



# AGROMETEOROLOGICAL BULLETIN

*July 2021  
1st 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



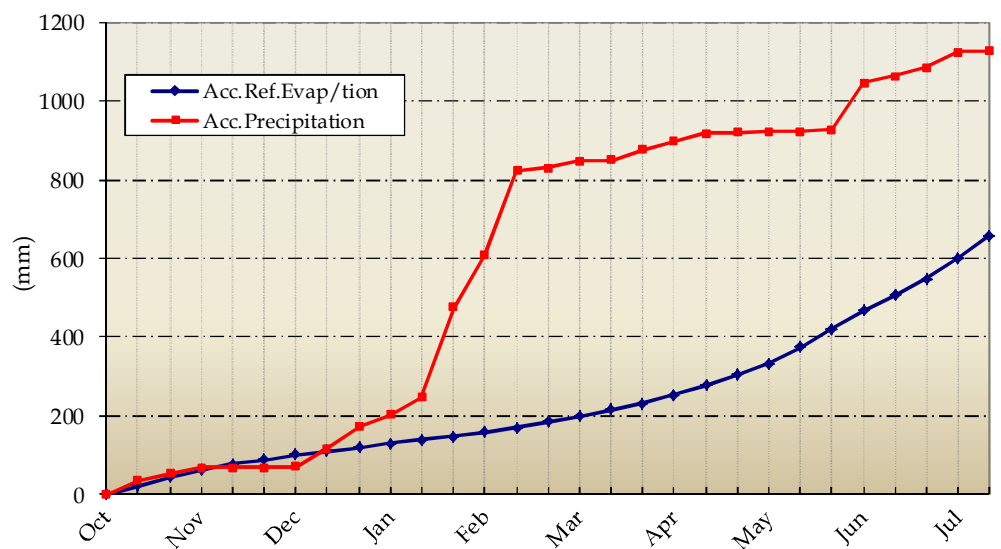
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*Web adresses of HNMS*  
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1st 10-day period (1-10/07/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.2	32.8	29.0	29.0	28.6	32.2	31.0	32.6	32.4	32.4	31.1	33.7	29.3
	Min	19.6	22.4	20.4	20.4	20.0	18.6	20.2	24.0	20.2	18.0	20.4	22.0	17.0
Relative Humidity	Max	85	90	82	70	91	82	73	75	69	71	79	70	-
	Min	48	34	42	43	56	38	53	39	29	24	41	34	-
Soil Temperature at 10 cm	06 UTC	25.6	26.0	25.8	23.0	24.4	24.8	25.8	26.2	26.4	24.4	25.2	25.0	23.7
	12 UTC	28.6	28.6	26.8	26.2	28.0	28.4	27.4	29.4	29.2	28.6	28.1	28.4	28.2
Sunshine Duration		12.8	11.3	8.5	13.4	11.0	11.9	11.5	13.3	13.3	13.2	12.0	12.2	10.3
Precipitation				3.4								3.4		12.1
Evaporation		9.3	6.3	8.7	6.7	6.9	8.5	6.5	12.3	7.7	13.0	85.9	106.4	85.9
Growing Degrees	5	20.4	22.6	19.7	19.7	19.3	20.4	20.6	23.3	21.3	20.2	207.5	228.8	181.3
	10	15.4	17.6	14.7	14.7	14.3	15.4	15.6	18.3	16.3	15.2	157.5	178.8	131.3

1st 10-day period (1-10/07/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.9	67.0	56.1
Precipitation - Reference Evapotranspiration	-54.5	-67.0	-44.0
Number of Rainy Days	1.0	0.0	2.2
Number of Dry Days	9.0	19.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

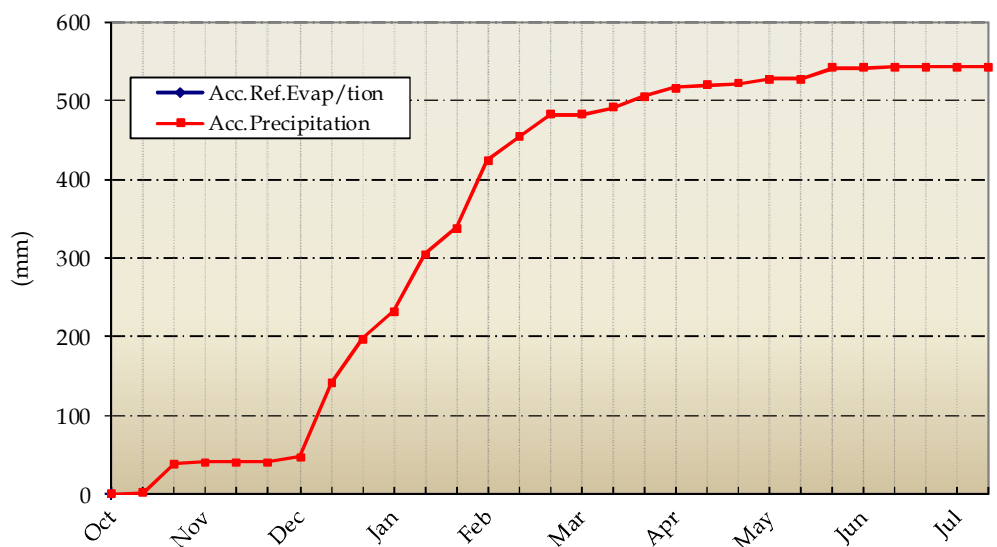


1st 10-day period (1-10/07/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.6	31.4	30.4	31.5	31.0	35.1	34.2	35.4	37.4	34.9	33.8	32.5	29.5
	Min	19.2	21.0	21.6	19.3	18.5	20.0	19.2	19.9	21.4	21.2	20.1	19.5	17.7
Relative Humidity	Max	98	98	86	92	93	95	94	94	91	92	93	94	-
	Min	31	41	37	32	43	40	34	41	29	34	36	42	-
Soil Temperature at 10 cm	06 UTC	29.4	29.0	29.6	29.2	29.2	29.8	30.0	29.6	30.4	30.6	29.7	28.5	26.9
	12 UTC	33.0	32.2	33.2	31.8	32.6	32.2	32.8	32.6	33.0	33.0	32.6	31.0	31.6
Sunshine Duration		13.3	13.6	13.3	13.6	13.5	13.3	13.3	13.0	13.2	12.9	13.3	12.1	12.0
Precipitation													1.3	0.7
Evaporation		13.0	2.7	10.0	12.4	7.0	8.0	11.5	5.5	16.4	11.2	97.7	90.5	75.0
Growing Degrees	5	22.9	21.2	21.0	20.4	19.8	22.6	21.7	22.7	24.4	23.1	219.6	210.3	186.1
	10	17.9	16.2	16.0	15.4	14.8	17.6	16.7	17.7	19.4	18.1	169.6	160.3	136.1

1st 10-day period (1-10/07/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	55.0	-	53.6
Precipitation - Reference Evapotranspiration	-55.0	-	-52.9
Number of Rainy Days	0.0	1.0	0.3
Number of Dry Days	30.0	28.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

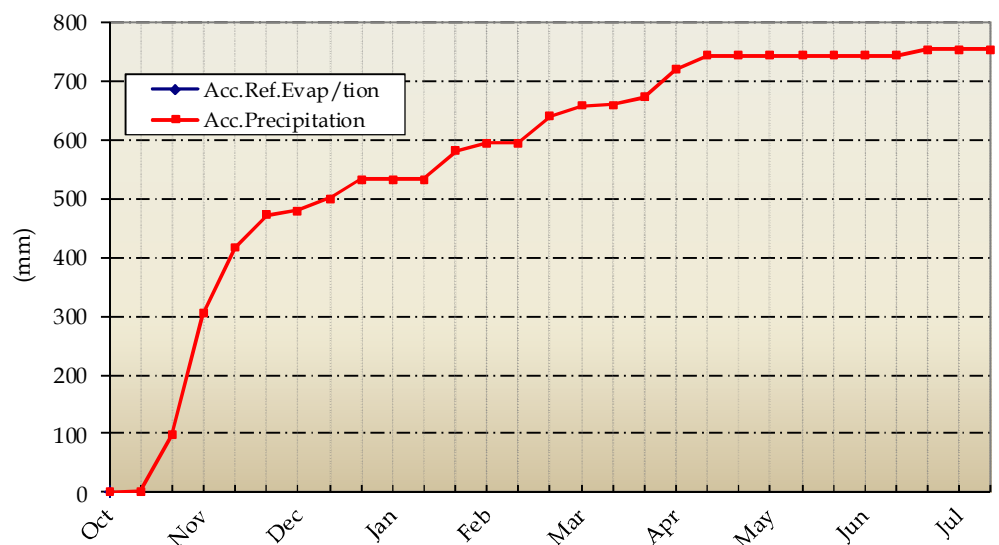


1st 10-day period (1-10/07/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.0	31.8	29.8	29.8	30.2	29.6	30.8	29.4	28.6	29.2	30.5	29.2	28.4
	Min	22.2	27.4	24.6	21.8	20.6	21.2	26.0	27.0	25.4	25.8	24.2	22.4	21.3
Relative Humidity	Max	64	72	89	88	79	89	73	84	77	73	79	83	-
	Min	24	44	61	59	59	68	57	65	67	53	56	55	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.5	12.7	12.9	13.0	13.0	12.9	13.0	12.8	11.4	12.9	12.6	12.4	12.1
Precipitation														0.7
Evaporation		9.0	10.0	5.4	5.9	5.1	7.5	6.5	10.7	7.6	9.0	76.7	63.8	92.1
Growing Degrees	5	24.1	24.6	22.2	20.8	20.4	20.4	23.4	23.2	22.0	22.5	223.6	208.1	198.6
	10	19.1	19.6	17.2	15.8	15.4	15.4	18.4	18.2	17.0	17.5	173.6	158.1	148.6

1st 10-day period (1-10/07/2021)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	0.7
Number of Rainy Days	0.0	0.1
Number of Dry Days	24.0	38.0

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

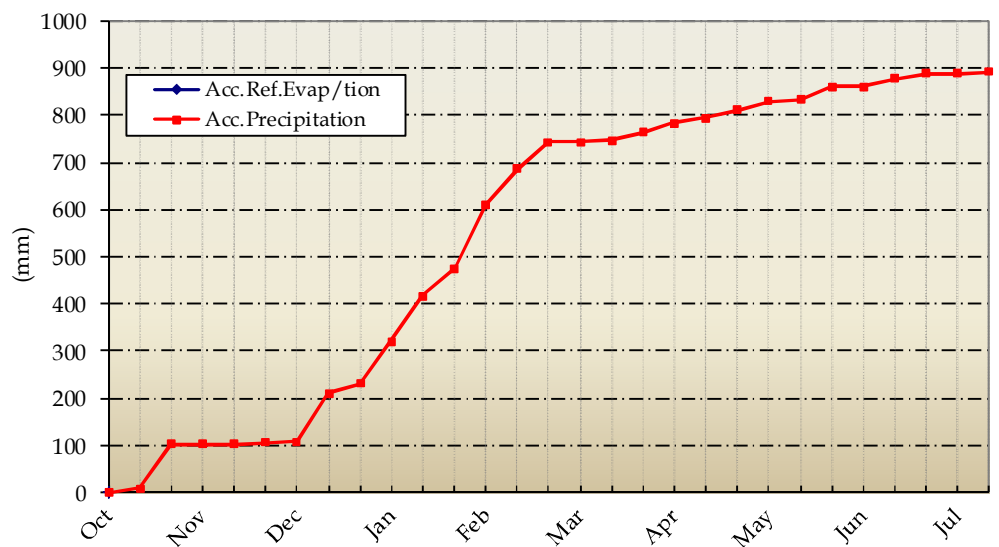


1st 10-day period (1-10/07/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.8	32.7	30.8	32.0	32.3	34.9	35.9	37.5	37.3	35.2	34.3	32.6	30.4
	Min	16.3	11.5	11.7	11.6	12.9	15.4	17.6	17.0	16.9	18.9	15.0	16.5	14.5
Relative Humidity	Max	62	88	83	91	86	95	67	93	95	100	86	91	-
	Min	25	24	29	28	33	32	28	24	26	34	28	36	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.2
Sunshine Duration		12.4	12.5	12.5	12.8	11.1	11.4	11.4	12.0	11.7	7.0	11.5	10.3	10.5
Precipitation										0.5	3.2	3.7	40.0	6.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	72.0
Growing Degrees	5	20.6	17.1	16.3	16.8	17.6	20.2	21.8	22.3	22.1	22.1	196.6	195.4	168.8
	10	15.6	12.1	11.3	11.8	12.6	15.2	16.8	17.3	17.1	17.1	146.6	145.4	120.3

1st 10-day period (1-10/07/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	51.3
Precipitation - Reference Evapotranspiration	-	-	-44.7
Number of Rainy Days	2.0	4.0	1.5
Number of Dry Days	19.0	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

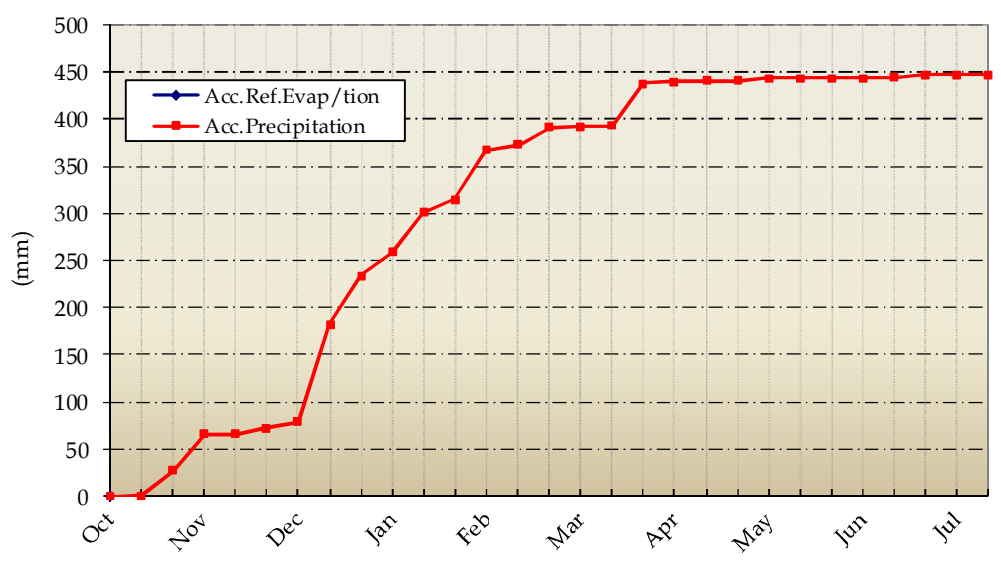


1st 10-day period (1-10/07/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.5	35.8	33.9	34.2	31.9	32.1	33.8	36.0	35.2	32.3	34.0	31.6	30.8
	Min	17.9	21.6	23.4	20.6	18.7	21.5	21.3	20.8	20.7	20.2	20.7	18.9	17.6
Relative Humidity	Max	87	88	70	70	78	91	89	92	90	92	85	94	-
	Min	32	16	20	17	39	43	36	28	34	41	31	38	-
Soil Temperature at 10 cm	06 UTC	28.0	28.6	28.4	28.0	28.0	28.4	28.6	28.0	28.4	29.0	28.3	27.5	25.3
	12 UTC	33.0	34.0	33.0	33.0	33.0	33.2	33.4	33.6	33.6	33.8	33.4	31.3	29.5
Sunshine Duration		10.9	12.3	12.7	13.0	13.0	10.7	12.8	12.2	12.6	12.7	12.3	10.8	11.4
Precipitation													17.1	1.0
Evaporation		2.7	9.3	12.0	13.0	18.0	4.0	11.0	10.0	10.0	11.0	101.0	96.9	89.7
Growing Degrees	5	21.2	23.7	23.7	22.4	20.3	21.8	22.6	23.4	23.0	21.3	223.2	202.8	191.7
	10	16.2	18.7	18.7	17.4	15.3	16.8	17.6	18.4	18.0	16.3	173.2	152.8	141.7

1st 10-day period (1-10/07/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	56.4
Precipitation - Reference Evapotranspiration	-	-	-55.4
Number of Rainy Days	0.0	2.0	0.3
Number of Dry Days	25.0	35.0	-

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Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

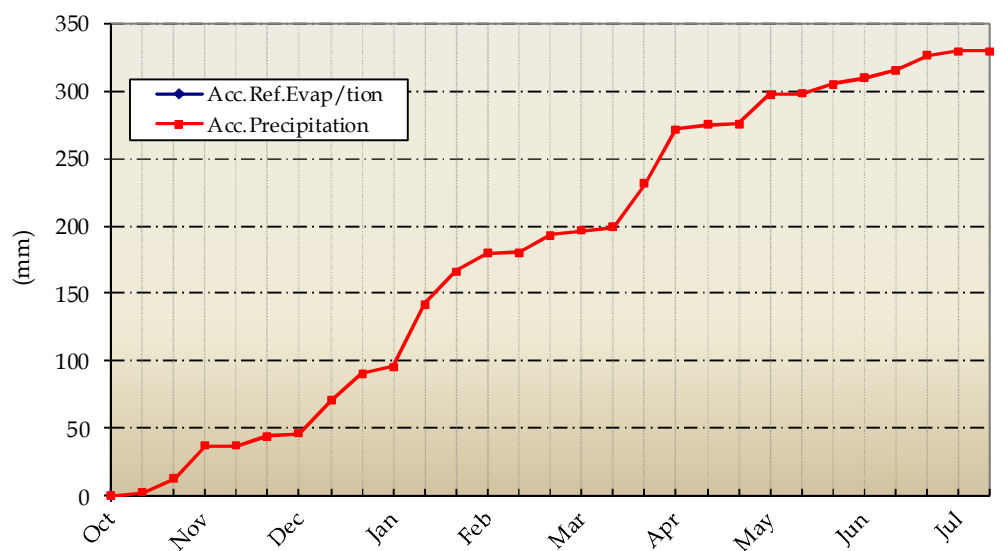


1st 10-day period (1-10/07/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	42.0	37.4	32.6	35.0	35.4	35.2	36.8	36.0	33.8	33.2	35.7	33.6	32.9
	Min	21.4	22.6	22.5	21.2	17.0	20.2	20.6	20.2	23.8	19.6	20.9	20.3	17.5
Relative Humidity	Max	85	39	53	60	69	73	74	75	79	73	68	82	-
	Min	14	14	28	22	24	26	25	33	29	33	25	33	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	26.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	28.7
Sunshine Duration		11.9	10.2	10.2	11.4	7.4	11.3	11.9	10.9	11.3	8.0	10.4	9.3	10.7
Precipitation				0.0								0.0	2.4	5.5
Evaporation		19.5	14.8	10.6	10.3	13.1	12.2	13.3	8.9	16.3	13.6	132.6	106.6	95.9
Growing Degrees	5	26.7	25.0	22.6	23.1	21.2	22.7	23.7	23.1	23.8	21.4	233.3	219.4	202.1
	10	21.7	20.0	17.6	18.1	16.2	17.7	18.7	18.1	18.8	16.4	183.3	169.4	152.1

1st 10-day period (1-10/07/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	68.0	59.2	62.4
Precipitation - Reference Evapotranspiration	-68.0	-56.8	-56.9
Number of Rainy Days	0.0	3.0	1.4
Number of Dry Days	14.0	9.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



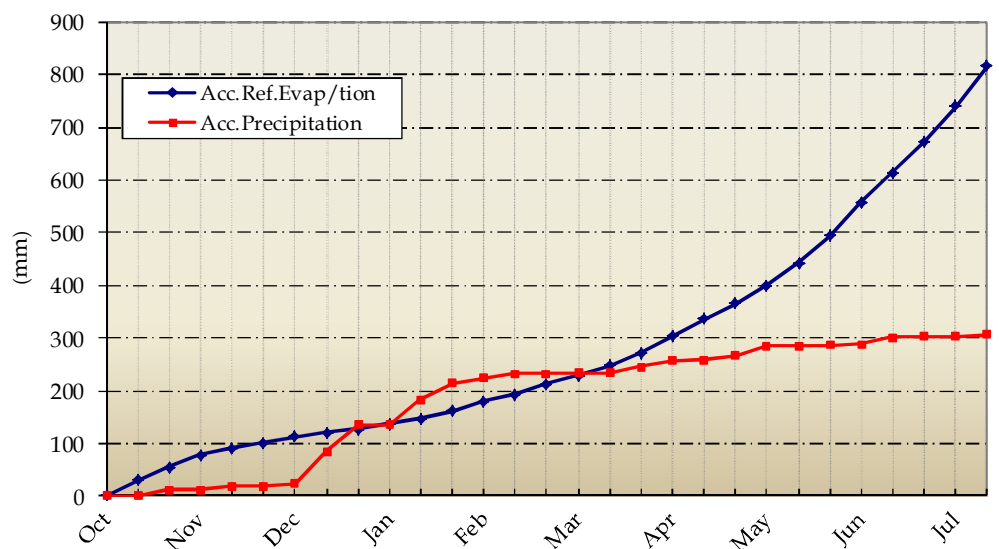
Mikra

1st 10-day period (1-10/07/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.8	35.0	31.6	32.2	33.0	34.4	35.9	34.7	32.9	33.0	34.0	32.0	31.1
	Min	22.0	27.0	21.8	22.0	20.1	20.6	20.9	22.0	25.6	22.8	22.5	21.7	18.5
Relative Humidity	Max	78	80	49	57	76	83	72	78	81	68	72	80	-
	Min	45	28	34	30	33	28	29	39	33	35	33	41	-
Soil Temperature at 10 cm	06 UTC	29.6	29.8	27.2	27.2	28.0	27.8	29.0	29.6	30.4	30.0	28.9	27.3	26.2
	12 UTC	33.6	32.8	29.0	30.2	30.2	29.6	32.2	33.0	33.8	32.8	31.7	29.3	30.9
Sunshine Duration		12.4	12.8	12.6	12.9	8.0	13.4	13.3	12.8	11.8	9.7	12.0	11.0	10.7
Precipitation				2.2								2.2	1.9	8.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	95.7
Growing Degrees	5	24.4	26.0	21.7	22.1	21.6	22.5	23.4	23.4	24.3	22.9	232.2	218.6	198.0
	10	19.4	21.0	16.7	17.1	16.6	17.5	18.4	18.4	19.3	17.9	182.2	168.6	148.0

1st 10-day period (1-10/07/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	75.7	64.7	61.2
Precipitation - Reference Evapotranspiration	-73.5	-62.8	-52.5
Number of Rainy Days	1.0	2.0	1.7
Number of Dry Days	10.0	9.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





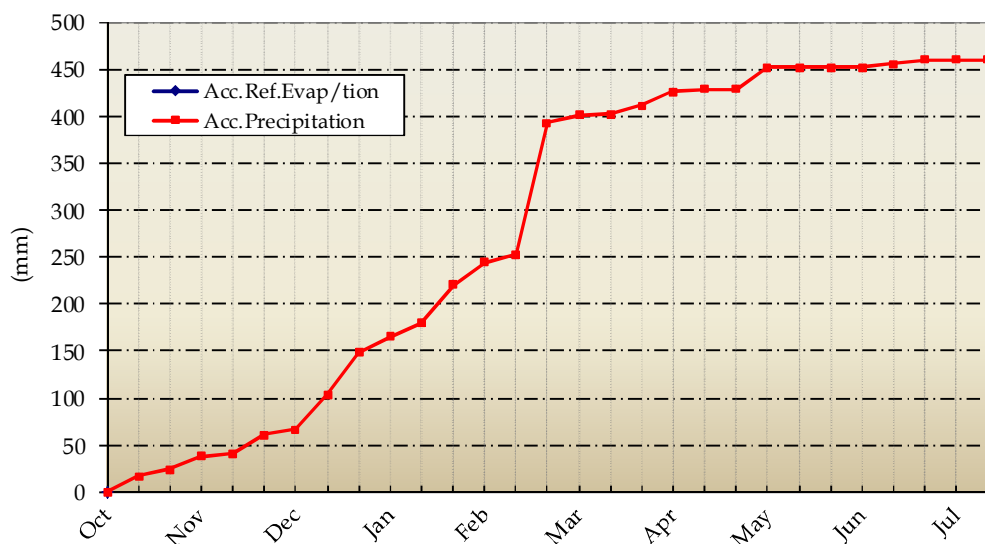
Tanagra

1st 10-day period (1-10/07/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	42.3	36.2	31.8	33.3	34.4	33.5	35.0	33.3	31.0	31.4	34.2	32.1	31.6
	Min	22.0	22.0	22.5	19.8	19.6	20.6	18.6	21.0	25.0	20.4	21.2	20.6	17.5
Relative Humidity	Max	57	69	58	66	79	71	60	59	64	59	64	66	-
	Min	9	11	24	22	22	22	18	27	30	19	20	31	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.1	12.9	12.4	13.3	11.8	12.6	13.2	13.1	13.4	13.3	12.7	11.8	
Precipitation														3.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	27.2	24.1	22.2	21.6	22.0	22.1	21.8	22.2	23.0	20.9	226.9	213.5	
	10	22.2	19.1	17.2	16.6	17.0	17.1	16.8	17.2	18.0	15.9	176.9	163.5	

1st 10-day period (1-10/07/2021)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	3.9
Number of Rainy Days	0.0	1.2
Number of Dry Days	25.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

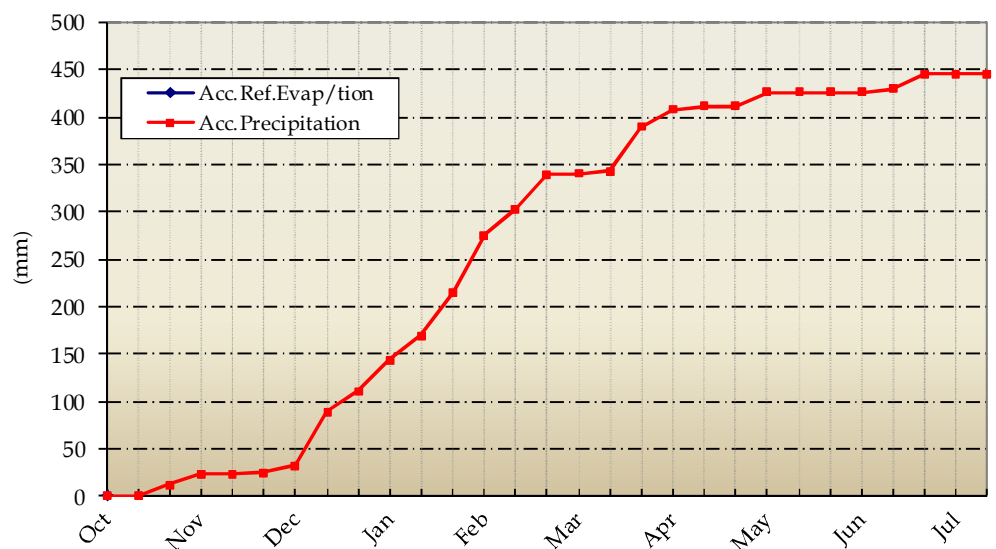


1st 10-day period (1-10/07/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	37.8	34.0	31.3	31.5	32.5	31.4	33.0	32.8	31.8	33.3	32.9	30.7	30.2
	Min	17.3	16.5	15.0	13.3	13.7	14.9	16.3	16.5	17.5	16.7	15.8	16.4	13.4
Relative Humidity	Max	73	85	73	81	81	86	85	80	83	72	80	88	-
	Min	11	33	13	17	18	28	23	25	28	21	22	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	28.1
Sunshine Duration		11.4	11.3	13.2	13.3	13.1	8.8	10.0	13.1	13.0	11.0	11.8	9.4	10.6
Precipitation													35.0	7.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	64.6
Growing Degrees	5	22.6	20.3	18.2	17.4	18.1	18.2	19.7	19.7	19.7	20.0	193.6	185.9	167.9
	10	17.6	15.3	13.2	12.4	13.1	13.2	14.7	14.7	14.7	15.0	143.6	135.9	117.9

1st 10-day period (1-10/07/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	56.4	47.9	53.2
Precipitation - Reference Evapotranspiration	-56.4	-12.9	-46.1
Number of Rainy Days	0.0	3.0	1.3
Number of Dry Days	20.0	3.0	-

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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