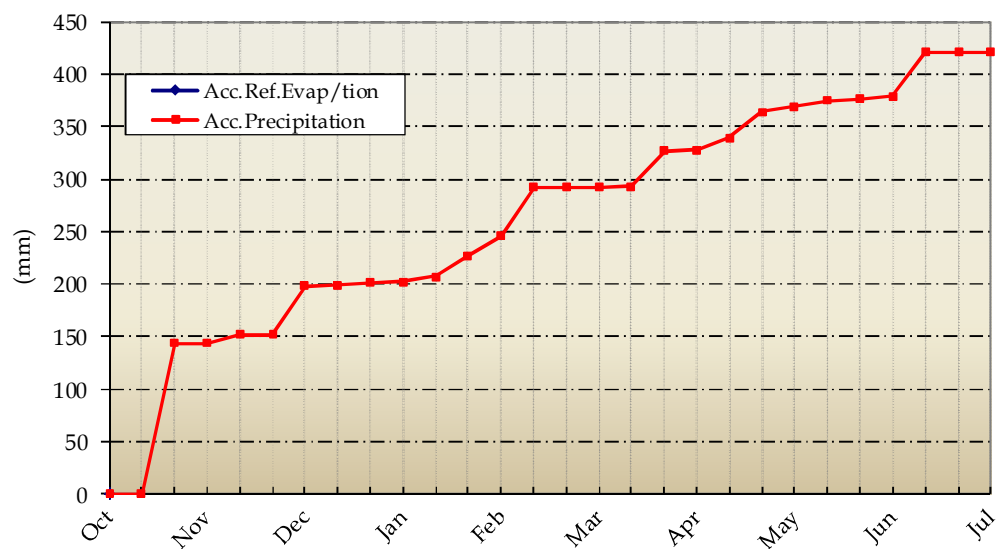


3rd 10-day period (21-30/06/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.4	27.4	27.2	28.0	27.8	28.0	28.6	28.6	28.4	27.4	27.9	29.1	28.5
	Min	20.0	21.0	23.0	18.8	19.4	19.8	24.0	20.6	19.6	22.0	20.8	22.7	21.1
Relative Humidity	Max	80	73	78	75	75	76	79	85	88	89	80	80	79
	Min	52	51	62	56	51	54	58	53	57	62	56	49	53
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		13.1	13.0	12.9	13.1	12.7	12.6	13.0	13.0	13.0	12.1	12.8	12.8	12.4
Precipitation														0.1
Evaporation		7.5	5.5	9.0	6.5	4.0	8.9	6.9	6.0	6.2	6.0	66.5	70.6	68.7
Growing Degrees	5	18.7	19.2	20.1	18.4	18.6	18.9	21.3	19.6	19.0	19.7	193.5	209.0	188.1
	10	13.7	14.2	15.1	13.4	13.6	13.9	16.3	14.6	14.0	14.7	143.5	159.0	140.4

3rd 10-day period (21-30/06/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	11.0	18.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

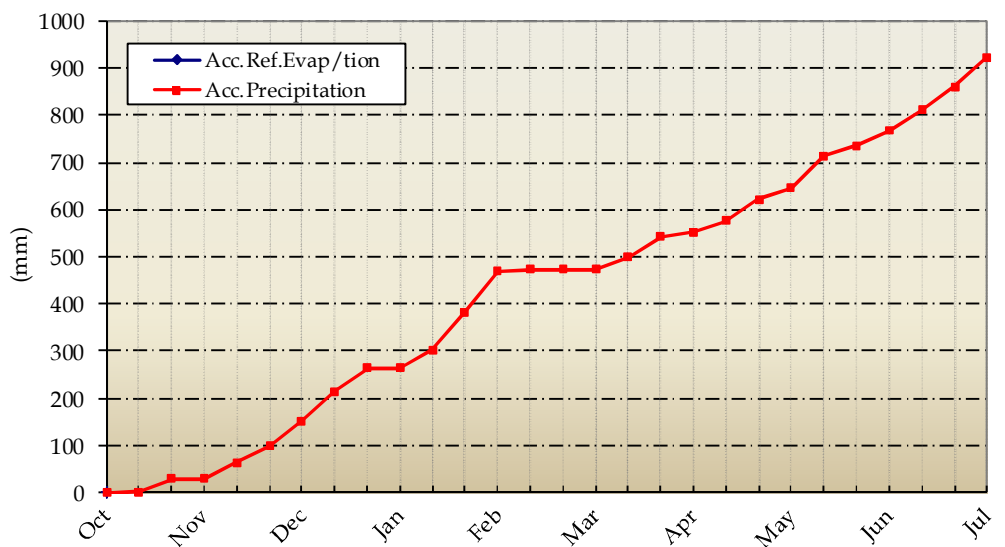


3rd 10-day period (21-30/06/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.3	32.6	32.6	30.8	26.4	29.8	29.9	29.0	29.2	28.7	30.0	33.8	30.1
	Min	14.6	16.7	16.9	16.7	14.1	14.3	15.2	17.5	14.6	15.2	15.6	15.2	14.9
Relative Humidity	Max	100	100	100	100	100	100	100	100	100	100	100	92	91
	Min	47	37	45	30	58	44	50	41	43	42	44	29	41
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	24.5
Sunshine Duration		13.0	9.5	8.5	7.3	1.0	8.9	10.0	12.2	10.8	11.0	9.2	12.3	9.7
Precipitation			21.7	11.2	7.0	1.2	20.0	0.7	0.1			61.9	0.0	5.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	18.0	19.7	19.8	18.8	15.3	17.1	17.6	18.3	16.9	17.0	178.1	195.2	147.1
	10	13.0	14.7	14.8	13.8	10.3	12.1	12.6	13.3	11.9	12.0	128.1	145.2	105.0

3rd 10-day period (21-30/06/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	29.8
Precipitation - Reference Evapotranspiration	-	-	-24.0
Number of Rainy Days	7.0	0.0	1.3
Number of Dry Days	3.0	16.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

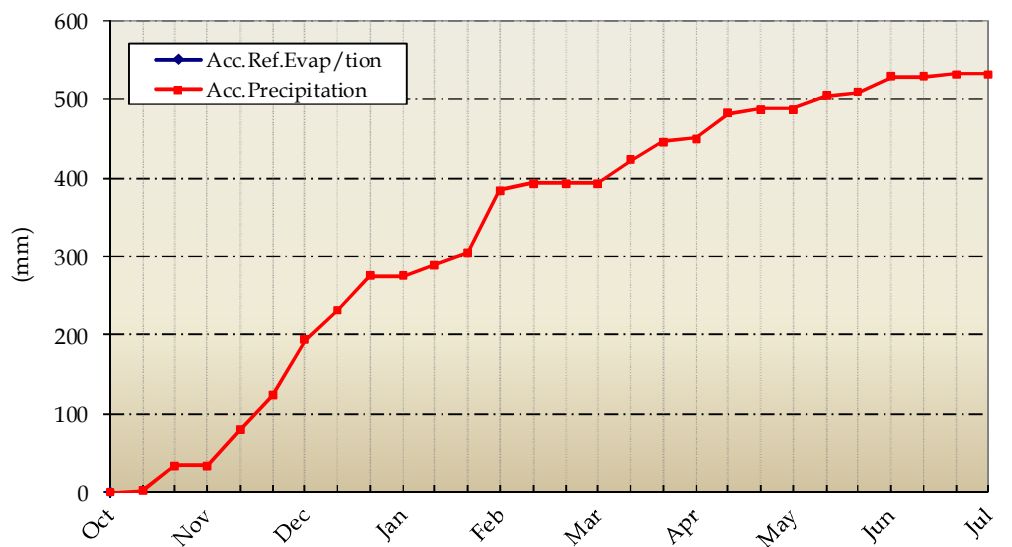


3rd 10-day period (21-30/06/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.0	32.5	33.4	30.9	32.3	31.1	30.8	31.3	33.0	28.8	31.6	33.3	30.8
	Min	17.2	18.0	18.6	18.4	18.5	18.7	18.2	19.0	18.6	19.0	18.4	20.0	17.7
Relative Humidity	Max	95	92	90	93	94	90	94	94	94	94	93	91	87
	Min	40	34	32	44	41	44	48	48	42	59	43	38	37
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	24.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.5
Sunshine Duration		12.4	12.2	11.4	11.8	10.0	9.8	11.6	11.5	12.1	13.1	11.6	13.0	11.3
Precipitation						0.0						0.0		5.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	71.3
Growing Degrees	5	19.6	20.3	21.0	19.7	20.4	19.9	19.5	20.2	20.8	18.9	200.2	216.5	177.9
	10	14.6	15.3	16.0	14.7	15.4	14.9	14.5	15.2	15.8	13.9	150.2	166.5	131.6

3rd 10-day period (21-30/06/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	49.0
Precipitation - Reference Evapotranspiration	-	-	-43.9
Number of Rainy Days	0.0	0.0	0.5
Number of Dry Days	12.0	10.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

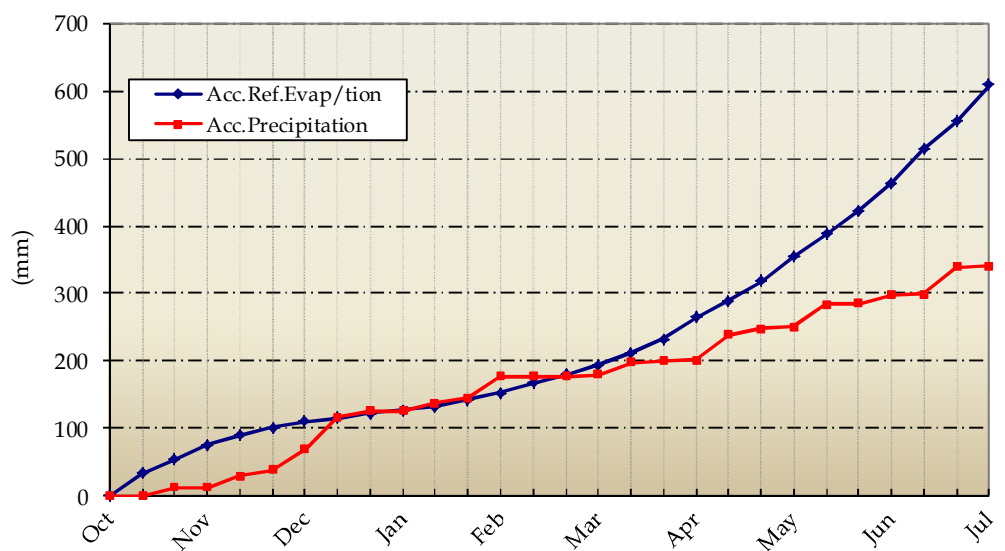


3rd 10-day period (21-30/06/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.0	34.4	33.4	35.2	33.4	32.6	32.0	35.4	31.0	31.2	33.3	35.3	33.1
	Min	18.4	17.8	19.8	19.0	18.4	21.7	19.2	17.6	19.4	20.0	19.1	19.6	18.2
Relative Humidity	Max	96	92	86	88	94	99	99	98	81	96	93	88	79
	Min	34	25	34	29	31	31	35	26	36	36	32	30	28
Soil Temperature at 10 cm	06 UTC	24.4	26.2	27.0	27.4	27.8	28.2	28.0	27.6	28.2	27.8	27.3	26.7	25.9
	12 UTC	25.6	27.2	27.6	27.8	27.6	26.2	26.8	28.8	29.0	28.6	27.5	28.6	28.0
Sunshine Duration		9.0	10.8	10.1	7.7	6.4	5.7	10.3	10.5	5.6	8.9	8.5	10.2	10.2
Precipitation							1.8			0.0		1.8	2.6	7.1
Evaporation		13.8	12.2	11.0	7.2	-	-	-	-	-	-	-	117.2	107.3
Growing Degrees	5	21.2	21.1	21.6	22.1	20.9	22.2	20.6	21.5	20.2	20.6	212.0	224.7	188.4
	10	16.2	16.1	16.6	17.1	15.9	17.2	15.6	16.5	15.2	15.6	162.0	174.7	142.9

3rd 10-day period (21-30/06/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	54.6	63.9	61.4
Precipitation - Reference Evapotranspiration	-52.8	-61.3	-54.3
Number of Rainy Days	1.0	2.0	1.2
Number of Dry Days	7.0	6.0	-

The missing info in the tables are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



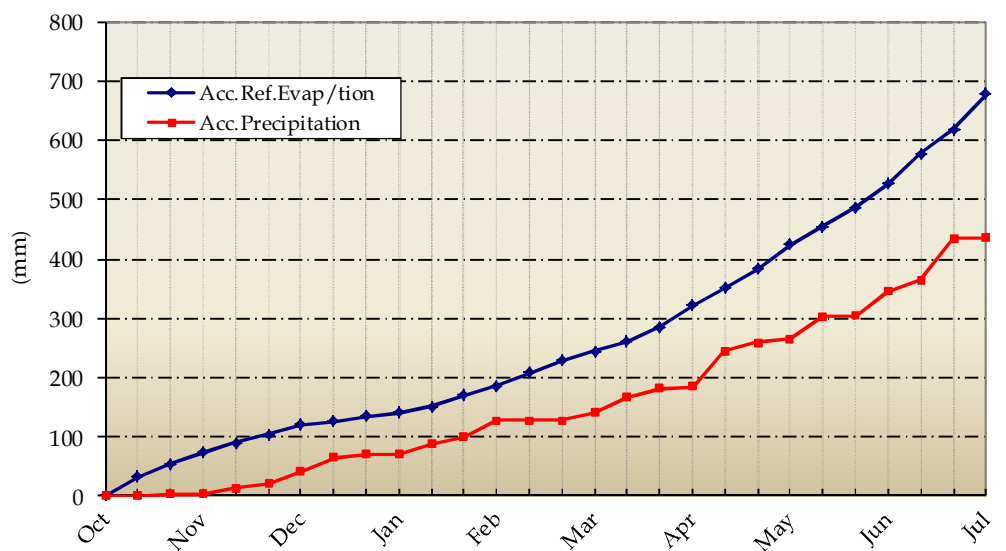
Mikra

3rd 10-day period (21-30/06/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.7	33.1	31.5	33.1	31.4	31.8	31.2	33.2	28.0	29.1	31.3	33.2	31.4
	Min	18.6	20.0	20.8	20.4	18.7	22.6	20.0	19.6	20.8	18.4	20.0	20.9	19.9
Relative Humidity	Max	99	90	90	98	97	91	93	89	99	100	95	87	75
	Min	40	37	44	34	39	38	39	31	47	45	39	37	34
Soil Temperature at 10 cm	06 UTC	23.0	23.0	24.4	24.4	24.0	24.6	24.6	24.8	24.6	23.4	24.1	25.3	26.4
	12 UTC	26.4	27.0	27.6	29.6	29.4	28.5	28.0	27.8	24.8	26.8	27.6	27.8	31.8
Sunshine Duration		13.0	13.0	13.3	9.0	10.8	9.6	13.3	12.1	8.3	12.8	11.5	11.8	11.0
Precipitation										0.7		0.7	0.9	6.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	104.2
Growing Degrees	5	19.7	21.6	21.2	21.8	20.1	22.2	20.6	21.4	19.4	18.8	206.5	220.9	187.5
	10	14.7	16.6	16.2	16.8	15.1	17.2	15.6	16.4	14.4	13.8	156.5	170.9	142.2

3rd 10-day period (21-30/06/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	60.4	65.5	57.4
Precipitation - Reference Evapotranspiration	-59.7	-64.6	-50.7
Number of Rainy Days	1.0	3.0	1.2
Number of Dry Days	10.0	4.0	-

The missing info in the tables are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

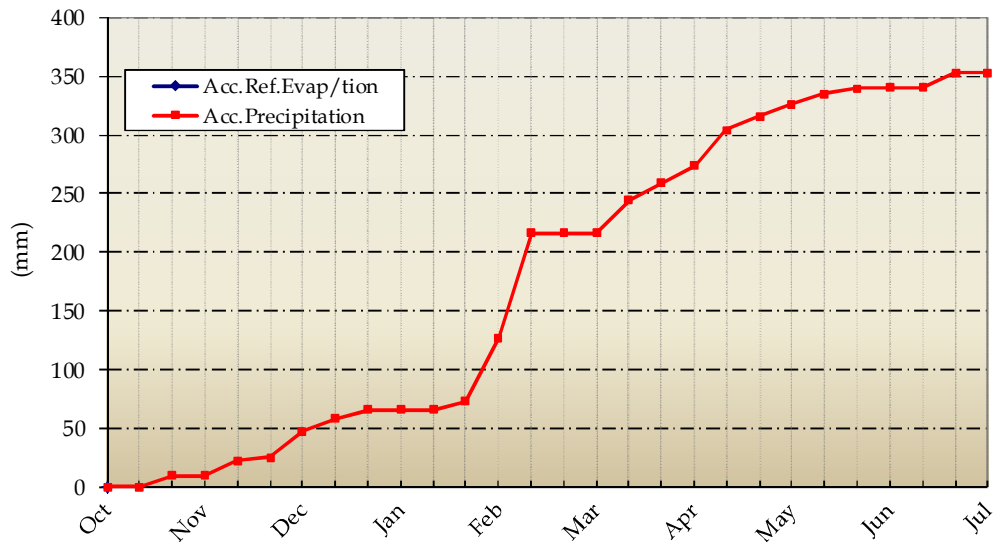


3rd 10-day period (21-30/06/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.1	33.0	32.3	33.9	33.8	31.7	30.8	33.8	30.6	29.8	32.1	33.7	31.7
	Min	14.8	15.9	18.8	17.3	18.0	20.6	18.6	15.6	21.6	20.8	18.2	19.5	18.6
Relative Humidity	Max	80	70	67	65	63	69	74	77	73	76	71	73	74
	Min	24	23	27	16	22	28	31	20	32	28	25	24	29
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		13.2	13.5	11.9	12.5	9.2	9.3	13.3	13.3	12.2	8.8	11.7	13.0	10.9
Precipitation													1.3	2.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	88.8
Growing Degrees	5	18.0	19.5	20.6	20.6	20.9	21.2	19.7	19.7	21.1	20.3	201.4	216.4	176.2
	10	13.0	14.5	15.6	15.6	15.9	16.2	14.7	14.7	16.1	15.3	151.4	166.4	132.7

3rd 10-day period (21-30/06/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	0.0	1.0	0.7
Number of Dry Days	12.0	14.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

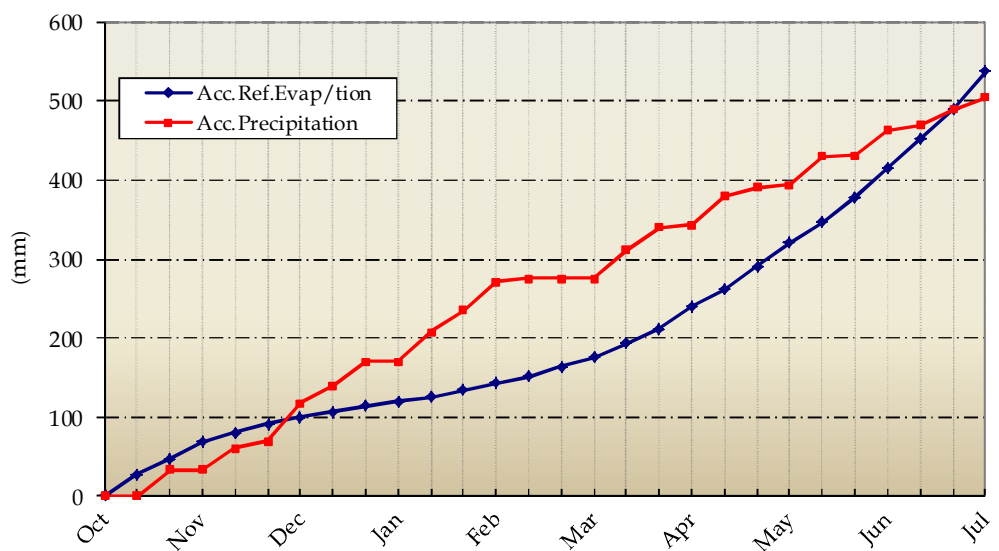


3rd 10-day period (21-30/06/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.8	30.6	31.4	32.1	31.5	29.8	26.6	28.9	32.1	28.1	30.2	33.1	30.2
	Min	11.9	13.9	13.8	14.2	13.6	13.5	14.3	13.7	12.9	14.3	13.6	14.7	13.3
Relative Humidity	Max	97	91	93	93	99	99	99	98	95	97	96	90	84
	Min	27	27	28	26	30	32	45	34	20	38	31	21	29
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	24.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	28.9
Sunshine Duration		12.3	13.2	12.7	11.5	8.0	7.4	5.1	10.7	10.4	9.7	10.1	12.4	10.6
Precipitation						14.1	0.4	1.5				16.0	5.8	3.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	61.1
Growing Degrees	5	16.4	17.3	17.6	18.2	17.6	16.7	15.5	16.3	17.5	16.2	169.0	188.7	143.4
	10	11.4	12.3	12.6	13.2	12.6	11.7	10.5	11.3	12.5	11.2	119.0	138.7	100.6

3rd 10-day period (21-30/06/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	47.8	56.2	32.6
Precipitation - Reference Evapotranspiration	-31.8	-50.4	-28.7
Number of Rainy Days	3.0	1.0	1.1
Number of Dry Days	6.0	9.0	-

The missing info in the tables are due to the absence of data.

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.

Past Years Mean Values 1991-2020 (Evaporation, Reference Evapotranspiration, Max and Min Relative Humidity 2005-2020)

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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