



AGROMETEOROLOGICAL BULLETIN

June 2020
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



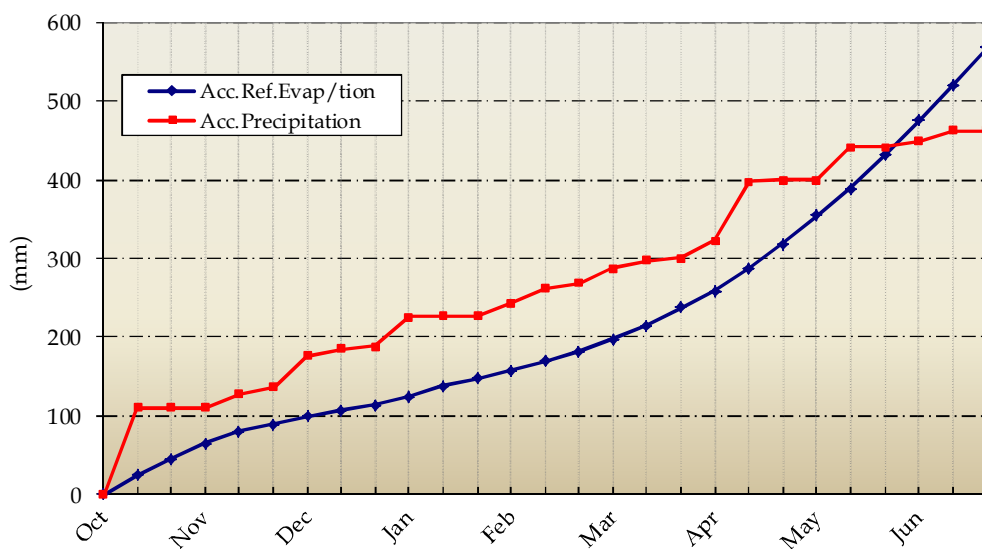
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2nd 10-day period (11-20/06/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.0	26.0	25.6	27.2	28.0	29.0	26.8	27.8	29.0	29.8	27.5	30.8	27.5
	Min	16.2	15.0	17.6	16.0	19.4	17.4	16.6	18.0	19.6	18.0	17.4	19.1	15.2
Relative Humidity	Max	90	80	88	82	90	90	83	84	91	84	86	85	-
	Min	69	55	59	60	72	67	59	73	56	64	63	43	-
Soil Temperature at 10 cm	06 UTC	21.4	20.6	21.6	20.6	22.2	22.2	22.4	22.4	22.4	22.6	21.8	23.6	22.6
	12 UTC	25.2	24.2	24.6	25.0	25.6	24.6	25.4	25.2	25.2	26.4	25.1	26.8	27.3
Sunshine Duration		13.3	12.1	6.4	10.2	10.0	13.3	9.5	9.7	9.8	12.4	10.7	10.2	10.3
Precipitation				0.0				0.0	0.0			0.0	19.8	11.6
Evaporation		7.1	7.6	5.4	4.4	8.2	8.8	5.2	5.7	6.7	7.2	66.3	66.8	79.3
Growing Degrees	5	16.1	15.5	16.6	16.6	18.7	18.2	16.7	17.9	19.3	18.9	174.5	199.7	163.4
	10	11.1	10.5	11.6	11.6	13.7	13.2	11.7	12.9	14.3	13.9	124.5	149.7	113.4

2nd 10-day period (11-20/06/2020)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	47.9	52.1
Precipitation - Reference Evapotranspiration	-47.9	-32.3
Number of Rainy Days	0.0	2.0
Number of Dry Days	19.0	1.0

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

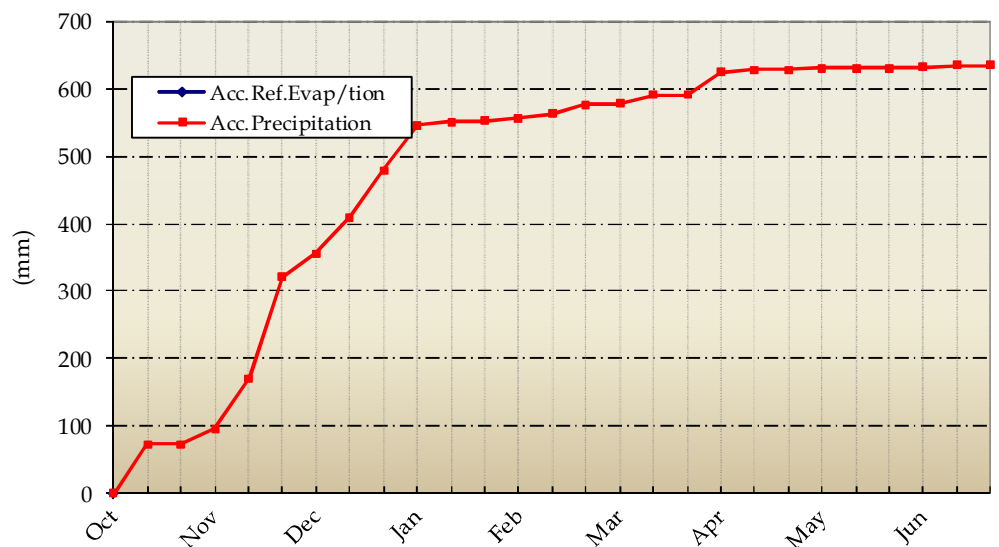


2nd 10-day period (11-20/06/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.4	26.0	26.5	28.2	30.4	30.1	26.5	28.6	28.7	29.7	28.2	32.6	28.1
	Min	15.8	13.8	17.6	15.1	15.4	17.6	15.7	16.4	16.1	17.1	16.1	18.7	16.4
Relative Humidity	Max	96	95	85	94	92	93	93	95	95	94	93	93	-
	Min	30	41	40	41	39	49	55	45	40	37	42	31	-
Soil Temperature at 10 cm	06 UTC	25.6	24.8	25.4	24.9	25.4	25.6	25.6	25.2	25.6	26.2	25.4	26.2	24.8
	12 UTC	28.0	27.6	27.8	26.3	28.4	28.2	28.4	28.4	28.6	28.6	28.0	28.5	29.7
Sunshine Duration		13.2	13.3	13.6	13.6	11.9	13.6	12.8	13.3	12.0	12.0	12.9	12.6	11.5
Precipitation													0.5	2.1
Evaporation		8.1	10.4	8.4	9.7	8.8	6.5	7.0	7.4	11.5	9.7	87.5	96.8	71.4
Growing Degrees	5	16.6	14.9	17.1	16.7	17.9	18.9	16.1	17.5	17.4	18.4	171.4	206.4	172.2
	10	11.6	9.9	12.1	11.7	12.9	13.9	11.1	12.5	12.4	13.4	121.4	156.4	122.2

2nd 10-day period (11-20/06/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	56.9	50.2
Precipitation - Reference Evapotranspiration	-	-56.4	-48.1
Number of Rainy Days	0.0	1.0	0.4
Number of Dry Days	13.0	19.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

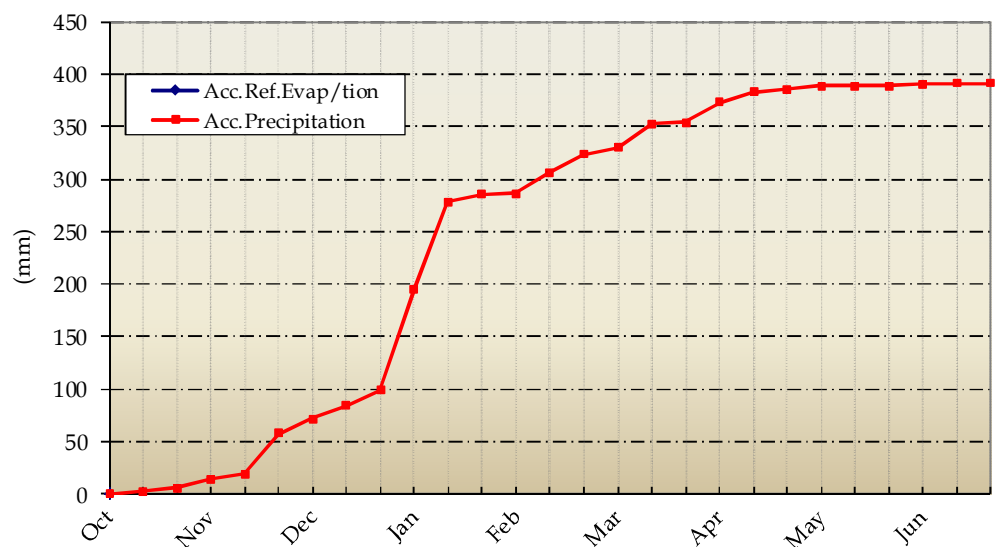


2nd 10-day period (11-20/06/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.6	25.6	24.8	27.2	29.4	29.4	26.0	27.4	27.2	32.0	27.8	28.1	27.5
	Min	21.0	17.6	16.0	17.4	21.2	21.8	18.0	20.0	20.0	20.0	19.3	21.5	19.4
Relative Humidity	Max	67	63	80	71	68	79	80	67	72	69	72	76	-
	Min	28	47	46	41	27	35	48	43	48	24	39	53	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.5	13.0	13.0	12.9	10.7	12.4	13.1	13.1	12.9	10.5	12.4	12.2	12.0
Precipitation														0.2
Evaporation		6.9	7.9	5.0	5.3	8.4	4.9	8.5	7.8	4.8	10.8	70.3	63.1	83.8
Growing Degrees	5	19.8	16.6	15.4	17.3	20.3	20.6	17.0	18.7	18.6	21.0	185.3	198.0	184.4
	10	14.8	11.6	10.4	12.3	15.3	15.6	12.0	13.7	13.6	16.0	135.3	148.0	134.4

2nd 10-day period (11-20/06/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	58.9	-
Precipitation - Reference Evapotranspiration	-	-58.9	0.2
Number of Rainy Days	0.0	0.0	0.2
Number of Dry Days	18.0	36.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

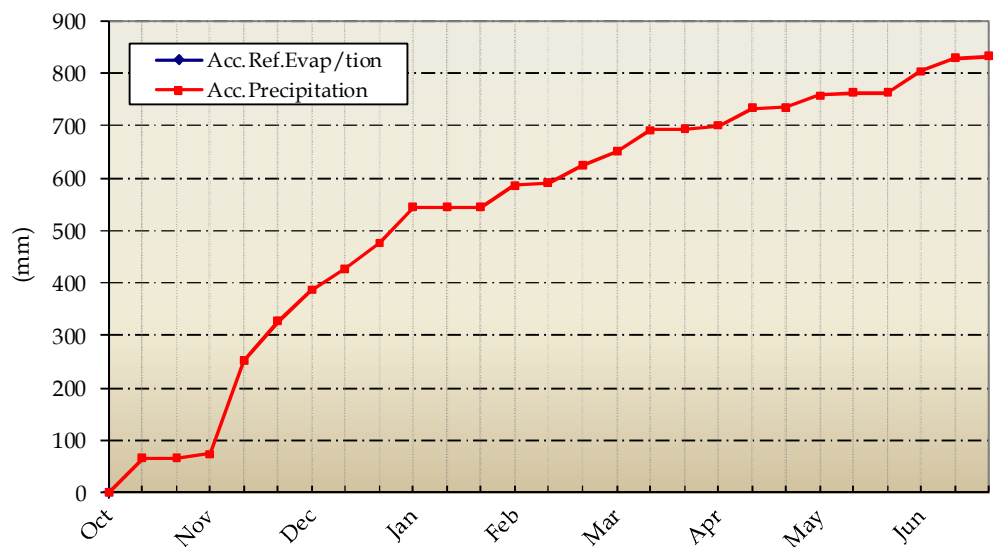


2nd 10-day period (11-20/06/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.6	22.6	26.0	28.6	27.4	25.0	24.6	27.4	28.4	29.6	26.2	32.2	28.0
	Min	13.4	7.4	8.2	9.6	10.6	9.2	11.8	11.4	11.0	12.0	10.5	15.7	13.0
Relative Humidity	Max	100	94	79	88	93	100	100	100	90	96	94	97	-
	Min	51	52	42	40	34	46	51	49	39	36	44	39	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
Sunshine Duration		7.8	10.0	13.2	13.4	12.1	11.6	10.0	12.8	12.2	10.1	11.3	10.3	9.8
Precipitation		1.3	1.7									3.0	49.2	14.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	70.5
Growing Degrees	5	13.0	10.0	12.1	14.1	14.0	12.1	13.2	14.4	14.7	15.8	133.4	189.3	155.2
	10	8.0	5.0	7.1	9.1	9.0	7.1	8.2	9.4	9.7	10.8	83.4	139.3	105.2

2nd 10-day period (11-20/06/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	46.5
Precipitation - Reference Evapotranspiration	-	-	-32.4
Number of Rainy Days	2.0	4.0	2.0
Number of Dry Days	0.0	5.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

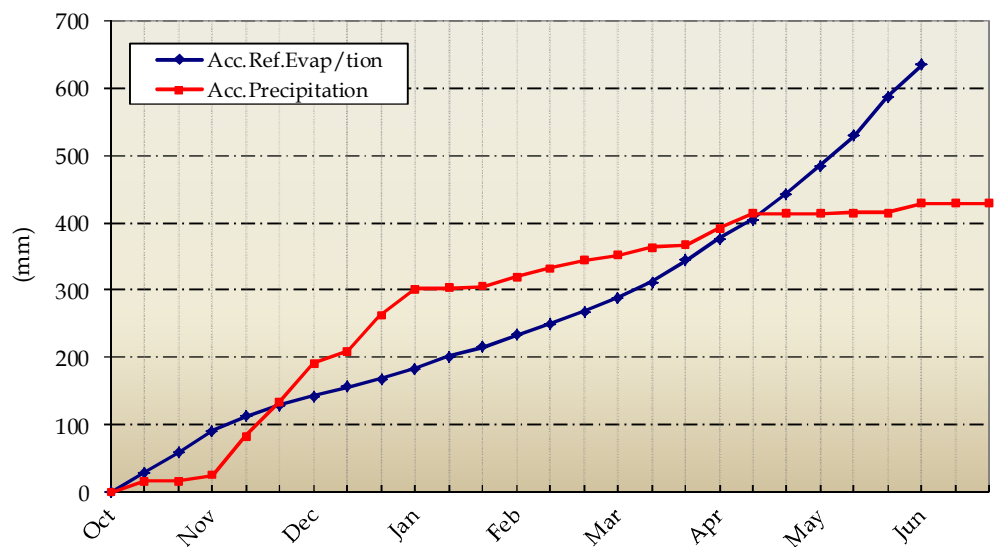


2nd 10-day period (11-20/06/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.6	28.4	29.3	32.2	32.5	29.9	29.2	30.0	31.2	29.8	30.1	30.2	29.3
	Min	15.2	13.0	16.1	15.3	17.6	15.0	15.8	15.7	17.6	16.9	15.8	17.6	15.9
Relative Humidity	Max	100	99	80	76	78	86	99	100	100	72	89	88	-
	Min	29	24	24	24	25	31	35	30	22	26	27	39	-
Soil Temperature at 10 cm	06 UTC	24.4	24.4	24.0	24.6	24.6	24.8	25.0	25.2	25.4	25.6	24.8	25.3	23.0
	12 UTC	27.5	27.0	27.5	27.5	28.0	28.5	28.0	29.0	29.0	27.5	28.0	28.7	27.4
Sunshine Duration		11.6	12.1	12.2	11.7	10.5	12.6	12.5	12.2	12.0	3.3	11.1	11.3	11.0
Precipitation													4.7	3.1
Evaporation		9.0	10.4	10.9	8.6	5.4	10.0	9.6	10.5	10.6	4.0	89.0	98.7	80.7
Growing Degrees	5	16.9	15.7	17.7	18.8	20.1	17.5	17.5	17.9	19.4	18.4	179.7	189.4	175.9
	10	11.9	10.7	12.7	13.8	15.1	12.5	12.5	12.9	14.4	13.4	129.7	139.4	125.9

2nd 10-day period (11-20/06/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	58.1	54.6
Precipitation - Reference Evapotranspiration	-	-53.4	-51.5
Number of Rainy Days	0.0	1.0	0.9
Number of Dry Days	20.0	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



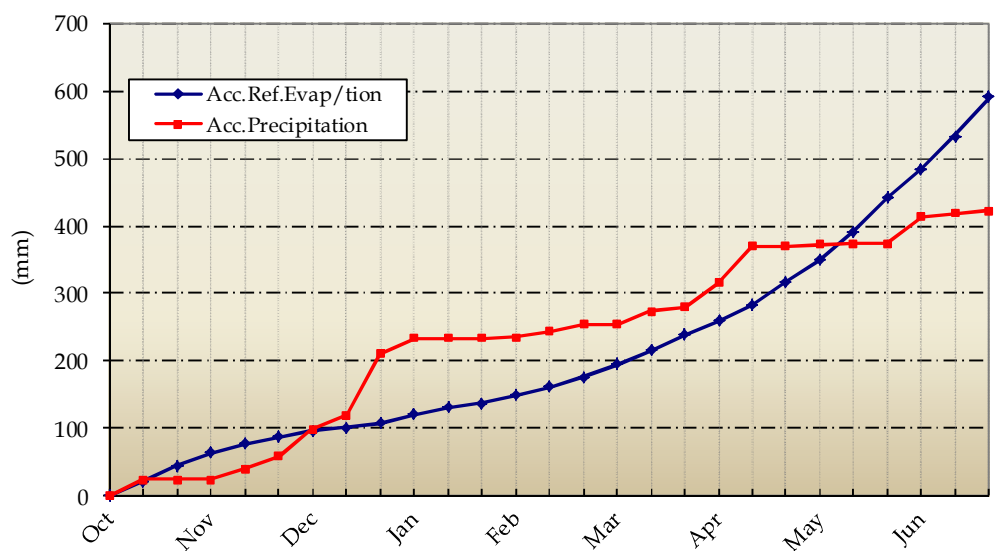
Larisa

2nd 10-day period (11-20/06/2020)		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	30.0	30.8	35.0	33.0	32.0	30.9	34.0	35.4	31.6	32.1	34.0	31.7
	Min	17.0	15.6	15.8	16.0	18.0	15.6	16.0	18.8	21.8	18.0	17.3	18.7	15.7
Relative Humidity	Max	76	62	74	82	56	70	80	57	45	78	68	86	-
	Min	28	22	29	20	21	24	27	21	17	22	23	30	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	23.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	26.6
Sunshine Duration		9.4	9.8	8.2	10.8	10.5	9.8	8.9	11.6	10.3	10.8	10.0	8.9	10.5
Precipitation		2.0						0.4			2.2	4.6	6.7	6.2
Evaporation		8.8	6.0	10.1	11.6	9.3	13.6	9.7	7.6	15.6	8.8	101.1	91.4	85.8
Growing Degrees	5	17.7	17.8	18.3	20.5	20.5	18.8	18.5	21.4	23.6	19.8	196.9	213.4	186.8
	10	12.7	12.8	13.3	15.5	15.5	13.8	13.5	16.4	18.6	14.8	146.9	163.4	136.8

2nd 10-day period (11-20/06/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.4	55.9	58.5
Precipitation - Reference Evapotranspiration	-53.8	-49.2	-52.3
Number of Rainy Days	3.0	3.0	1.7
Number of Dry Days	4.0	10.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



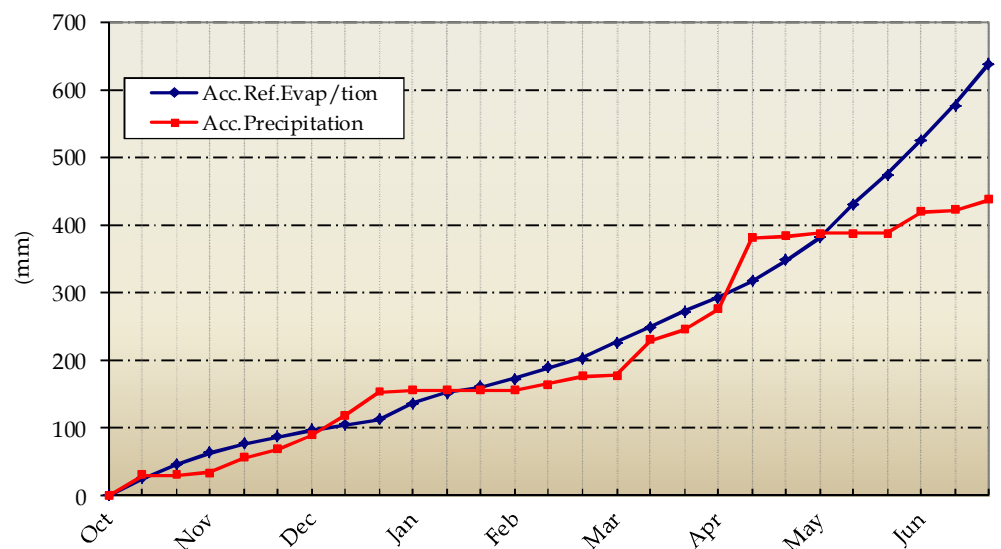
Mikra

2nd 10-day period (11-20/06/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.0	27.6	29.2	33.0	31.6	30.2	28.8	30.8	32.0	32.0	30.3	32.1	29.7
	Min	17.2	15.0	21.6	21.0	19.5	17.8	19.6	16.2	20.0	17.9	18.6	21.1	17.0
Relative Humidity	Max	92	83	70	77	83	81	83	87	74	73	80	79	-
	Min	44	37	41	31	21	38	43	33	28	25	34	35	-
Soil Temperature at 10 cm	06 UTC	22.4	22.0	23.0	23.6	25.0	24.8	22.4	24.0	24.8	25.4	23.7	25.5	24.4
	12 UTC	26.0	26.0	25.8	26.8	27.8	28.4	28.2	27.6	29.8	28.4	27.5	29.6	29.1
Sunshine Duration		9.5	11.2	8.0	12.6	13.4	10.6	8.0	13.7	13.7	11.6	11.2	10.0	10.3
Precipitation		15.7						0.1				15.8	3.3	11.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	85.4
Growing Degrees	5	17.6	16.3	20.4	22.0	20.6	19.0	19.2	18.5	21.0	20.0	194.5	216.0	183.4
	10	12.6	11.3	15.4	17.0	15.6	14.0	14.2	13.5	16.0	15.0	144.5	166.0	133.4

2nd 10-day period (11-20/06/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	61.8	57.6	57.4
Precipitation - Reference Evapotranspiration	-46.0	-54.3	-45.9
Number of Rainy Days	2.0	2.0	1.8
Number of Dry Days	3.0	6.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



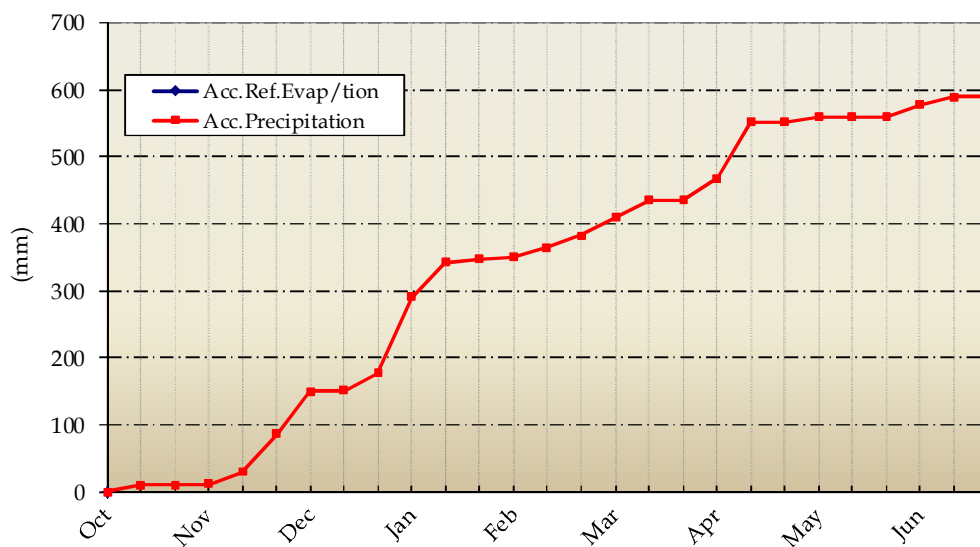
Tanagra

2nd 10-day period (11-20/06/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.7	28.8	29.9	33.0	32.2	31.5	30.2	31.5	32.5	32.0	31.1	32.6	30.3
	Min	16.5	17.2	14.8	17.3	17.5	16.4	16.2	17.3	19.0	18.6	17.1	19.1	15.8
Relative Humidity	Max	70	77	77	74	68	70	74	73	66	70	72	71	-
	Min	19	21	20	20	19	20	26	23	15	15	20	24	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.3	12.9	10.6	12.9	12.0	13.3	11.3	13.3	12.9	7.1	11.9	11.4	
Precipitation														2.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	18.1	18.0	17.4	20.2	19.9	19.0	18.2	19.4	20.8	20.3	191.1	208.4	
	10	13.1	13.0	12.4	15.2	14.9	14.0	13.2	14.4	15.8	15.3	141.1	158.4	

2nd 10-day period (11-20/06/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	55.5	
Precipitation - Reference Evapotranspiration	-	-55.5	2.8
Number of Rainy Days	0.0	0.0	1.4
Number of Dry Days	17.0	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

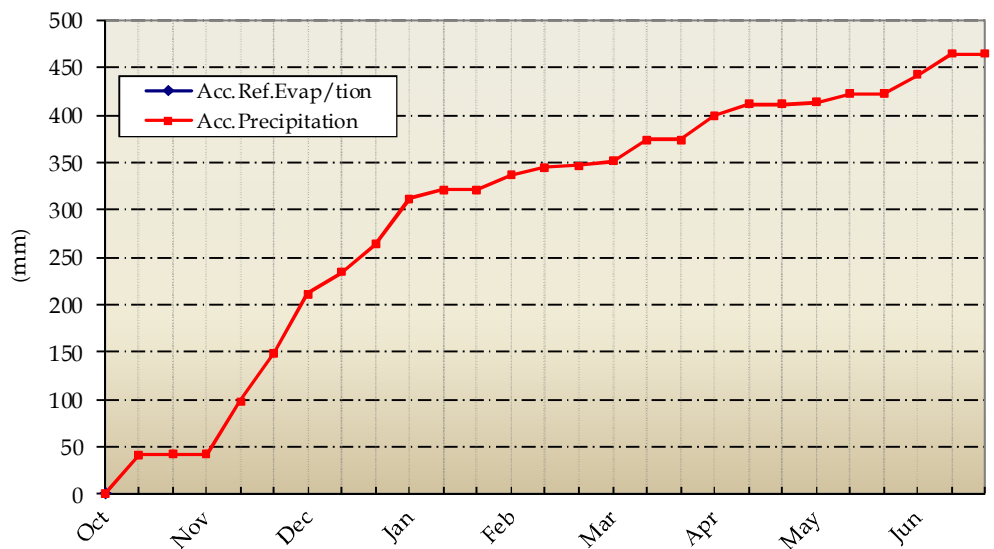


2nd 10-day period (11-20/06/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.3	24.7	26.9	30.6	27.9	27.0	25.8	27.0	30.6	29.7	27.4	29.9	28.6
	Min	12.3	14.0	8.0	9.5	11.8	9.8	10.0	15.0	10.5	14.0	11.5	13.6	11.6
Relative Humidity	Max	65	71	53	91	77	89	74	93	85	72	77	100	-
	Min	28	29	25	18	29	25	37	26	13	21	25	30	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	21.0	22.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	29.4	25.9
Sunshine Duration		13.2	12.6	10.9	13.1	8.2	12.5	11.1	13.0	13.1	13.1	12.1	8.2	10.8
Precipitation										0.0	0.0	0.0	87.2	5.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	62.0
Growing Degrees	5	12.8	14.4	12.5	15.1	14.9	13.4	12.9	16.0	15.6	16.9	144.2	167.8	151.2
	10	7.8	9.4	7.5	10.1	9.9	8.4	7.9	11.0	10.6	11.9	94.2	117.8	101.2

2nd 10-day period (11-20/06/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	51.8	42.5	52.3
Precipitation - Reference Evapotranspiration	-51.8	44.7	-46.6
Number of Rainy Days	0.0	6.0	1.4
Number of Dry Days	17.0	6.0	-

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.

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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