



# AGROMETEOROLOGICAL BULLETIN

*June 2021*  
*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



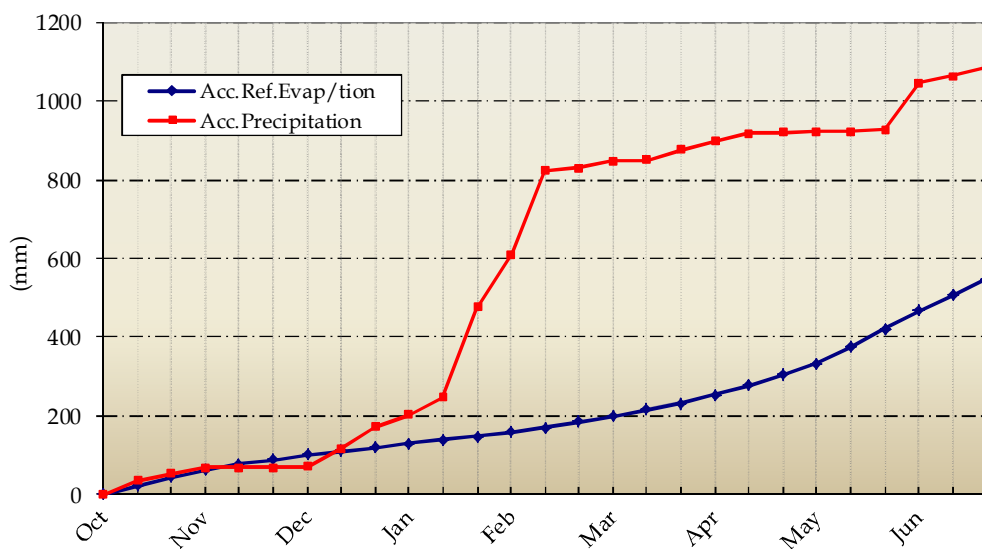
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2nd 10-day period (11-20/06/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.8	26.0	25.2	23.4	21.6	25.2	27.4	25.4	27.4	26.8	25.6	27.5	27.5
	Min	17.0	14.0	14.0	16.0	13.0	15.6	18.4	16.6	19.0	17.0	16.1	17.4	15.2
Relative Humidity	Max	89	91	92	80	98	94	83	94	87	85	89	86	-
	Min	41	42	50	45	53	51	51	54	48	52	49	63	-
Soil Temperature at 10 cm	06 UTC	21.6	21.8	21.5	20.8	20.0	19.6	20.6	22.0	22.0	22.3	21.2	21.8	22.6
	12 UTC	23.5	23.2	23.8	22.2	21.4	21.6	23.0	24.0	24.6	24.0	23.1	25.1	27.3
Sunshine Duration		7.2	7.8	10.2	5.3	3.5	5.6	9.6	5.5	10.1	9.7	7.4	10.7	10.3
Precipitation				2.1	1.1	2.1	11.4		3.9	1.4	0.1	22.1	0.0	11.6
Evaporation		5.3	5.0	4.1	6.1	4.4	1.6	7.6	4.8	5.6	4.7	49.2	66.3	79.3
Growing Degrees	5	17.4	15.0	14.6	14.7	12.3	15.4	17.9	16.0	18.2	16.9	158.4	174.5	163.4
	10	12.4	10.0	9.6	9.7	7.3	10.4	12.9	11.0	13.2	11.9	108.4	124.5	113.4

2nd 10-day period (11-20/06/2021)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	40.3	47.9
Precipitation - Reference Evapotranspiration	-18.2	-47.9
Number of Rainy Days	7.0	0.0
Number of Dry Days	4.0	19.0

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

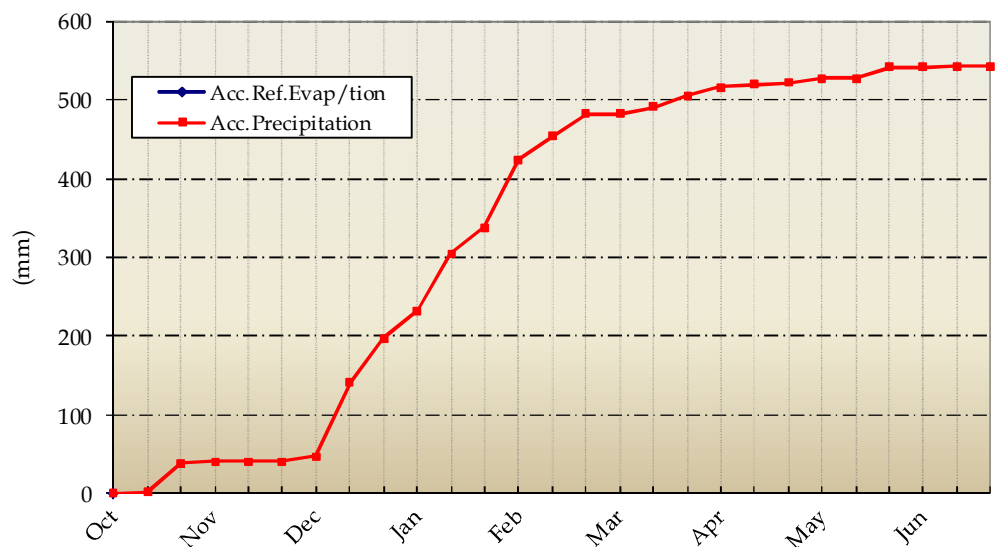


2nd 10-day period (11-20/06/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.5	27.8	27.2	27.2	26.4	27.8	27.8	28.2	29.6	31.8	28.2	28.2	28.1
	Min	16.2	16.2	15.3	17.8	14.3	13.8	15.1	16.2	15.3	24.0	16.4	16.1	16.4
Relative Humidity	Max	94	93	91	92	92	93	91	95	91	94	93	93	-
	Min	40	49	51	42	32	27	39	39	45	37	40	42	-
Soil Temperature at 10 cm	06 UTC	25.6	26.0	26.0	26.4	25.8	25.2	25.8	26.4	26.4	26.6	26.0	25.4	24.8
	12 UTC	28.6	28.4	28.8	29.0	28.6	28.6	28.8	28.4	29.6	30.0	28.9	28.0	29.7
Sunshine Duration		12.9	13.2	13.0	13.3	11.7	13.2	12.8	13.4	13.2	13.3	13.0	12.9	11.5
Precipitation														2.1
Evaporation		8.3	8.6	8.0	6.6	9.0	9.3	8.8	13.0	9.4	9.8	90.8	87.5	71.4
Growing Degrees	5	17.4	17.0	16.3	17.5	15.4	15.8	16.5	17.2	17.5	22.9	173.3	171.4	172.2
	10	12.4	12.0	11.3	12.5	10.4	10.8	11.5	12.2	12.5	17.9	123.3	121.4	122.2

2nd 10-day period (11-20/06/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	49.7	-	50.2
Precipitation - Reference Evapotranspiration	-49.7	-	-48.1
Number of Rainy Days	0.0	0.0	0.4
Number of Dry Days	10.0	13.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

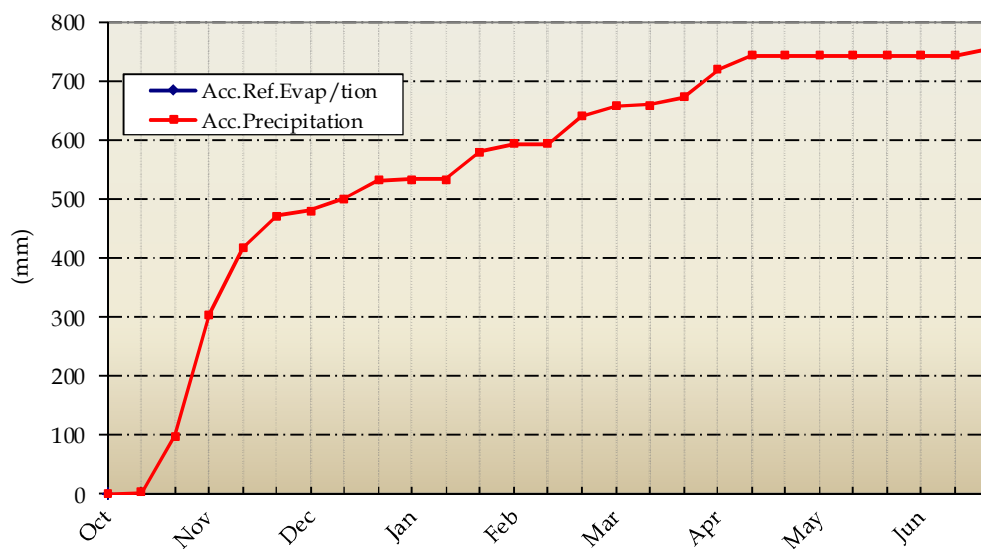


2nd 10-day period (11-20/06/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.0	26.0	25.4	25.4	24.0	25.0	25.4	25.2	28.4	27.6	25.8	27.8	27.5
	Min	17.6	18.2	18.4	17.8	18.2	16.2	16.4	16.8	18.0	19.4	17.7	19.3	19.4
Relative Humidity	Max	88	90	92	90	94	96	96	94	86	83	91	72	-
	Min	62	61	73	66	63	52	67	68	45	62	62	39	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		13.0	13.0	10.6	8.7	5.1	13.2	13.1	13.1	13.0	13.1	11.6	12.4	12.0
Precipitation						9.1	0.7					9.8		0.2
Evaporation		4.3	5.2	3.7	4.8	3.7	5.0	4.3	5.4	6.1	4.4	46.9	70.3	83.8
Growing Degrees	5	16.8	17.1	16.9	16.6	16.1	15.6	15.9	16.0	18.2	18.5	167.7	185.3	184.4
	10	11.8	12.1	11.9	11.6	11.1	10.6	10.9	11.0	13.2	13.5	117.7	135.3	134.4

2nd 10-day period (11-20/06/2021)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	0.2
Number of Rainy Days	2.0	0.0
Number of Dry Days	15.0	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

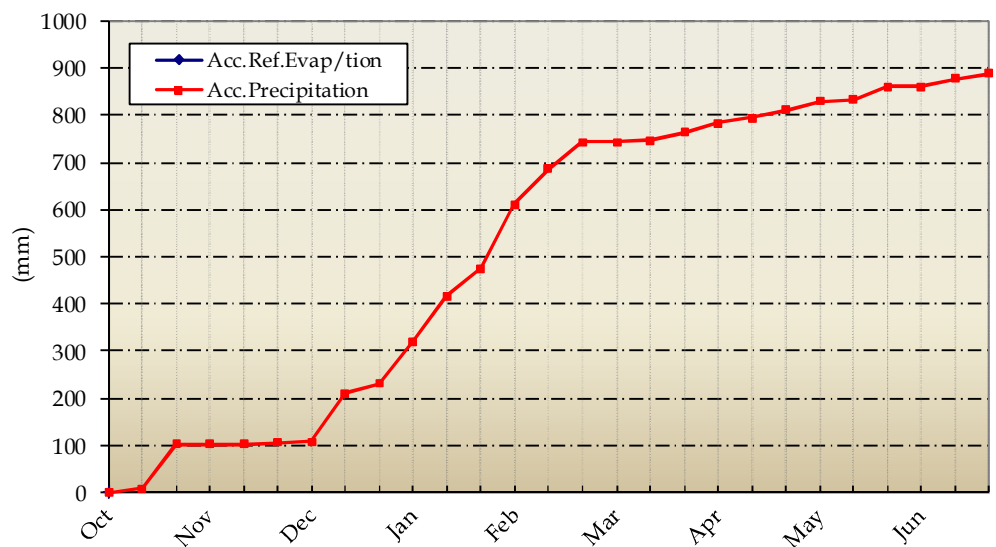


2nd 10-day period (11-20/06/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.0	25.6	28.6	24.6	23.4	28.1	27.2	29.7	30.7	31.7	26.8	26.2	28.0
	Min	12.2	10.6	9.4	13.6	10.7	8.0	12.7	10.3	13.1	14.2	11.5	10.5	13.0
Relative Humidity	Max	100	100	100	95	49	95	100	100	100	99	94	94	-
	Min	40	51	37	30	31	35	46	38	34	36	38	44	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
Sunshine Duration		5.4	4.9	11.1	11.5	11.2	12.3	4.2	8.3	11.1	12.6	9.3	11.3	9.8
Precipitation		1.3					0.6	6.9	2.0	0.4	0.0	11.2	3.0	14.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	70.5
Growing Degrees	5	10.1	13.1	14.0	14.1	12.1	13.1	15.0	15.0	16.9	18.0	141.2	133.4	155.2
	10	5.1	8.1	9.0	9.1	7.1	8.1	10.0	10.0	11.9	13.0	91.2	83.4	105.2

2nd 10-day period (11-20/06/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	46.5
Precipitation - Reference Evapotranspiration	-	-	-32.4
Number of Rainy Days	5.0	2.0	2.0
Number of Dry Days	0.0	0.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

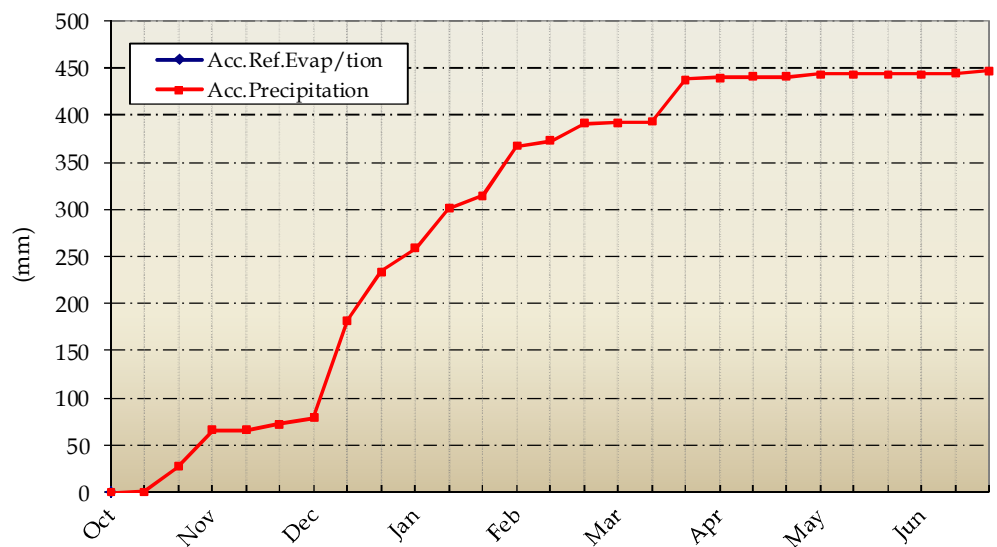


2nd 10-day period (11-20/06/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.0	27.8	28.1	26.4	23.6	26.7	25.6	28.8	32.1	29.3	27.5	30.1	29.3
	Min	16.5	15.0	15.0	18.2	16.6	11.6	13.1	12.8	18.2	20.2	15.7	15.8	15.9
Relative Humidity	Max	78	90	90	88	83	99	98	95	77	73	87	89	-
	Min	43	36	42	52	49	42	46	27	34	43	41	27	-
Soil Temperature at 10 cm	06 UTC	24.5	22.8	24.0	29.5	24.6	21.2	23.0	24.0	25.0	26.0	24.5	24.8	23.0
	12 UTC	29.0	28.0	-	29.6	22.6	24.0	24.4	25.0	30.6	31.4	27.2	28.0	27.4
Sunshine Duration		7.6	11.5	11.1	12.2	4.8	11.9	13.4	13.3	13.3	13.6	11.3	11.1	11.0
Precipitation			0.0	0.0		2.3						2.3		3.1
Evaporation		5.2	11.0	8.0	8.0	4.0	3.0	12.0	10.8	0.0	5.0	67.0	89.0	80.7
Growing Degrees	5	16.8	16.4	16.6	17.3	15.1	14.2	14.4	15.8	20.2	19.8	166.3	179.7	175.9
	10	11.8	11.4	11.6	12.3	10.1	9.2	9.4	10.8	15.2	14.8	116.3	129.7	125.9

2nd 10-day period (11-20/06/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	54.6
Precipitation - Reference Evapotranspiration	-	-	-51.5
Number of Rainy Days	1.0	0.0	0.9
Number of Dry Days	5.0	20.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





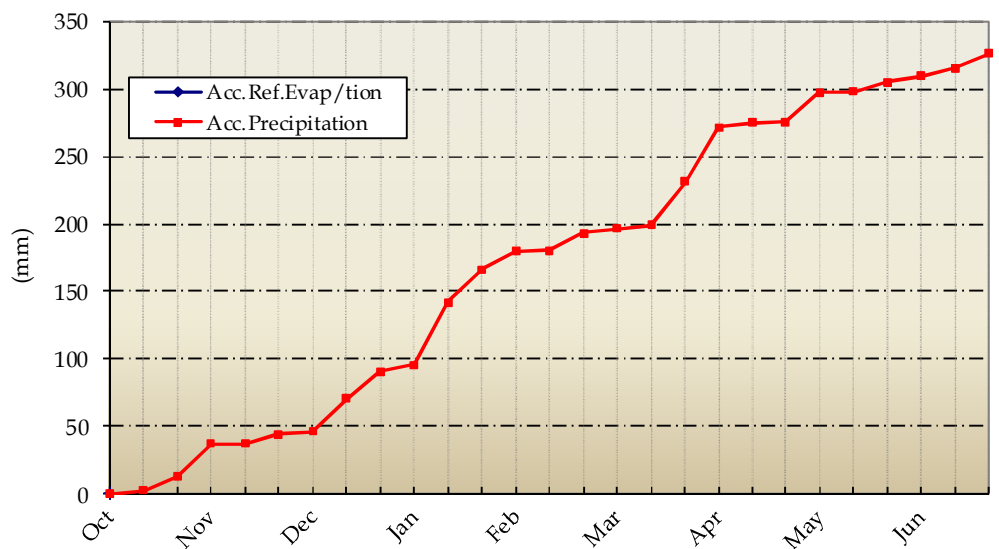
Larisa

2nd 10-day period (11-20/06/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.6	27.4	31.2	27.4	26.6	32.6	31.2	32.0	32.2	33.0	30.3	32.1	31.7
	Min	15.8	12.6	12.4	16.0	11.8	12.2	18.0	15.0	17.2	16.0	14.7	17.3	15.7
Relative Humidity	Max	96	98	97	86	92	87	97	99	91	93	94	68	-
	Min	35	35	28	24	30	25	33	33	31	18	29	23	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	23.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	26.6
Sunshine Duration		3.4	6.4	9.2	8.5	8.1	8.5	4.8	9.8	7.9	9.7	7.6	10.0	10.5
Precipitation		4.1		0.0		0.1		6.2	0.0	0.8		11.2	4.6	6.2
Evaporation		2.2	7.8	6.8	10.3	8.1	6.8	5.3	6.8	8.1	7.0	69.2	101.1	85.8
Growing Degrees	5	17.7	15.0	16.8	16.7	14.2	17.4	19.6	18.5	19.7	19.5	175.1	196.9	186.8
	10	12.7	10.0	11.8	11.7	9.2	12.4	14.6	13.5	14.7	14.5	125.1	146.9	136.8

2nd 10-day period (11-20/06/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	46.9	58.4	58.5
Precipitation - Reference Evapotranspiration	-35.7	-53.8	-52.3
Number of Rainy Days	4.0	3.0	1.7
Number of Dry Days	1.0	4.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



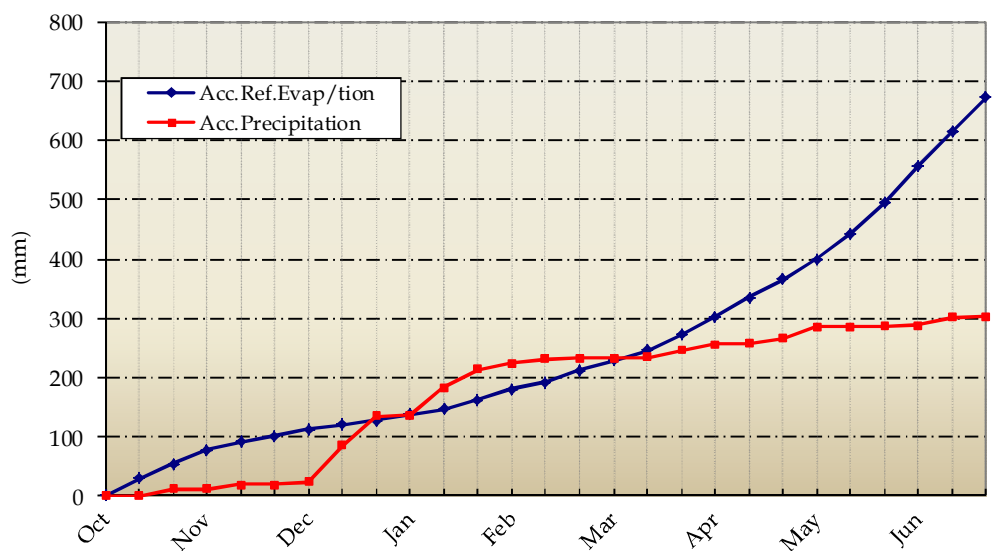
Mikra

2nd 10-day period (11-20/06/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.4	28.0	29.4	26.2	25.9	31.3	31.4	31.2	31.4	30.6	29.4	30.3	29.7
	Min	17.5	16.7	14.8	17.6	15.9	19.9	18.8	17.0	19.0	18.6	17.6	18.6	17.0
Relative Humidity	Max	92	94	94	75	63	81	83	90	85	88	84	80	-
	Min	41	40	40	27	31	44	38	38	42	44	38	34	-
Soil Temperature at 10 cm	06 UTC	22.6	22.4	22.2	21.2	21.6	22.8	24.0	24.4	25.4	25.6	23.2	23.7	24.4
	12 UTC	25.2	26.0	25.4	25.2	24.8	26.2	27.0	27.0	27.0	28.0	26.2	27.5	29.1
Sunshine Duration		4.2	9.4	8.9	11.9	11.9	10.7	9.7	11.5	8.7	11.9	9.9	11.2	10.3
Precipitation		0.2	0.5	0.0	0.3		0.3				0.1	1.4	15.8	11.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	85.4
Growing Degrees	5	18.0	17.4	17.1	16.9	15.9	20.6	20.1	19.1	20.2	19.6	184.8	194.5	183.4
	10	13.0	12.4	12.1	11.9	10.9	15.6	15.1	14.1	15.2	14.6	134.8	144.5	133.4

2nd 10-day period (11-20/06/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.4	61.8	57.4
Precipitation - Reference Evapotranspiration	-57.0	-46.0	-45.9
Number of Rainy Days	5.0	2.0	1.8
Number of Dry Days	1.0	3.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



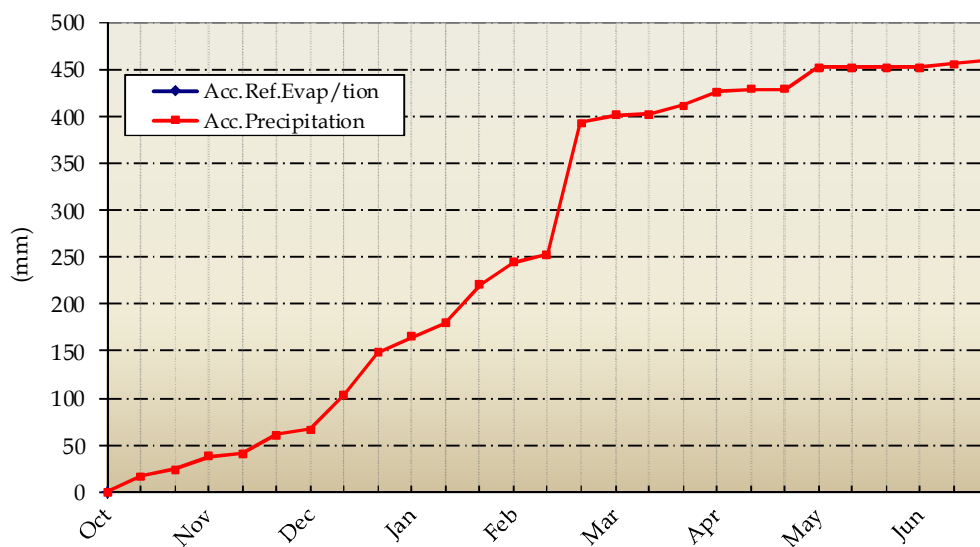


2nd 10-day period (11-20/06/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.4	27.1	30.0	25.0	23.1	29.4	31.5	31.5	32.4	32.2	29.2	31.1	30.3
	Min	15.4	15.4	14.0	15.6	13.6	13.5	15.9	16.8	18.4	18.4	15.7	17.1	15.8
Relative Humidity	Max	82	82	95	92	97	75	76	94	76	95	86	72	-
	Min	28	34	21	30	32	24	23	23	23	27	26	20	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.5	8.5	12.3	8.1	9.1	11.7	8.2	13.1	12.1	11.9	10.4	11.9	
Precipitation		0.3	0.1		1.1	3.5						5.0		2.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	17.4	16.3	17.0	15.3	13.4	16.5	18.7	19.2	20.4	20.3	174.3	191.1	
	10	12.4	11.3	12.0	10.3	8.4	11.5	13.7	14.2	15.4	15.3	124.3	141.1	

2nd 10-day period (11-20/06/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	2.8
Number of Rainy Days	4.0	0.0	1.4
Number of Dry Days	3.0	17.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

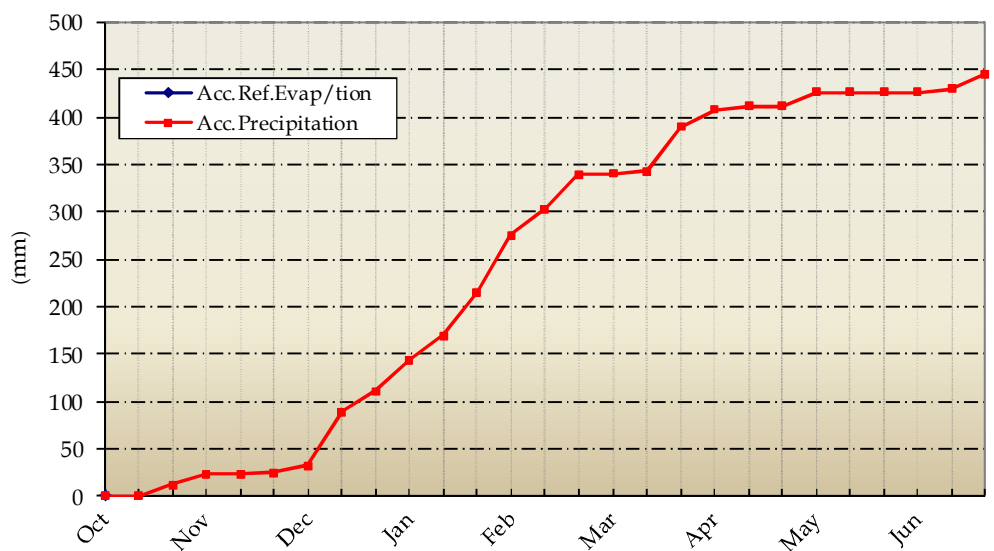


2nd 10-day period (11-20/06/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.6	-	-	22.0	20.2	26.6	27.8	26.8	28.4	30.4	26.0	27.4	28.6
	Min	11.4	10.0	-	10.6	11.6	9.4	11.6	12.2	11.6	13.9	11.4	11.5	11.6
Relative Humidity	Max	99	-	100	100	88	86	88	96	97	98	95	77	-
	Min	31	-	-	51	35	34	32	28	28	27	33	25	-
Soil Temperature at 10 cm	06 UTC	-	-	-	19.0	17.6	17.0	19.2	-	-	-	18.2	-	22.7
	12 UTC	-	-	-	24.8	-	27.2	29.8	-	-	-	27.3	-	25.9
Sunshine Duration		6.5	6.8	9.2	4.3	6.4	11.7	9.5	8.4	9.8	10.2	8.3	12.1	10.8
Precipitation		11.9	0.0	-	1.0	1.7	-	1.0	-	0.1	0.1	15.8	0.0	5.7
Evaporation		-	-	-	19.1	2.4	6.3	-	-	-	-	-	-	62.0
Growing Degrees	5	13.5	-	-	11.3	10.9	13.0	14.7	14.5	15.0	17.2	-	144.2	151.2
	10	8.5	-	-	6.3	5.9	8.0	9.7	9.5	10.0	12.2	-	94.2	101.2

2nd 10-day period (11-20/06/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	39.7	51.8	52.3
Precipitation - Reference Evapotranspiration	-23.9	-51.8	-46.6
Number of Rainy Days	6.0	0.0	1.4
Number of Dry Days	0.0	17.0	-

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<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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