



# AGROMETEOROLOGICAL BULLETIN

*July 2024*  
*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



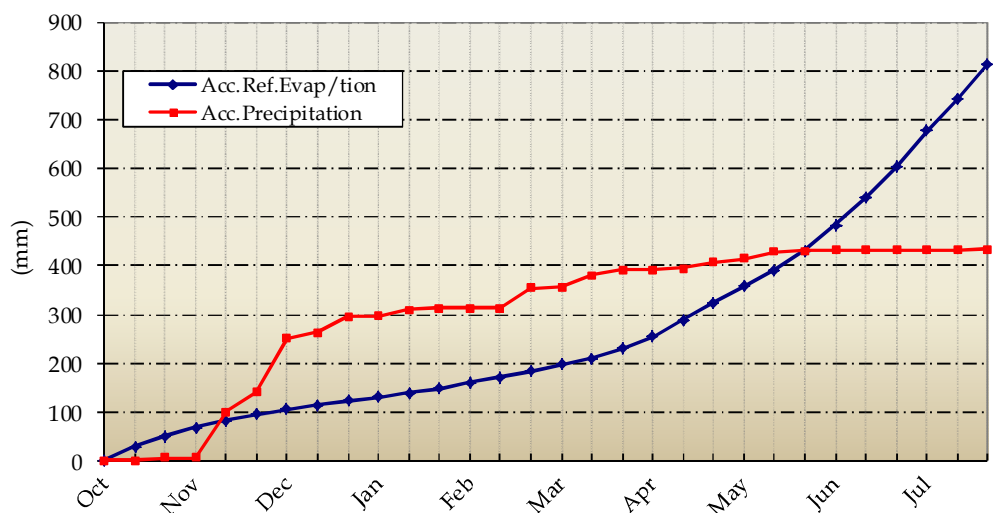
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2nd 10-day period (11-20/07/2024)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	37.0	38.0	37.6	37.8	38.4	38.0	39.4	41.4	39.2	37.8	38.5	34.6	31.3
	Min	25.6	20.4	21.2	21.6	16.8	20.0	23.0	22.2	24.6	25.6	22.1	21.8	19.0
Relative Humidity	Max	57	65	69	66	60	67	59	70	71	65	65	74	76
	Min	27	23	24	23	17	21	20	23	27	27	23	35	34
Soil Temperature at 10 cm	06 UTC	32.6	30.4	31.0	31.0	30.4	31.0	31.4	31.6	33.0	30.4	31.3	28.0	26.0
	12 UTC	35.0	35.2	34.4	35.4	34.6	35.0	36.4	36.6	37.0	34.6	35.4	31.9	29.5
Sunshine Duration		6.9	13.5	10.5	13.7	13.2	12.3	12.8	13.4	10.1	13.3	12.0	12.7	11.8
Precipitation										1.2		1.2		4.0
Evaporation		9.8	13.4	10.8	14.8	14.0	12.4	8.6	19.6	8.6	9.0	121.0	101.2	93.2
Growing Degrees	5	26.3	24.2	24.4	24.7	22.6	24.0	26.2	26.8	26.9	26.7	252.8	232.1	185.0
	10	21.3	19.2	19.4	19.7	17.6	19.0	21.2	21.8	21.9	21.7	202.8	182.1	139.2

2nd 10-day period (11-20/07/2024)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	73.1	63.8	55.3
Precipitation - Reference Evapotranspiration	-71.9	-63.8	-51.3
Number of Rainy Days	1.0	0.0	0.6
Number of Dry Days	14.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

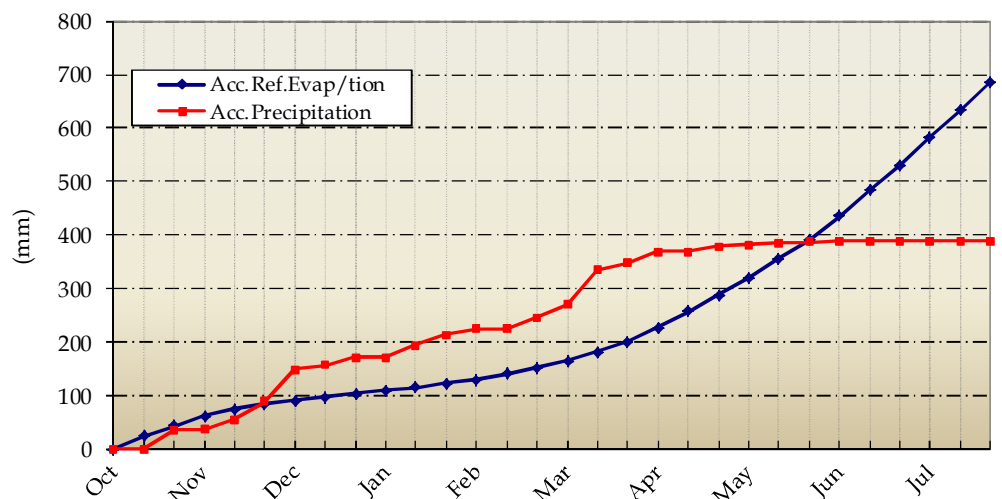


2nd 10-day period (11-20/07/2024)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	37.1	35.4	35.1	33.2	34.8	37.0	37.5	38.6	39.4	37.8	36.6	35.5	30.5
	Min	20.4	21.9	22.5	22.2	22.7	21.0	19.7	21.7	20.8	21.5	21.4	20.3	18.8
Relative Humidity	Max	83	85	83	90	92	89	84	81	88	81	86	91	88
	Min	25	32	36	43	42	24	23	27	21	33	31	36	39
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	28.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	33.5
Sunshine Duration		12.7	12.7	12.6	12.6	13.1	13.1	13.2	13.1	13.2	12.2	12.8	12.6	12.4
Precipitation														0.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	90.7
Growing Degrees	5	23.8	23.7	23.8	22.7	23.8	24.0	23.6	25.2	25.1	24.7	240.2	229.0	163.5
	10	18.8	18.7	18.8	17.7	18.8	19.0	18.6	20.2	20.1	19.7	190.2	179.0	122.0

2nd 10-day period (11-20/07/2024)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	53.9	53.0	52.8
Precipitation - Reference Evapotranspiration	-53.9	-53.0	-52.2
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	55.0	33.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



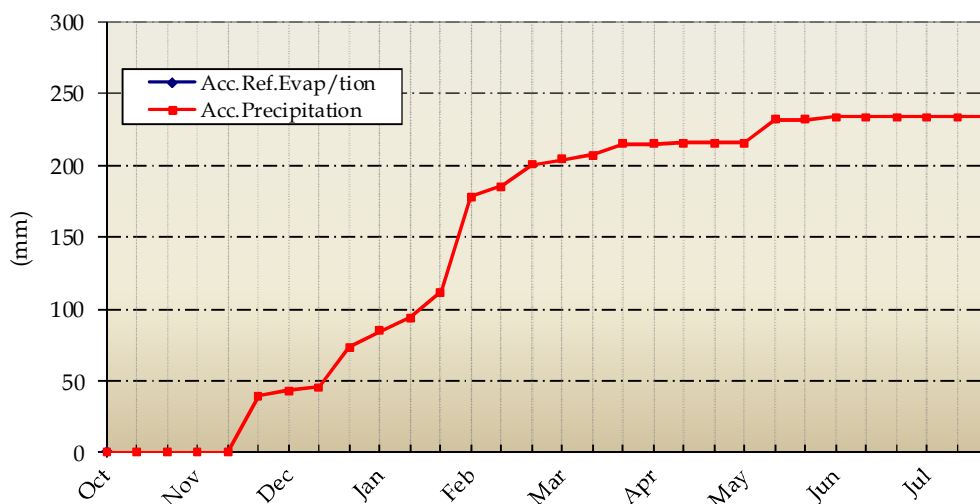
Iraklio

2nd 10-day period (11-20/07/2024)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.4	32.0	32.0	32.0	31.4	30.6	30.6	31.4	30.8	30.8	31.2	31.3	29.3
	Min	25.4	26.4	27.2	28.4	26.8	27.4	24.6	25.0	25.0	25.0	26.1	24.9	22.7
Relative Humidity	Max	73	69	63	60	56	55	82	69	76	77	68	74	77
	Min	49	45	43	39	38	43	50	47	56	61	47	50	52
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.5	12.6	12.7	12.8	12.0	12.8	12.8	12.5	12.4	12.5	12.6	12.7	12.4
Precipitation														0.2
Evaporation		10.3	10.9	8.7	13.7	11.5	11.4	2.7	14.0	10.3	5.3	98.8	88.2	73.7
Growing Degrees	5	22.9	24.2	24.6	25.2	24.1	24.0	22.6	23.2	22.9	22.9	236.6	230.8	197.5
	10	17.9	19.2	19.6	20.2	19.1	19.0	17.6	18.2	17.9	17.9	186.6	180.8	150.5

2nd 10-day period (11-20/07/2024)		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	54.0	31.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

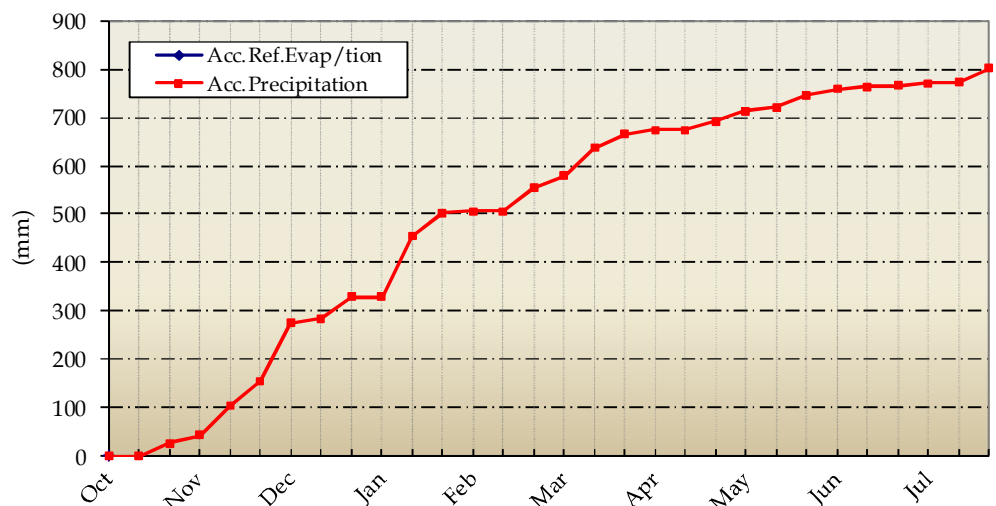


2nd 10-day period (11-20/07/2024)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.8	36.9	36.9	37.8	37.8	38.0	38.7	37.9	36.4	36.0	37.3	36.9	31.2
	Min	17.7	17.2	18.4	18.7	17.7	18.7	17.8	19.0	19.1	17.1	18.1	16.3	15.5
Relative Humidity	Max	100	100	100	100	100	95	100	94	91	65	94	98	88
	Min	26	29	28	29	22	23	19	23	27	27	25	25	35
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
Sunshine Duration		7.1	8.2	8.8	10.0	11.9	10.8	12.2	7.1	7.1	11.7	9.5	12.5	11.0
Precipitation		13.0	2.3		12.5				0.0			27.8		8.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	22.3	22.1	22.7	23.3	22.8	23.4	23.3	23.5	22.8	21.6	227.3	215.7	150.6
	10	17.3	17.1	17.7	18.3	17.8	18.4	18.3	18.5	17.8	16.6	177.3	165.7	109.8

2nd 10-day period (11-20/07/2024)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	41.8
Precipitation - Reference Evapotranspiration	-	-	-33.4
Number of Rainy Days	3.0	0.0	1.2
Number of Dry Days	6.0	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

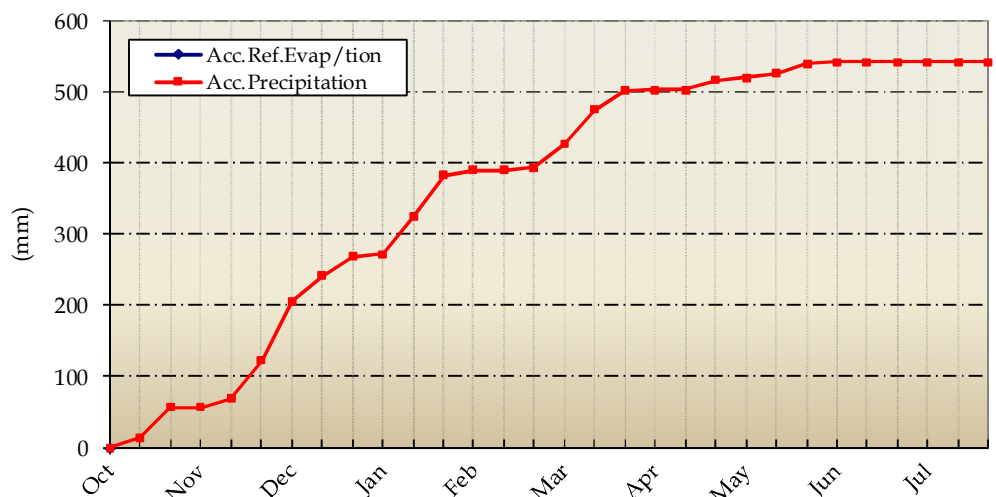


2nd 10-day period (11-20/07/2024)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	40.8	37.5	37.7	36.9	35.6	40.1	40.1	42.6	41.9	39.1	39.2	37.8	31.7
	Min	23.6	20.2	20.1	23.4	21.4	20.0	22.0	23.0	23.6	23.2	22.0	21.6	18.7
Relative Humidity	Max	71	88	70	91	94	88	76	78	91	92	84	77	85
	Min	19	24	24	35	34	20	18	15	14	23	23	26	34
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	29.0
Sunshine Duration		11.3	10.8	12.5	12.1	9.6	12.6	12.6	12.6	12.5	12.0	11.9	12.5	11.8
Precipitation														4.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	76.4
Growing Degrees	5	27.2	23.9	23.9	25.2	23.5	25.1	26.1	27.8	27.8	26.2	256.4	247.1	184.9
	10	22.2	18.9	18.9	20.2	18.5	20.1	21.1	22.8	22.8	21.2	206.4	197.1	139.2

2nd 10-day period (11-20/07/2024)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	75.9	-	53.0
Precipitation - Reference Evapotranspiration	-75.9	-	-48.8
Number of Rainy Days	0.0	0.0	0.5
Number of Dry Days	51.0	32.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

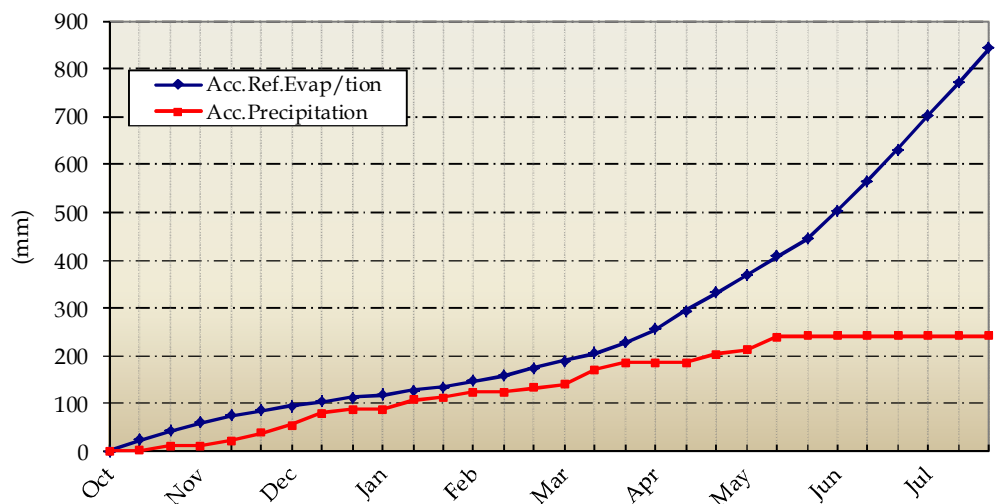


Larisa

2nd 10-day period (11-20/07/2024)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	39.2	39.2	39.5	39.0	39.0	39.0	39.0	40.0	40.0	37.8	39.2	38.4	33.3
	Min	23.0	21.6	20.8	22.6	21.6	20.4	20.6	22.0	23.6	23.2	21.9	21.2	18.9
Relative Humidity	Max	59	62	57	62	63	66	65	62	50	67	61	70	76
	Min	18	20	19	20	19	17	15	17	18	24	19	23	26
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	30.8	27.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	32.6	29.5
Sunshine Duration		11.8	11.7	12.2	11.0	11.9	12.4	11.9	12.0	8.8	12.0	11.6	10.4	11.0
Precipitation														4.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	114.7
Growing Degrees	5	26.1	25.4	25.2	25.8	25.3	24.7	24.8	26.0	26.8	25.5	255.6	248.0	190.4
	10	21.1	20.4	20.2	20.8	20.3	19.7	19.8	21.0	21.8	20.5	205.6	198.0	145.6

2nd 10-day period (11-20/07/2024)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	73.8	66.7	73.4
Precipitation - Reference Evapotranspiration	-73.8	-66.7	-69.4
Number of Rainy Days	0.0	0.0	1.0
Number of Dry Days	16.0	24.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



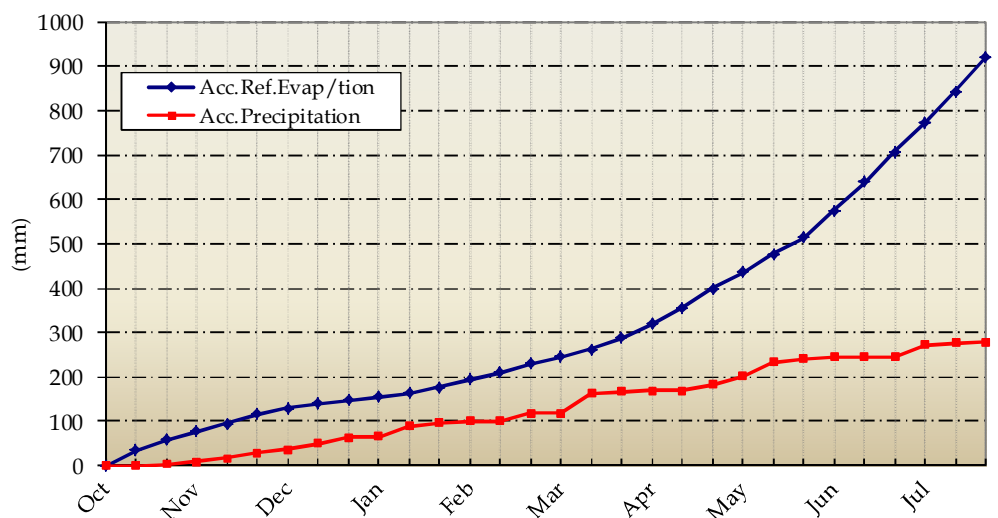
Mikra

2nd 10-day period (11-20/07/2024)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	37.4	37.2	37.9	37.3	36.0	37.5	38.2	39.0	38.3	36.4	37.5	36.2	32.1
	Min	26.8	23.2	24.2	23.6	23.9	22.5	24.4	26.0	26.4	24.9	24.6	22.3	20.7
Relative Humidity	Max	77	82	60	63	76	64	60	69	70	71	69	75	73
	Min	23	23	23	27	32	22	23	23	22	30	25	33	33
Soil Temperature at 10 cm	06 UTC	29.0	28.6	28.6	29.2	28.6	29.0	29.4	30.4	30.6	30.4	29.4	27.1	27.7
	12 UTC	32.2	32.0	33.0	33.4	33.6	32.8	33.8	34.4	34.6	34.4	33.4	30.7	32.8
Sunshine Duration		12.0	13.3	13.0	13.0	13.0	13.5	13.3	12.3	10.7	13.0	12.7	12.8	11.6
Precipitation			1.0							0.2		1.2		4.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	105.4
Growing Degrees	5	27.1	25.2	26.1	25.5	25.0	25.0	26.3	27.5	27.4	25.7	260.6	242.6	193.9
	10	22.1	20.2	21.1	20.5	20.0	20.0	21.3	22.5	22.4	20.7	210.6	192.6	148.8

2nd 10-day period (11-20/07/2024)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	77.7	69.1	51.4
Precipitation - Reference Evapotranspiration	-76.5	-69.1	-46.5
Number of Rainy Days	2.0	0.0	0.9
Number of Dry Days	7.0	15.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





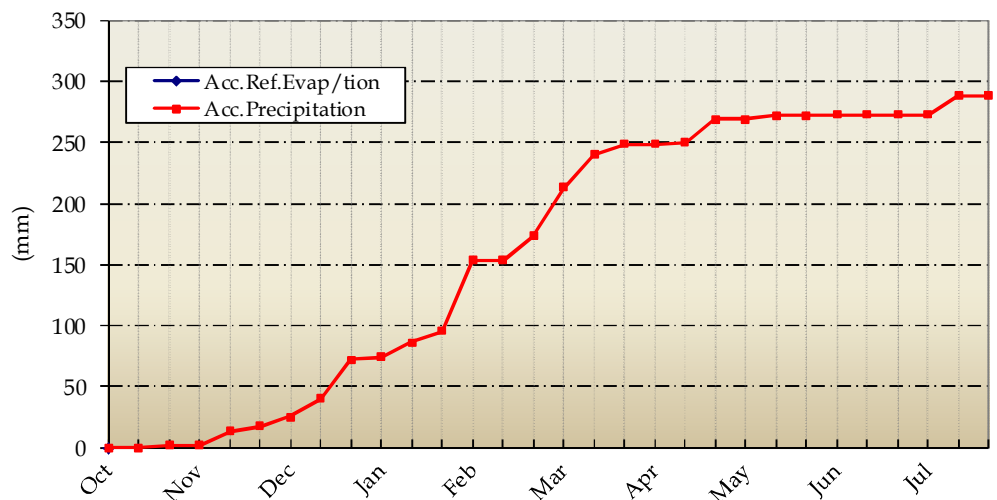
Tanagra

2nd 10-day period (11-20/07/2024)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.8	35.4	36.8	36.0	35.2	35.4	36.0	37.3	36.2	35.2	35.9	36.9	32.1
	Min	22.6	22.7	23.4	23.8	21.4	23.1	25.0	24.9	25.2	27.4	24.0	21.7	19.6
Relative Humidity	Max	50	43	41	43	45	35	39	44	57	54	45	56	70
	Min	16	16	16	14	12	14	19	15	18	21	16	18	27
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		13.2	13.2	13.4	13.1	13.6	13.5	13.2	13.3	13.3	13.4	13.3	12.9	12.1
Precipitation														4.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	93.6
Growing Degrees	5	24.2	24.1	25.1	24.9	23.3	24.3	25.5	26.1	25.7	26.3	249.4	242.7	180.5
	10	19.2	19.1	20.1	19.9	18.3	19.3	20.5	21.1	20.7	21.3	199.4	192.7	137.4

2nd 10-day period (11-20/07/2024)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	16.0	32.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

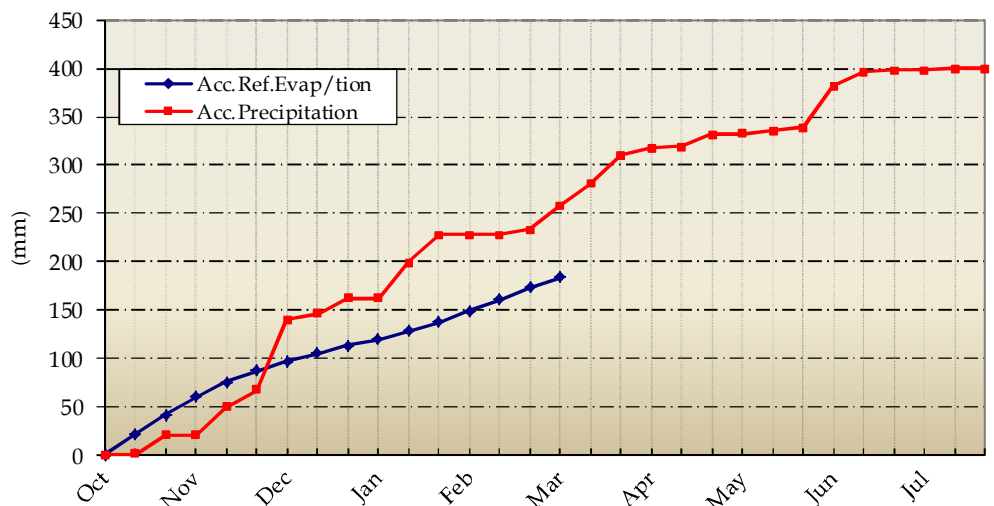


2nd 10-day period (11-20/07/2024)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.2	35.0	35.2	35.6	35.9	35.7	34.9	35.6	34.7	35.0	35.3	35.3	31.0
	Min	18.9	16.5	16.0	16.8	16.4	19.4	18.2	24.2	23.7	20.0	19.0	16.8	14.4
Relative Humidity	Max	58	68	71	78	82	42	54	43	31	67	59	83	83
	Min	17	17	16	19	14	15	18	13	18	20	17	17	27
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	29.8
Sunshine Duration		12.9	7.9	10.4	9.9	13.0	13.1	13.0	13.4	13.5	10.1	11.7	13.0	10.9
Precipitation														5.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	63.7
Growing Degrees	5	22.1	20.8	20.6	21.2	21.2	22.6	21.6	24.9	24.2	22.5	221.5	210.5	144.8
	10	17.1	15.8	15.6	16.2	16.2	17.6	16.6	19.9	19.2	17.5	171.5	160.5	103.8

2nd 10-day period (11-20/07/2024)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	68.1	61.4	39.4
Precipitation - Reference Evapotranspiration	-68.1	-61.4	-33.8
Number of Rainy Days	0.0	0.0	1.1
Number of Dry Days	16.0	15.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





## ◆ 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)

### Mesurements 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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