



# AGROMETEOROLOGICAL BULLETIN

*March 2022*  
*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



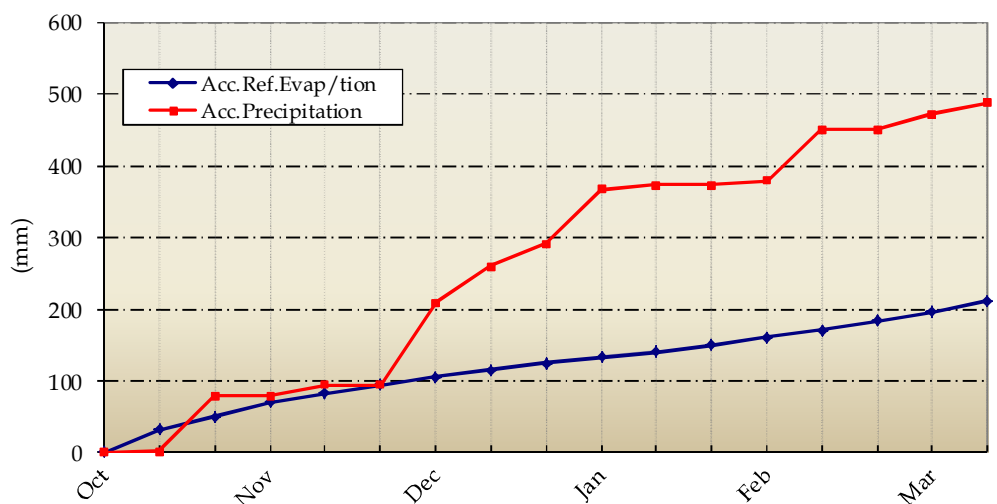
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*Web adresses of HNMS*  
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1st 10-day period (1-10/03/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	7.2	8.0	8.2	11.0	9.0	8.2	9.8	9.0	7.2	5.4	8.3	14.0	12.3
	Min	-1.4	-1.8	0.0	2.6	4.6	3.8	3.6	3.6	1.8	-1.0	1.6	3.6	4.1
Relative Humidity	Max	86	85	89	90	97	94	87	87	79	81	88	88	90
	Min	42	44	55	72	46	84	62	48	33	41	53	49	60
Soil Temperature at 10 cm	06 UTC	4.0	3.5	4.8	5.6	6.6	6.4	5.4	6.2	4.4	3.6	5.0	7.9	8.0
	12 UTC	6.2	7.0	7.4	6.6	7.6	7.2	8.4	7.4	7.6	5.8	7.1	10.7	9.8
Sunshine Duration		7.7	8.0	2.7	3.9	0.0	0.0	5.1	4.0	9.1	7.9	4.8	5.9	4.6
Precipitation					1.1	2.1	11.6	1.4				16.2	1.3	18.9
Evaporation		0.0	0.0	0.0	3.4	1.6	0.6	2.6	0.0	0.0	0.0	8.2	14.9	18.7
Growing Degrees	5	0.0	0.0	0.0	1.8	1.8	1.0	1.7	1.3	0.0	0.0	7.6	37.7	33.4
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	6.9

1st 10-day period (1-10/03/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.3	18.0	12.6
Precipitation - Reference Evapotranspiration	0.9	-16.7	6.3
Number of Rainy Days	4.0	3.0	2.3
Number of Dry Days	3.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

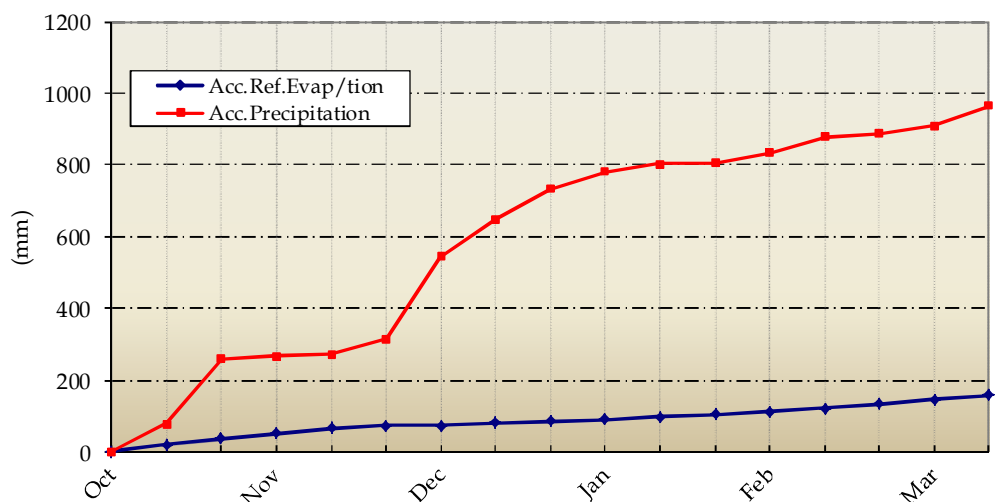


1st 10-day period (1-10/03/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.6	12.1	13.3	14.2	12.4	14.4	13.0	13.1	10.2	10.9	12.7	18.3	16.2
	Min	4.5	6.8	3.1	6.6	8.0	8.9	6.0	6.0	4.4	1.8	5.6	6.6	7.0
Relative Humidity	Max	98	97	96	95	98	95	95	96	95	86	95	94	92
	Min	59	51	52	60	75	56	58	51	62	39	56	45	53
Soil Temperature at 10 cm	06 UTC	11.0	11.4	10.0	11.0	10.0	11.4	11.6	11.0	11.0	9.4	10.8	12.6	11.1
	12 UTC	11.8	12.0	11.0	11.8	11.8	12.2	12.0	12.0	11.2	11.0	11.7	13.6	13.5
Sunshine Duration		6.3	3.5	7.9	4.8	0.0	8.0	1.7	9.1	1.9	8.3	5.2	8.3	5.4
Precipitation		0.9	5.8			30.0	7.1	3.8	0.6	7.1		55.3	8.5	19.3
Evaporation		0.4	1.4	0.6	0.2	0.2	0.1	0.8	0.4	1.3	0.8	6.2	28.8	35.3
Growing Degrees	5	4.1	4.5	3.2	5.4	5.2	6.7	4.5	4.6	2.3	1.4	41.7	74.3	55.9
	10	0.0	0.0	0.0	0.4	0.2	1.7	0.0	0.0	0.0	0.0	2.3	25.0	17.5

1st 10-day period (1-10/03/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.0	17.6	18.8
Precipitation - Reference Evapotranspiration	41.3	-9.1	0.5
Number of Rainy Days	7.0	2.0	3.0
Number of Dry Days	0.0	8.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

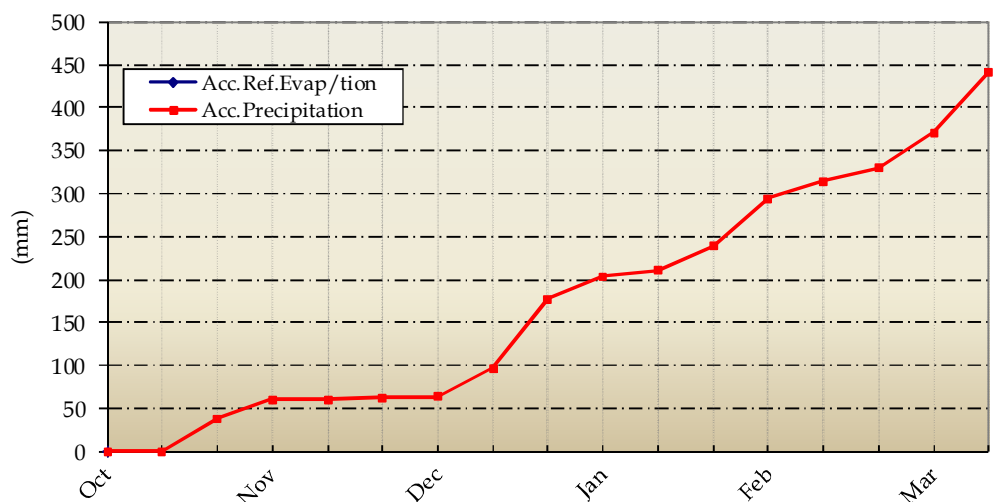


1st 10-day period (1-10/03/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.2	12.0	13.2	15.4	19.2	18.0	16.2	16.0	14.0	9.8	14.7	16.8	17.1
	Min	11.0	9.2	10.0	6.4	9.8	13.2	9.8	8.6	7.2	5.6	9.1	10.8	9.7
Relative Humidity	Max	95	97	79	83	82	93	90	92	91	94	90	87	86
	Min	73	54	48	50	44	49	52	58	61	53	54	60	55
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		0.0	9.0	9.0	4.9	9.5	6.8	8.4	0.8	6.9	0.0	5.5	7.0	6.3
Precipitation		4.2	36.4	0.3			0.0		0.0	5.1	24.4	70.4	2.4	12.7
Evaporation		0.9	-	2.5	2.1	6.6	4.7	2.3	0.0	1.6	3.0	-	29.7	29.0
Growing Degrees	5	7.1	5.6	6.6	5.9	9.5	10.6	8.0	7.3	5.6	2.7	68.9	87.6	76.5
	10	2.1	0.6	1.6	0.9	4.5	5.6	3.0	2.3	0.6	0.0	21.2	37.6	32.0

1st 10-day period (1-10/03/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	
Number of Rainy Days	5.0	5.0	2.4
Number of Dry Days	1.0	7.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

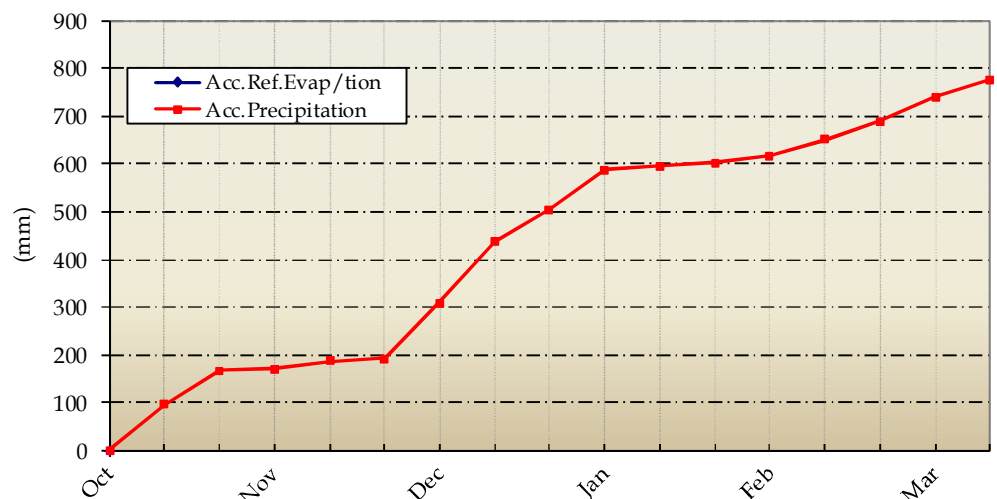


1st 10-day period (1-10/03/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	7.2	9.1	11.1	8.9	9.9	9.7	9.0	8.8	6.2	7.9	8.8	16.3	13.0
	Min	0.4	0.9	-4.4	1.7	0.4	3.9	1.1	2.3	0.0	-1.4	0.5	1.2	2.4
Relative Humidity	Max	98	98	95	99	100	98	99	99	98	65	95	97	95
	Min	53	38	31	51	66	60	52	59	48	26	48	36	56
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	6.6
Sunshine Duration		0.5	8.6	7.9	0.5	1.7	2.8	1.1	1.5	0.0	7.3	3.2	5.9	3.9
Precipitation		2.0			0.3	4.4	20.5	3.4	1.1	4.1		35.8	3.6	30.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	0.0	0.0	0.0	0.3	0.2	1.8	0.1	0.6	0.0	0.0	2.9	37.4	25.6
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	3.0

1st 10-day period (1-10/03/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	11.8
Precipitation - Reference Evapotranspiration	-	-	18.4
Number of Rainy Days	7.0	1.0	3.2
Number of Dry Days	0.0	23.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

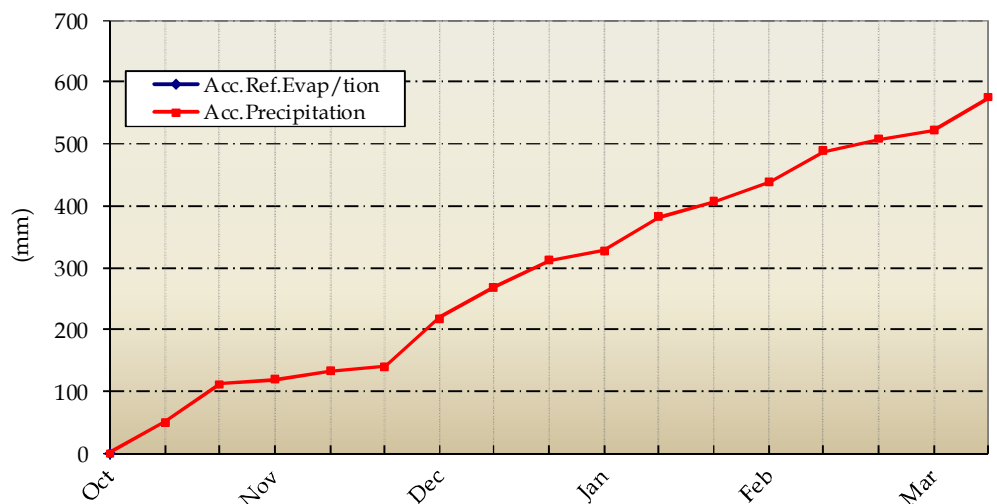


1st 10-day period (1-10/03/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.4	11.2	14.8	13.2	16.4	16.4	14.8	15.3	12.1	12.5	14.2	18.9	17.0
	Min	6.4	6.2	3.0	1.0	6.8	9.2	3.4	5.8	5.6	2.5	5.0	5.8	6.4
Relative Humidity	Max	94	96	89	98	98	99	97	98	95	92	96	88	92
	Min	58	49	40	66	72	48	51	44	51	33	51	39	50
Soil Temperature at 10 cm	06 UTC	11.4	11.2	9.8	10.2	10.8	11.4	10.8	11.0	10.2	10.0	10.7	11.7	11.2
	12 UTC	11.8	11.0	10.6	11.0	11.0	12.0	11.2	11.4	10.8	10.6	11.1	14.3	12.6
Sunshine Duration		5.4	0.8	9.5	1.6	4.5	5.2	4.7	3.2	3.8	7.9	4.7	7.1	5.8
Precipitation		0.1	5.5	0.0	1.9	12.9	21.8	0.0	0.1	0.7	10.6	53.6	1.4	18.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	25.4	23.3
Growing Degrees	5	5.9	3.7	3.9	2.1	6.6	7.8	4.1	5.6	3.9	2.5	46.0	73.6	61.2
	10	0.9	0.0	0.0	0.0	1.6	2.8	0.0	0.6	0.0	0.0	5.9	23.6	18.7

1st 10-day period (1-10/03/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	16.1
Precipitation - Reference Evapotranspiration	-	-	2.1
Number of Rainy Days	8.0	2.0	3.0
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



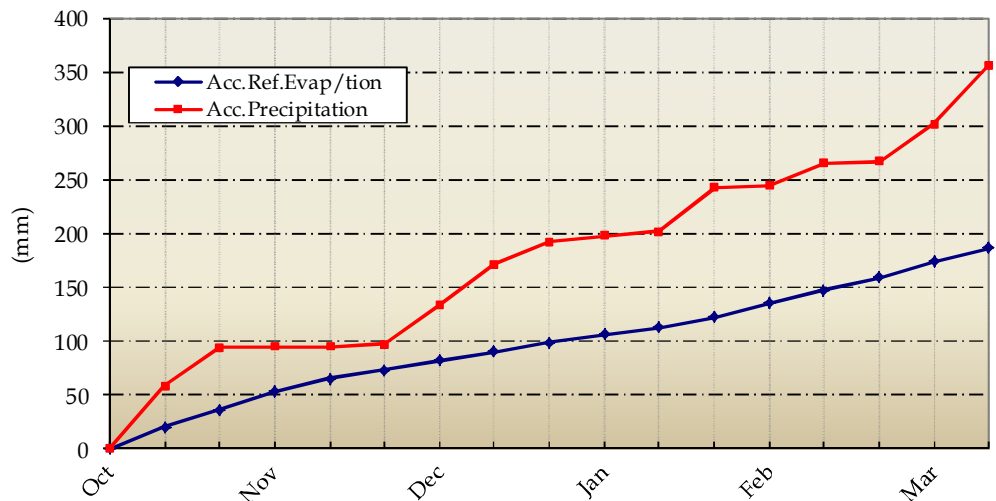
Larisa

1st 10-day period (1-10/03/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	6.2	8.0	10.8	12.6	9.6	11.4	13.0	9.0	6.0	6.8	9.3	16.2	15.2
	Min	3.3	4.0	-2.2	2.0	6.6	6.2	0.6	5.4	2.2	-1.0	2.7	2.7	3.2
Relative Humidity	Max	99	96	95	94	99	99	100	96	95	96	97	93	94
	Min	84	51	38	49	78	71	50	61	55	37	57	44	48
Soil Temperature at 10 cm	06 UTC	8.8	7.0	6.8	7.6	8.2	8.2	8.6	9.4	8.2	6.8	8.0	-	8.7
	12 UTC	8.4	8.0	7.2	8.2	7.2	8.8	8.8	9.4	8.0	7.0	8.1	-	9.5
Sunshine Duration		0.0	2.7	7.9	2.8	0.3	3.6	4.0	1.5	0.0	4.7	2.8	5.3	4.7
Precipitation		10.9	1.5		0.0	7.8	21.2		6.9	6.5	0.0	54.8	3.1	13.3
Evaporation		0.5	0.0	0.0	0.2	6.2	0.1	4.1	2.3	0.0	0.0	13.4	32.1	36.5
Growing Degrees	5	0.0	1.0	0.0	2.3	3.1	3.8	1.8	2.2	0.0	0.0	14.2	44.4	42.7
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	9.3

1st 10-day period (1-10/03/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.0	18.1	19.4
Precipitation - Reference Evapotranspiration	41.8	-15.0	-6.1
Number of Rainy Days	6.0	3.0	3.3
Number of Dry Days	1.0	8.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



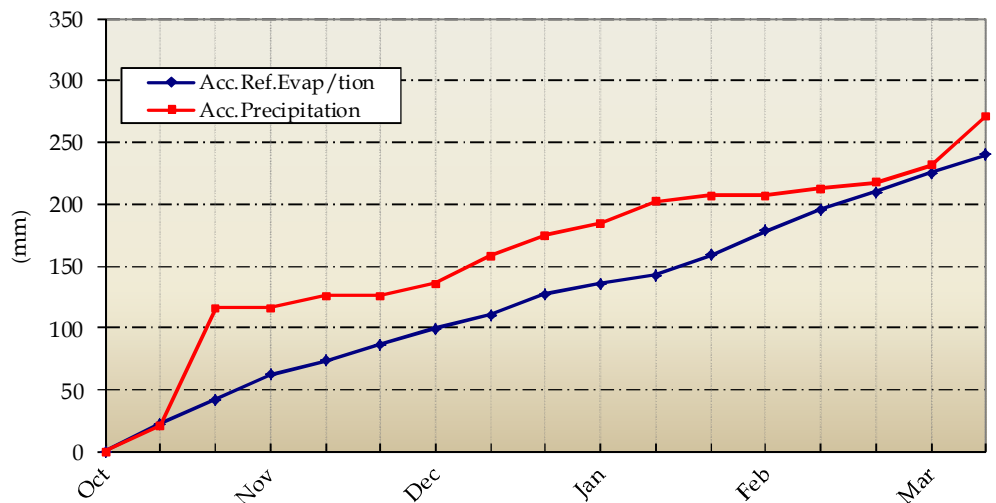
Mikra

1st 10-day period (1-10/03/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	6.4	9.4	11.2	11.4	9.6	8.4	11.0	9.0	7.7	7.0	9.1	14.6	13.7
	Min	4.2	3.9	4.4	1.4	6.7	6.0	3.9	4.1	2.8	0.0	3.7	4.5	4.7
Relative Humidity	Max	100	89	77	100	100	100	100	93	85	74	92	88	88
	Min	73	48	39	57	74	70	63	78	45	32	58	44	51
Soil Temperature at 10 cm	06 UTC	8.0	7.4	6.4	6.8	8.6	8.6	8.0	8.0	6.4	5.8	7.4	9.4	8.6
	12 UTC	8.2	8.0	7.6	9.2	9.0	8.4	9.0	7.6	6.8	6.6	8.0	11.0	11.0
Sunshine Duration		0.1	8.2	9.7	5.2	0.0	0.0	6.0	0.0	1.9	7.4	3.8	6.2	4.9
Precipitation		5.4				4.9	9.8		19.3	0.4		39.8	1.5	13.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	34.1
Growing Degrees	5	0.3	1.7	2.8	1.4	3.2	2.2	2.5	1.6	0.3	0.0	15.8	45.4	38.0
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	8.4

1st 10-day period (1-10/03/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.1	18.2	13.2
Precipitation - Reference Evapotranspiration	24.7	-16.7	0.0
Number of Rainy Days	5.0	3.0	3.0
Number of Dry Days	0.0	13.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





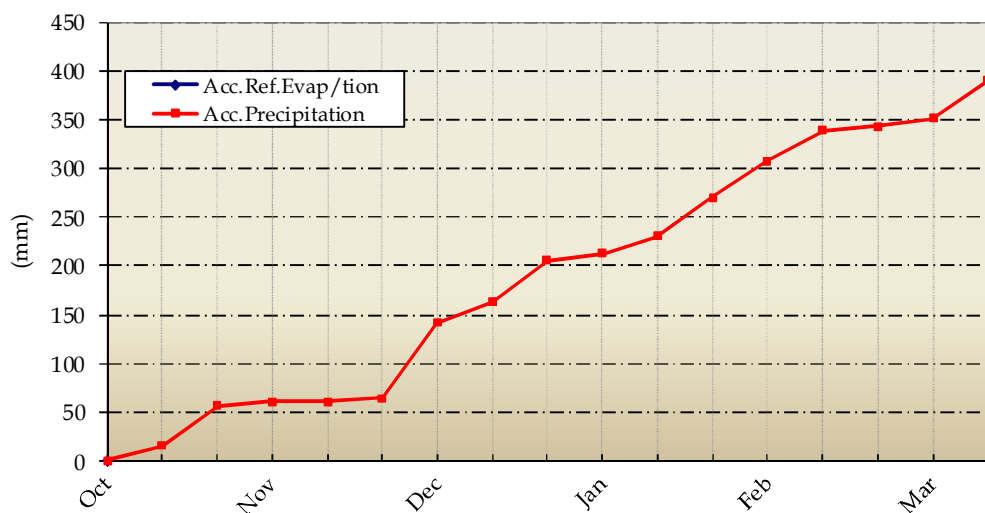
Tanagra

1st 10-day period (1-10/03/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	8.5	7.6	11.2	14.0	13.0	14.3	13.8	10.8	4.0	1.4	9.9	16.0	14.9
	Min	5.6	4.5	0.7	2.5	3.8	8.1	4.4	3.3	3.9	0.4	3.7	4.6	5.1
Relative Humidity	Max	100	93	81	95	100	100	100	99	100	100	97	94	93
	Min	69	57	34	45	59	55	49	59	94	10	53	41	51
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		1.8	0.0	9.8	7.3	1.0	2.0	7.7	3.4	0.1	0.0	3.3	6.2	5.3
Precipitation			0.0			0.5	1.8		0.1	14.7	22.2	39.3	1.5	15.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	25.5
Growing Degrees	5	2.1	1.1	1.0	3.3	3.4	6.2	4.1	2.1	0.0	0.0	23.1	52.9	46.8
	10	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	1.2	10.0	12.6

1st 10-day period (1-10/03/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	
Number of Rainy Days	5.0	2.0	2.9
Number of Dry Days	4.0	8.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

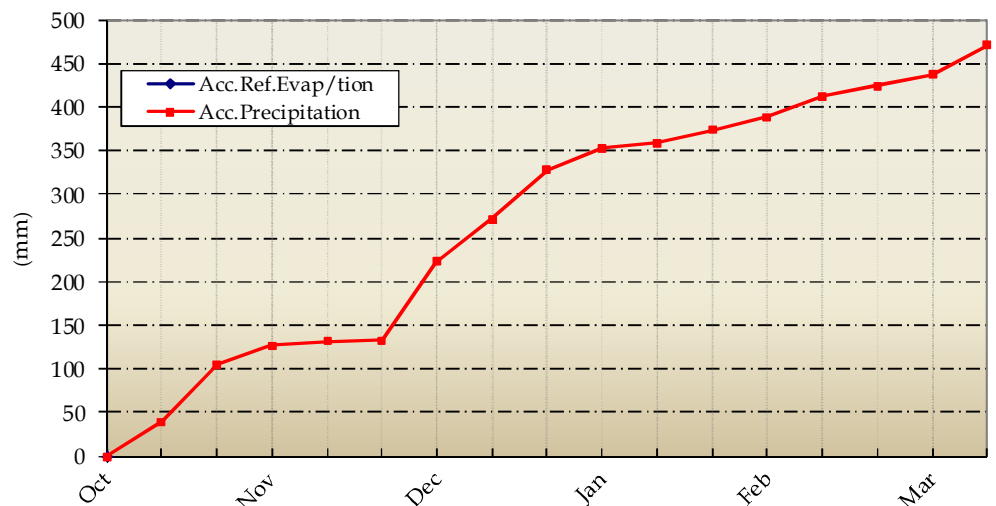


1st 10-day period (1-10/03/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	8.7	5.2	10.2	11.2	11.6	12.8	11.4	10.8	7.2	5.1	9.4	14.3	13.3
	Min	2.9	1.6	-3.6	1.0	1.4	5.0	-1.6	1.0	0.3	-1.3	0.7	1.0	1.9
Relative Humidity	Max	95	98	98	95	97	97	96	93	99	99	97	94	93
	Min	62	67	40	53	80	43	39	40	64	64	55	38	48
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	6.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	8.8
Sunshine Duration		3.1	3.1	8.0	5.3	0.0	5.7	7.7	4.3	3.2	5.1	4.6	6.7	5.5
Precipitation		0.7	4.4			12.3	5.9		0.0	10.0	0.7	34.0	3.0	20.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	49.7
Growing Degrees	5	0.8	0.0	0.0	1.1	1.5	3.9	0.0	0.9	0.0	0.0	8.2	27.1	26.3
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2

1st 10-day period (1-10/03/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.2	17.2	18.1
Precipitation - Reference Evapotranspiration	20.8	-14.2	2.7
Number of Rainy Days	6.0	3.0	3.1
Number of Dry Days	0.0	7.0	

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.

**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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