



# AGROMETEOROLOGICAL BULLETIN

*August 2022  
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



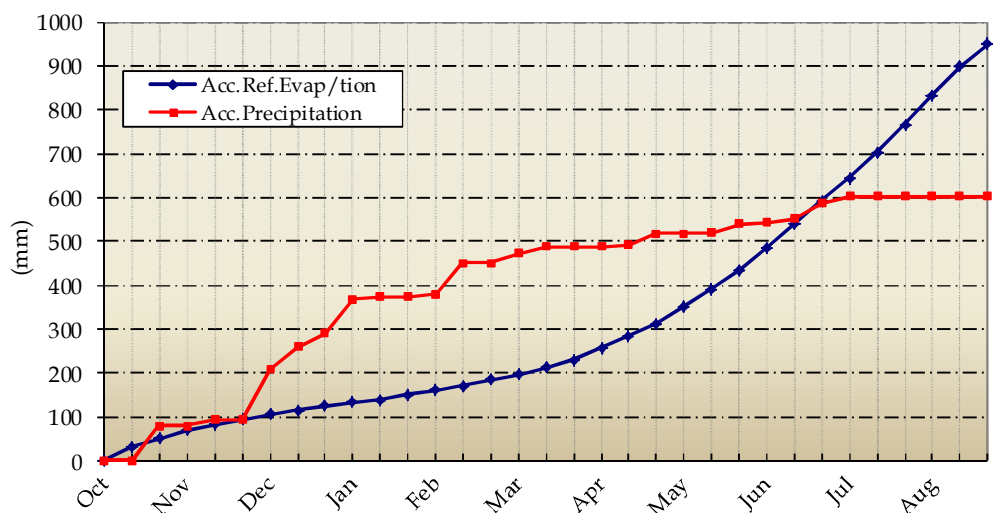
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2nd 10-day period (11-20/08/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.4	34.2	32.6	30.6	29.0	31.4	32.6	35.4	34.4	32.8	32.5	32.9	32.1
	Min	21.0	19.4	19.6	18.0	21.4	18.2	20.4	19.6	20.6	20.2	19.8	20.1	19.4
Relative Humidity	Max	91	91	91	90	80	88	91	89	85	84	88	75	76
	Min	37	36	34	46	52	49	44	33	40	43	41	30	34
Soil Temperature at 10 cm	06 UTC	27.8	28.4	27.2	28.0	28.6	28.0	28.4	28.6	29.0	29.5	28.4	27.4	26.2
	12 UTC	31.6	32.4	32.0	31.8	31.8	31.8	31.8	32.4	33.0	33.4	32.2	31.0	29.8
Sunshine Duration		11.5	12.1	10.8	12.0	9.8	12.1	7.6	12.0	12.9	11.7	11.2	11.9	11.6
Precipitation													0.0	4.2
Evaporation		8.5	10.3	8.7	9.8	4.2	9.3	5.7	11.0	10.1	5.4	83.0	89.6	94.6
Growing Degrees	5	21.7	21.8	21.1	19.3	20.2	19.8	21.5	22.5	22.5	21.5	211.9	215.2	190.4
	10	16.7	16.8	16.1	14.3	15.2	14.8	16.5	17.5	17.5	16.5	161.9	165.2	144.4

2nd 10-day period (11-20/08/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	51.0	57.4	47.1
Precipitation - Reference Evapotranspiration	-51.0	-57.4	-42.9
Number of Rainy Days	0.0	0.0	0.6
Number of Dry Days	55.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

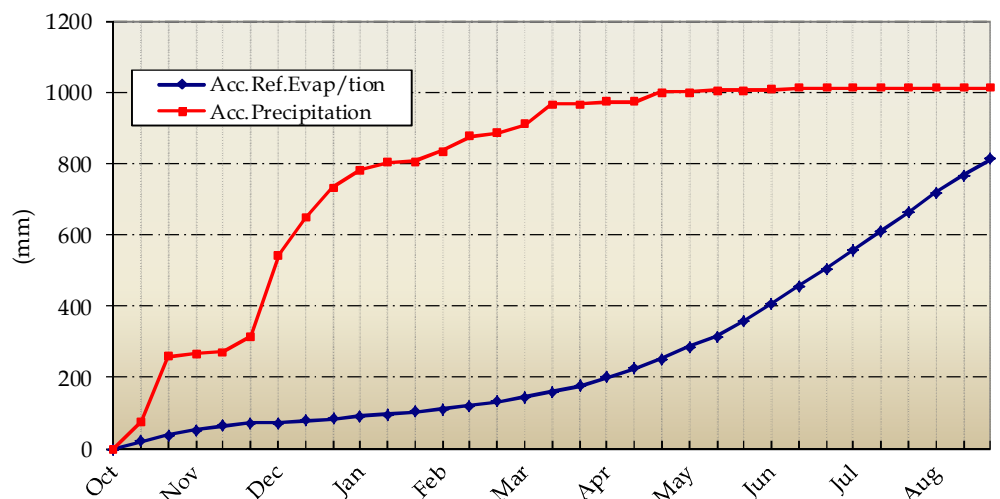


2nd 10-day period (11-20/08/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.3	32.8	29.4	30.2	29.4	31.8	31.4	34.2	35.3	33.6	32.2	35.4	31.7
	Min	18.4	19.8	22.4	20.7	21.1	19.1	22.2	21.3	21.0	21.2	20.7	20.8	19.7
Relative Humidity	Max	81	82	83	88	87	92	91	94	85	87	87	92	88
	Min	26	37	44	46	46	37	57	39	36	43	41	32	36
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	30.6	28.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	33.2	33.8
Sunshine Duration		10.7	10.2	12.0	10.8	12.8	11.4	11.7	12.0	11.5	10.7	11.4	11.6	11.5
Precipitation														1.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	101.3	83.9
Growing Degrees	5	21.4	21.3	20.9	20.5	20.3	20.5	21.8	22.8	23.2	22.4	214.8	231.4	170.7
	10	16.4	16.3	15.9	15.5	15.3	15.5	16.8	17.8	18.2	17.4	164.8	181.4	129.5

2nd 10-day period (11-20/08/2022)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	45.3	46.7	43.1
Precipitation - Reference Evapotranspiration	-45.3	-46.7	-42.1
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	71.0	71.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

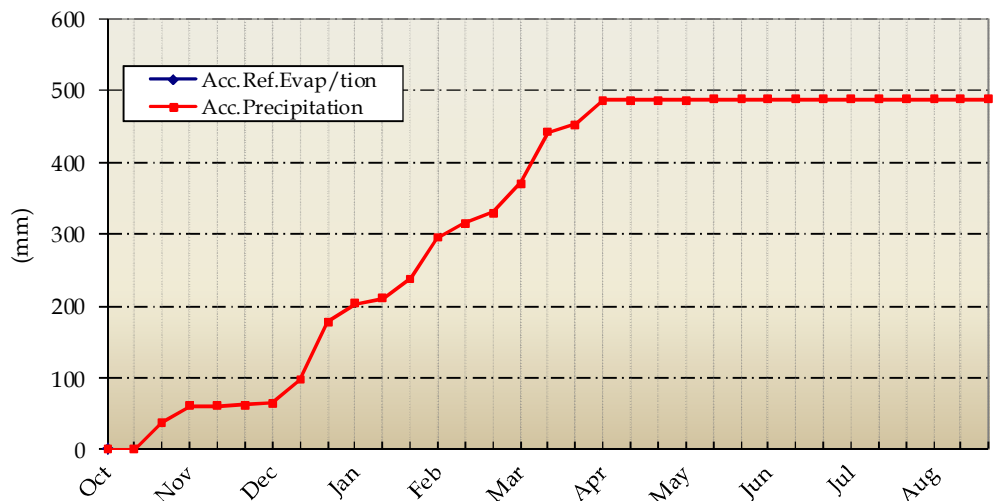


2nd 10-day period (11-20/08/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.8	29.0	29.6	29.0	28.6	30.6	30.0	31.6	31.6	32.6	30.0	29.8	29.5
	Min	25.0	23.4	21.0	21.2	23.0	20.0	22.2	25.0	25.2	27.2	23.3	23.9	23.0
Relative Humidity	Max	76	82	85	89	81	81	92	92	68	83	83	90	78
	Min	65	53	53	61	56	45	56	51	46	42	53	72	53
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.9	12.1	12.5	12.4	12.6	12.6	12.3	12.3	12.2	11.9	12.3	11.7	11.6
Precipitation														0.4
Evaporation		9.2	5.9	6.7	4.6	8.7	6.4	3.0	9.7	9.3	6.4	69.9	67.7	72.4
Growing Degrees	5	21.4	21.2	20.3	20.1	20.8	20.3	21.1	23.3	23.4	24.9	216.8	218.6	205.6
	10	16.4	16.2	15.3	15.1	15.8	15.3	16.1	18.3	18.4	19.9	166.8	168.6	157.3

2nd 10-day period (11-20/08/2022)		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	69.0	65.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

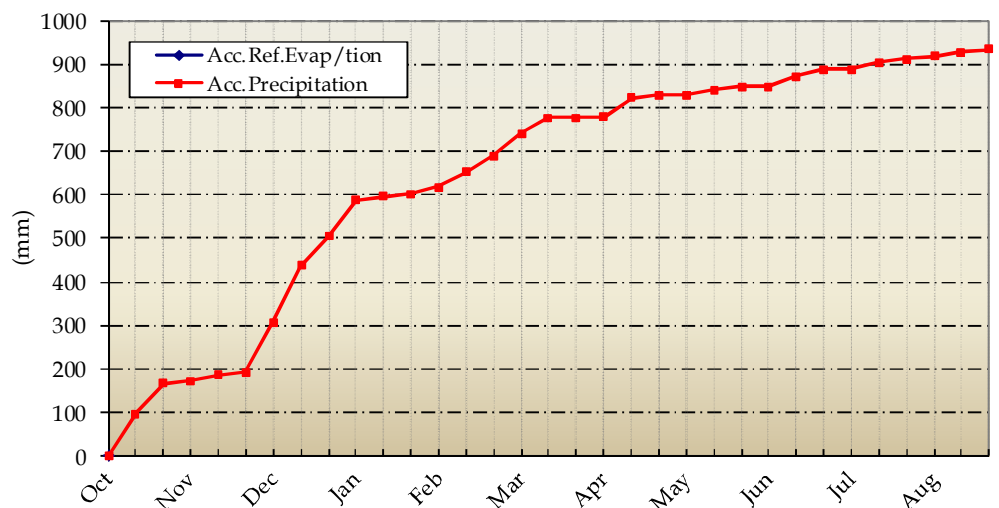


2nd 10-day period (11-20/08/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.4	30.3	29.1	28.3	31.0	32.1	34.6	36.7	37.6	34.0	32.7	35.3	32.0
	Min	19.0	13.2	16.0	14.8	12.1	13.5	13.1	14.0	14.3	17.2	14.7	17.0	15.8
Relative Humidity	Max	100	100	100	100	99	100	97	88	91	91	97	84	88
	Min	25	33	39	34	32	28	23	20	20	32	29	24	32
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	23.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
Sunshine Duration		8.8	5.3	8.4	8.1	12.2	7.8	12.1	11.6	10.9	9.5	9.5	10.7	10.0
Precipitation		3.9	1.6		0.1							5.6	0.3	8.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	21.2	16.8	17.6	16.6	16.6	17.8	18.9	20.4	21.0	20.6	187.2	211.5	148.2
	10	16.2	11.8	12.6	11.6	11.6	12.8	13.9	15.4	16.0	15.6	137.2	161.5	109.1

2nd 10-day period (11-20/08/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	34.9
Precipitation - Reference Evapotranspiration	-	-	-26.5
Number of Rainy Days	3.0	1.0	1.3
Number of Dry Days	3.0	29.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

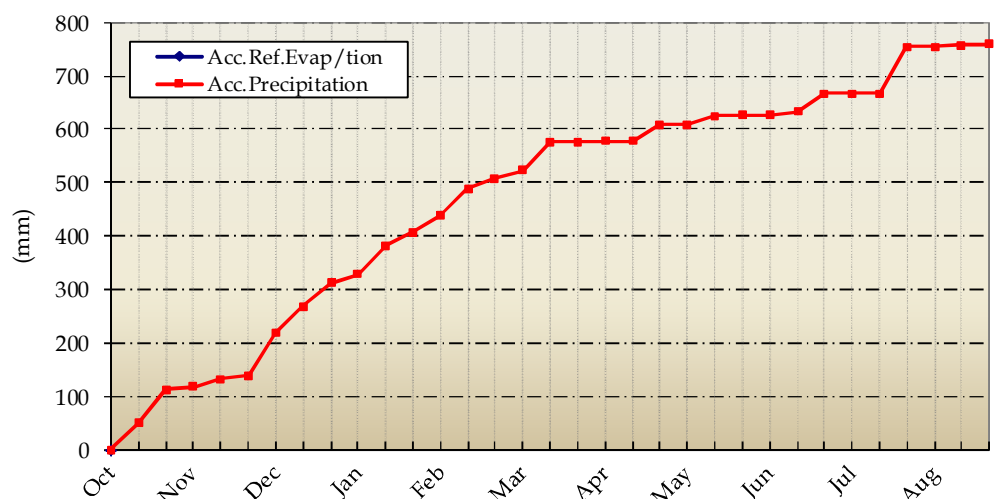


2nd 10-day period (11-20/08/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.2	31.6	29.8	32.6	32.0	33.4	36.5	34.7	35.8	32.6	33.4	34.3	32.2
	Min	20.1	19.5	19.8	18.7	19.0	18.9	21.9	20.8	20.8	21.1	20.1	20.5	19.4
Relative Humidity	Max	68	95	96	91	86	89	85	85	77	79	85	82	84
	Min	23	42	39	31	31	30	26	26	26	42	32	35	33
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	29.6	26.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	34.0	29.2
Sunshine Duration		6.8	10.4	8.6	12.2	12.5	12.4	12.5	12.4	11.9	11.5	11.1	11.2	11.4
Precipitation		0.0		1.8								1.8		3.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	71.8
Growing Degrees	5	22.7	20.6	19.8	20.7	20.5	21.2	24.2	22.8	23.3	21.9	217.4	224.1	188.4
	10	17.7	15.6	14.8	15.7	15.5	16.2	19.2	17.8	18.3	16.9	167.4	174.1	143.1

2nd 10-day period (11-20/08/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	48.5
Precipitation - Reference Evapotranspiration	-	-	-45.3
Number of Rainy Days	1.0	0.0	0.6
Number of Dry Days	4.0	66.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



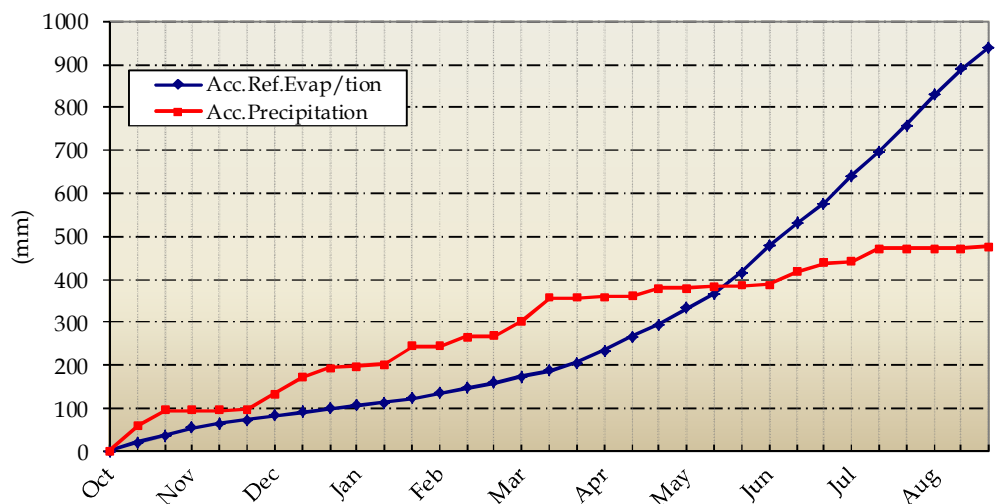
Larisa

2nd 10-day period (11-20/08/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.8	31.0	30.6	32.6	33.4	37.0	35.8	37.6	38.0	35.2	34.5	33.1	33.5
	Min	21.8	20.0	18.0	17.4	14.0	17.0	18.8	18.6	18.6	21.0	18.5	20.1	18.7
Relative Humidity	Max	74	95	99	96	100	86	79	71	80	82	86	89	76
	Min	32	37	34	30	27	22	25	23	20	36	29	37	26
Soil Temperature at 10 cm	06 UTC	28.8	29.0	27.4	25.8	26.0	27.0	27.4	28.0	28.4	28.8	27.7	-	27.2
	12 UTC	30.2	29.8	28.0	30.0	27.8	28.6	28.2	29.8	30.0	30.6	29.3	-	28.9
Sunshine Duration		7.8	6.9	3.3	5.8	11.0	10.2	11.2	11.4	10.3	10.4	8.8	10.2	10.9
Precipitation		0.0	3.7									3.7	36.4	3.3
Evaporation		11.9	4.8	7.5	4.2	11.1	8.5	6.8	11.4	10.7	12.7	89.6	87.9	91.8
Growing Degrees	5	22.8	20.5	19.3	20.0	18.7	22.0	22.3	23.1	23.3	23.1	215.1	216.0	195.4
	10	17.8	15.5	14.3	15.0	13.7	17.0	17.3	18.1	18.3	18.1	165.1	166.0	149.2

2nd 10-day period (11-20/08/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	51.4	55.8	57.5
Precipitation - Reference Evapotranspiration	-47.7	-19.4	-54.2
Number of Rainy Days	1.0	3.0	0.8
Number of Dry Days	29.0	22.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



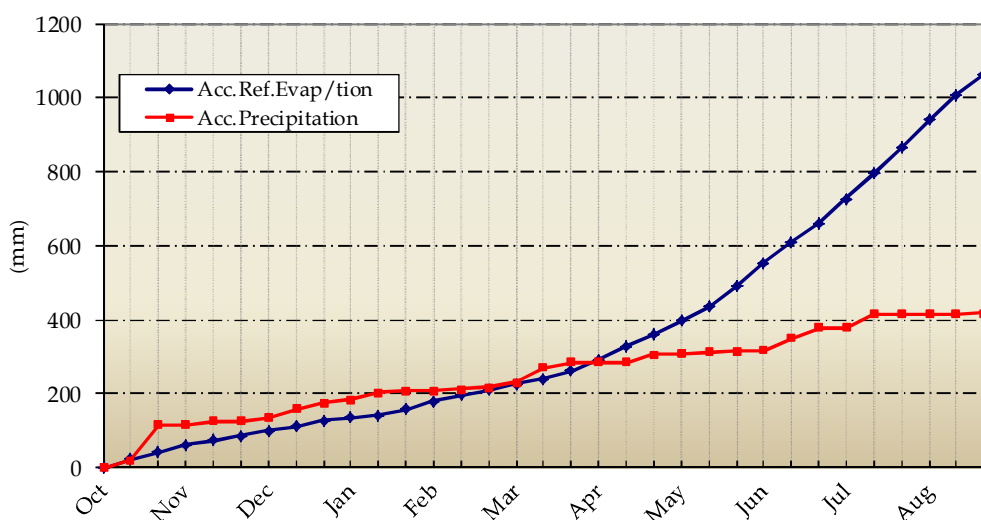
Mikra

2nd 10-day period (11-20/08/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.5	29.6	29.8	28.5	30.7	34.0	34.6	36.0	37.0	33.7	32.6	32.7	32.4
	Min	22.6	22.6	20.2	19.2	20.0	19.3	19.6	20.5	21.0	22.7	20.8	22.6	20.8
Relative Humidity	Max	74	88	85	100	80	98	100	82	70	82	86	82	73
	Min	36	44	46	48	38	29	37	29	25	40	37	38	31
Soil Temperature at 10 cm	06 UTC	28.6	27.4	27.0	27.0	25.6	26.4	26.8	27.6	28.2	28.6	27.3	29.5	27.7
	12 UTC	30.6	28.6	27.6	27.8	29.0	28.8	29.8	29.8	30.4	30.8	29.3	31.9	32.5
Sunshine Duration		11.0	5.8	5.1	3.3	10.8	10.7	12.4	12.2	11.7	10.2	9.3	10.8	11.0
Precipitation		1.2	0.1	0.0	1.0		0.1					2.4	6.0	2.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	90.8
Growing Degrees	5	22.6	21.1	20.0	18.9	20.4	21.7	22.1	23.3	24.0	23.2	217.1	226.7	199.7
	10	17.6	16.1	15.0	13.9	15.4	16.7	17.1	18.3	19.0	18.2	167.1	176.7	153.5

2nd 10-day period (11-20/08/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	56.0	60.8	55.6
Precipitation - Reference Evapotranspiration	-53.6	-54.8	-53.3
Number of Rainy Days	4.0	2.0	0.9
Number of Dry Days	3.0	18.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





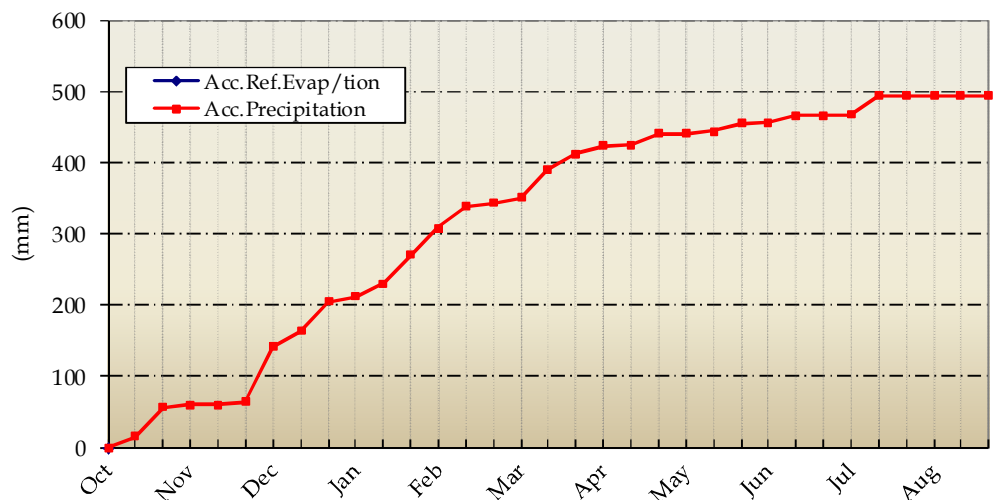
Tanagra

2nd 10-day period (11-20/08/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.0	30.8	31.6	32.1	31.9	35.6	34.2	35.4	37.8	35.2	33.6	33.1	32.1
	Min	23.8	18.9	20.1	19.7	17.5	19.6	19.9	20.3	20.7	21.4	20.2	20.5	19.7
Relative Humidity	Max	60	63	64	77	78	72	69	60	54	56	65	64	69
	Min	27	25	27	29	22	19	22	18	15	24	23	23	26
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.3	12.5	12.1	10.6	12.4	12.6	12.5	12.2	12.0	11.5	12.1	11.2	11.6
Precipitation						0.0						0.0	0.2	1.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	95.5
Growing Degrees	5	22.4	19.9	20.9	20.9	19.7	22.6	22.1	22.9	24.3	23.3	218.8	218.2	183.3
	10	17.4	14.9	15.9	15.9	14.7	17.6	17.1	17.9	19.3	18.3	168.8	168.2	139.5

2nd 10-day period (11-20/08/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	0.0	1.0	0.3
Number of Dry Days	41.0	57.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

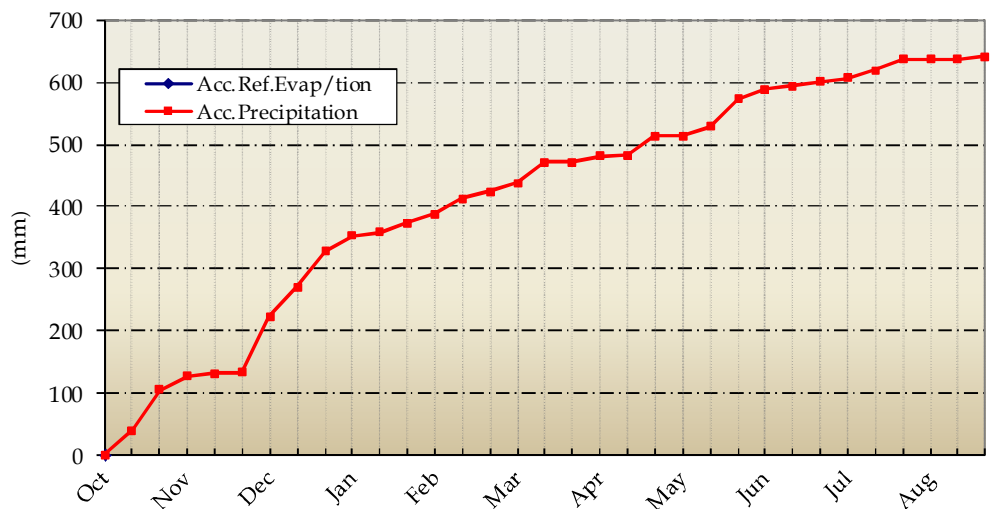


2nd 10-day period (11-20/08/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.4	29.1	28.6	29.7	29.8	35.4	34.4	34.7	36.6	35.3	32.4	32.7	31.4
	Min	16.6	14.4	14.6	12.8	12.4	12.5	15.8	14.1	14.2	16.6	14.4	17.4	14.8
Relative Humidity	Max	67	92	94	93	92	92	79	87	80	82	86	81	79
	Min	18	29	28	25	27	14	13	18	14	19	20	20	24
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	29.3
Sunshine Duration		7.8	6.1	7.0	11.0	11.7	11.9	9.9	11.9	11.7	11.3	10.0	10.4	10.7
Precipitation													4.1	11.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	55.9
Growing Degrees	5	18.5	16.8	16.6	16.3	16.1	19.0	20.1	19.4	20.4	21.0	184.0	200.8	143.9
	10	13.5	11.8	11.6	11.3	11.1	14.0	15.1	14.4	15.4	16.0	134.0	150.8	104.2

2nd 10-day period (11-20/08/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	46.0	46.9	32.5
Precipitation - Reference Evapotranspiration	-46.0	-42.8	-20.7
Number of Rainy Days	0.0	3.0	1.2
Number of Dry Days	38.0	12.0	-

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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