



# AGROMETEOROLOGICAL BULLETIN

*April 2023*  
*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



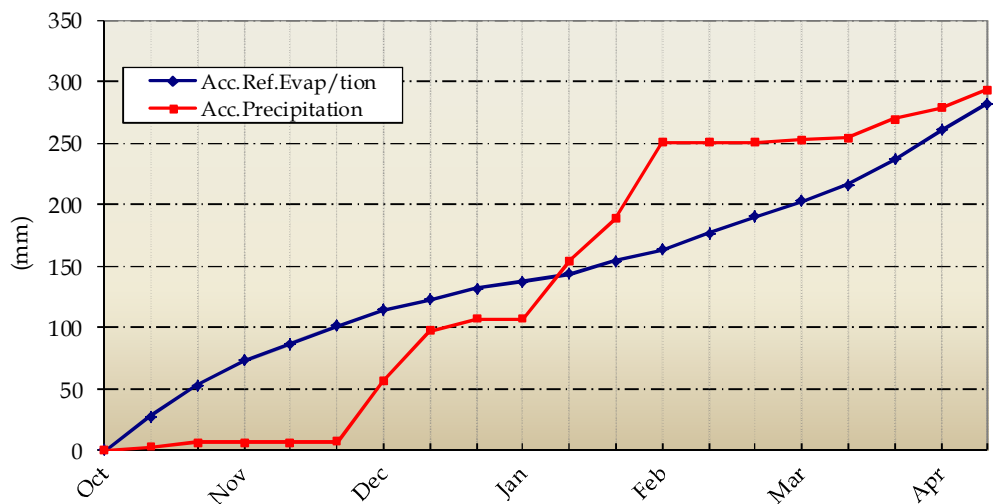
Hellenic National Meteorological Service  
Division of Climatology-Applications  
El. Venizelou Street 14, 16777  
Helliniko, Athens

*Web adresses of HNMS*  
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1st 10-day period (1-10/04/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.2	18.0	17.4	18.4	12.6	10.8	15.4	17.0	17.0	13.2	15.8	17.6	16.2
	Min	8.0	9.8	8.2	10.6	8.0	5.4	4.6	2.8	7.6	3.4	6.8	8.5	6.4
Relative Humidity	Max	95	95	93	93	94	94	94	93	89	84	92	91	87
	Min	68	65	68	60	74	62	57	45	46	50	60	52	49
Soil Temperature at 10 cm	06 UTC	11.8	13.2	12.6	12.0	13.0	11.4	10.4	10.4	11.2	11.5	11.8	12.5	11.1
	12 UTC	13.8	15.6	14.0	14.2	13.0	11.7	12.2	14.4	14.0	12.3	13.5	14.7	14.0
Sunshine Duration		8.7	5.2	0.5	4.4	0.0	1.6	5.3	9.7	10.1	0.3	4.6	8.0	6.5
Precipitation		0.0		1.5	6.9	6.3					0.0	14.7	3.9	11.7
Evaporation		3.8	2.1	4.0	3.0	0.9	0.9	2.8	3.2	5.9	3.0	29.6	34.5	41.9
Growing Degrees	5	8.1	8.9	7.8	9.5	5.3	3.1	5.0	4.9	7.3	3.3	63.2	80.7	58.0
	10	3.1	3.9	2.8	4.5	0.3	0.0	0.0	0.0	2.3	0.0	16.9	30.7	18.0

1st 10-day period (1-10/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	21.9	28.0	20.5
Precipitation - Reference Evapotranspiration	-7.2	-24.1	-8.8
Number of Rainy Days	3.0	2.0	2.0
Number of Dry Days	5.0	16.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

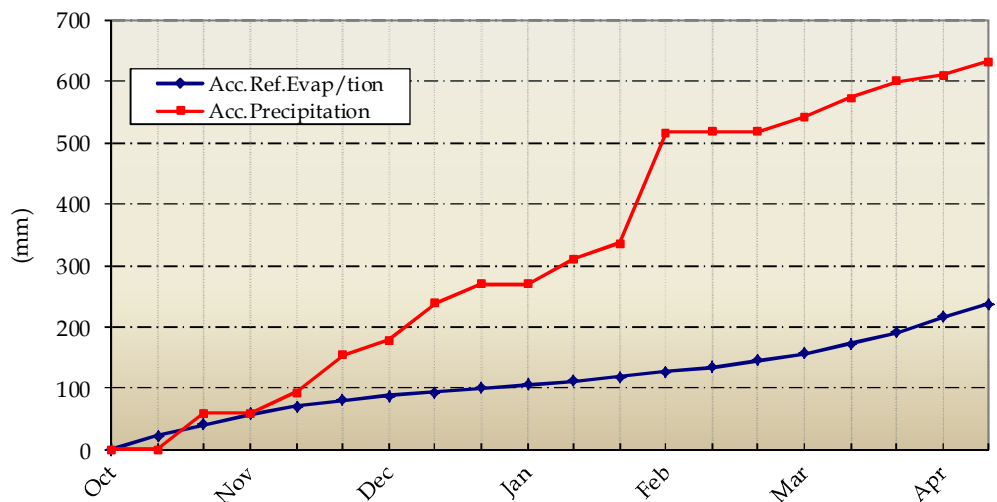


1st 10-day period (1-10/04/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.6	18.7	18.7	16.6	16.2	15.3	15.6	16.2	17.2	15.9	16.9	19.4	18.4
	Min	11.8	13.7	12.6	9.0	7.1	9.3	7.4	6.4	7.5	9.0	9.4	10.7	8.7
Relative Humidity	Max	96	97	97	97	90	96	96	91	92	96	95	93	91
	Min	74	70	65	67	54	58	49	54	56	62	61	52	48
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	13.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	17.2
Sunshine Duration		2.7	1.4	4.3	5.9	8.2	5.2	5.9	6.6	6.9	5.3	5.2	5.9	7.6
Precipitation			2.7	2.7	7.7		6.6	0.9			1.8	22.4	0.7	12.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	51.4
Growing Degrees	5	10.2	11.2	10.7	7.8	6.7	7.3	6.5	6.3	7.4	7.5	81.4	100.6	73.0
	10	5.2	6.2	5.7	2.8	1.7	2.3	1.5	1.3	2.4	2.5	31.4	50.6	31.0

1st 10-day period (1-10/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	21.3	23.8	18.9
Precipitation - Reference Evapotranspiration	1.1	-23.1	-6.2
Number of Rainy Days	6.0	1.0	2.4
Number of Dry Days	4.0	8.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

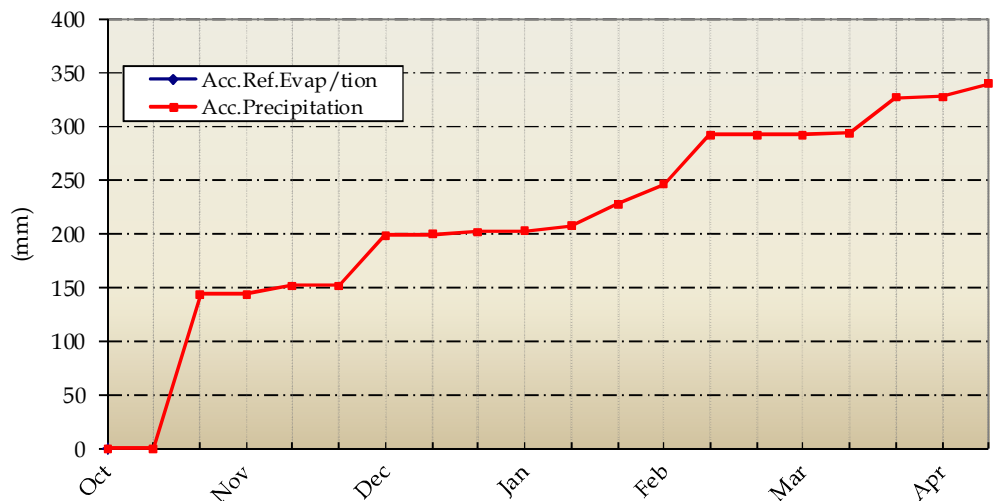


1st 10-day period (1-10/04/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.8	25.6	24.4	20.4	18.6	18.6	17.8	15.6	18.6	17.0	20.0	21.9	19.1
	Min	12.4	12.6	19.6	14.2	11.6	11.8	9.4	10.6	13.6	10.4	12.6	14.0	11.3
Relative Humidity	Max	86	69	85	87	86	91	88	88	90	95	86	83	85
	Min	53	34	44	60	57	62	66	75	66	68	58	41	54
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.6	5.0	6.9	7.8	10.7	4.4	7.6	0.0	7.1	9.0	6.9	8.2	7.1
Precipitation				0.1	0.9		3.2		0.0		7.5	11.7		11.0
Evaporation		4.0	11.7	6.0	3.6	2.4	1.7	3.6	1.5	2.9	1.2	38.6	44.1	36.6
Growing Degrees	5	13.1	14.1	17.0	12.3	10.1	10.2	8.6	8.1	11.1	8.7	113.3	129.8	91.8
	10	8.1	9.1	12.0	7.3	5.1	5.2	3.6	3.1	6.1	3.7	63.3	79.8	46.7

1st 10-day period (1-10/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	4.0	0.0	2.6
Number of Dry Days	11.0	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

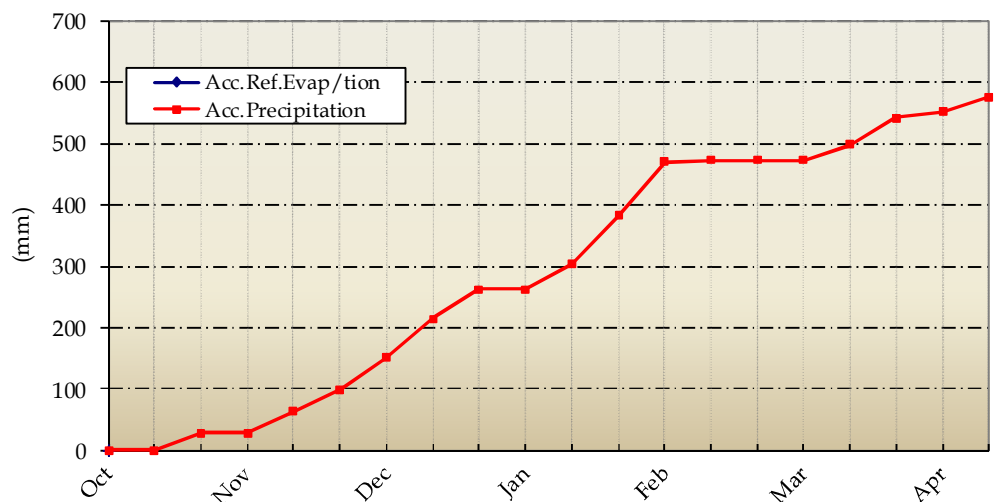


1st 10-day period (1-10/04/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.1	17.8	13.6	14.1	13.3	11.5	14.6	15.1	13.2	13.7	14.4	16.3	16.6
	Min	10.2	6.7	6.1	5.1	3.2	5.0	1.0	-0.8	3.6	4.8	4.5	5.9	5.0
Relative Humidity	Max	100	95	100	100	100	100	100	100	100	96	99	97	93
	Min	56	51	56	67	47	60	35	32	40	60	50	52	45
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	9.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.8
Sunshine Duration		1.0	2.9	0.0	2.5	4.8	0.9	8.6	8.2	2.1	1.8	3.3	4.6	5.4
Precipitation		0.0	0.0	7.4	3.4		11.6			1.6	0.2	24.2	43.6	19.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	8.7	7.3	4.9	4.6	3.3	3.3	2.8	2.2	3.4	4.3	44.5	61.2	45.5
	10	3.7	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	15.9	12.0

1st 10-day period (1-10/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	24.0
Precipitation - Reference Evapotranspiration	-	-	-4.5
Number of Rainy Days	5.0	6.0	2.8
Number of Dry Days	5.0	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

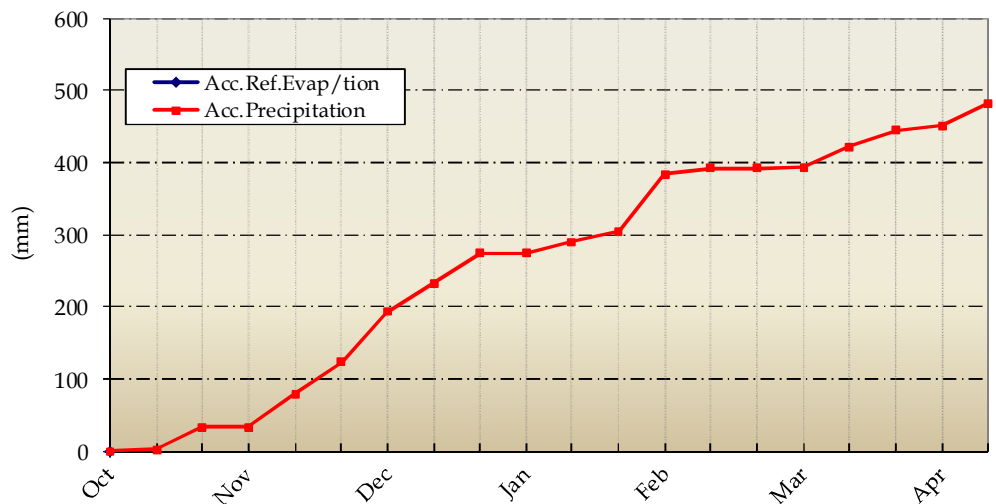


1st 10-day period (1-10/04/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.6	16.8	18.7	19.2	19.2	17.4	19.7	18.7	18.9	18.1	18.7	21.8	19.1
	Min	8.3	8.5	11.3	10.0	5.8	7.6	6.5	6.3	6.6	8.6	8.0	10.1	7.9
Relative Humidity	Max	97	97	94	97	97	97	94	94	96	97	96	92	91
	Min	64	81	65	51	41	52	33	41	51	52	53	43	45
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	15.4	13.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	17.2	15.6
Sunshine Duration		8.9	0.0	2.7	6.4	9.3	6.1	11.1	8.9	6.5	6.0	6.6	8.9	7.7
Precipitation			4.6	1.4	5.1		13.9	0.1		2.5	4.0	31.6	0.0	17.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	35.1
Growing Degrees	5	9.5	7.7	10.0	9.6	7.5	7.5	8.1	7.5	7.8	8.4	83.4	109.5	77.4
	10	4.5	2.7	5.0	4.6	2.5	2.5	3.1	2.5	2.8	3.4	33.4	59.5	32.3

1st 10-day period (1-10/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	26.1
Precipitation - Reference Evapotranspiration	-	-	-8.5
Number of Rainy Days	7.0	0.0	2.7
Number of Dry Days	4.0	11.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



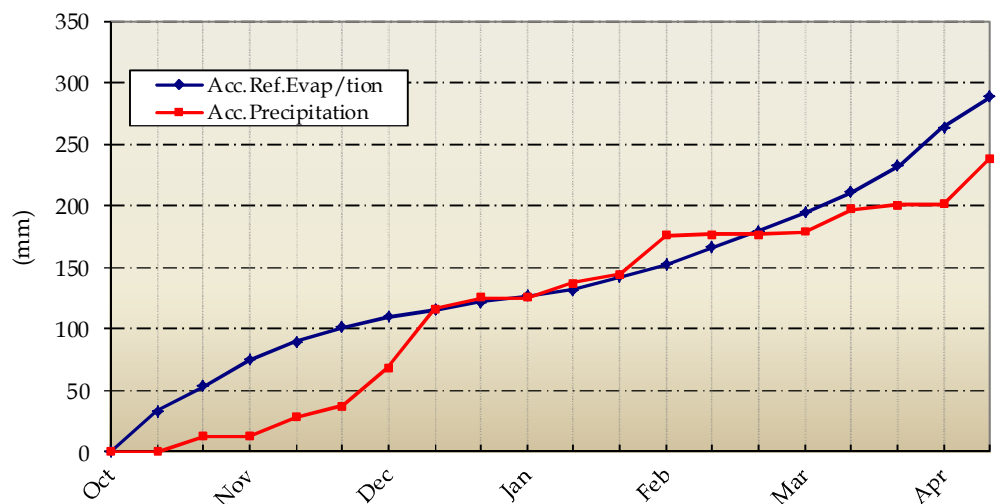


Larisa

1st 10-day period (1-10/04/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.8	20.2	13.6	17.0	16.0	14.0	16.4	17.0	17.0	15.0	17.0	20.5	18.7
	Min	9.4	8.0	8.8	5.8	7.0	7.4	4.0	3.6	9.7	8.8	7.2	7.1	6.0
Relative Humidity	Max	79	95	100	100	100	100	100	100	100	100	97	91	93
	Min	33	38	80	56	38	54	46	58	53	52	51	40	44
Soil Temperature at 10 cm	06 UTC	15.0	14.2	15.4	13.4	14.2	13.8	13.4	13.0	14.4	14.2	14.1	12.8	12.0
	12 UTC	16.0	13.8	13.8	14.0	15.0	15.0	14.4	14.8	15.0	15.0	14.7	14.1	13.2
Sunshine Duration		8.9	5.9	0.0	4.4	8.0	2.9	9.2	9.5	1.9	1.7	5.2	6.8	6.5
Precipitation			0.0	18.6	13.1	0.3	0.1			4.2	1.0	37.3	2.5	12.1
Evaporation		2.0	5.2	0.4	0.3	7.1	2.5	6.8	2.6	3.5	0.9	31.3	44.3	36.3
Growing Degrees	5	11.6	9.1	6.2	6.4	6.5	5.7	5.2	5.3	8.4	6.9	71.3	87.9	66.3
	10	6.6	4.1	1.2	1.4	1.5	0.7	0.2	0.3	3.4	1.9	21.3	38.7	23.9

1st 10-day period (1-10/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	24.5	31.8	50.3
Precipitation - Reference Evapotranspiration	12.8	-29.3	-38.2
Number of Rainy Days	6.0	3.0	2.8
Number of Dry Days	11.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



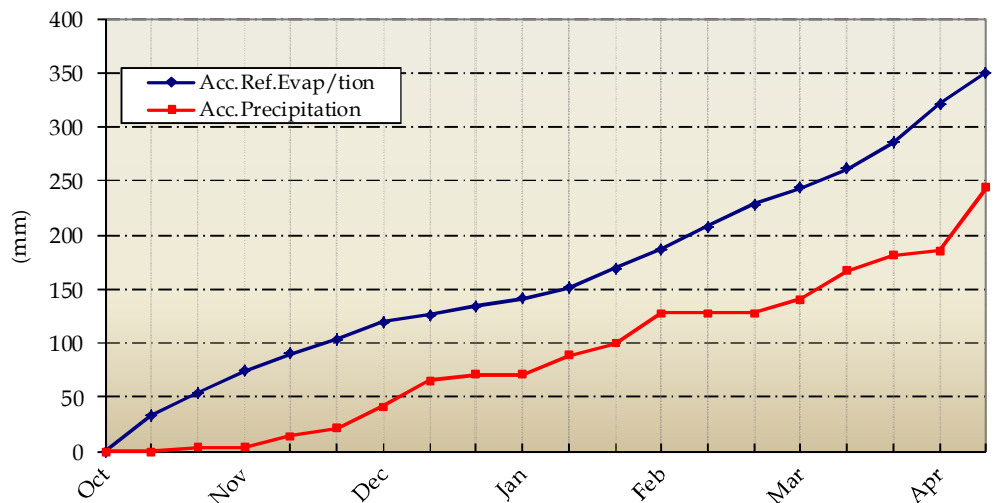
Mikra

1st 10-day period (1-10/04/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	19.4	16.0	15.6	15.3	14.4	15.6	14.2	15.6	15.0	16.5	20.2	17.6
	Min	8.8	10.0	7.6	8.0	7.0	8.5	7.5	7.3	5.8	10.2	8.1	8.3	7.7
Relative Humidity	Max	92	77	100	100	64	60	81	94	98	100	87	89	85
	Min	34	41	74	55	44	43	27	66	54	55	49	38	46
Soil Temperature at 10 cm	06 UTC	12.4	13.2	13.0	11.6	10.2	10.8	10.2	11.6	11.4	12.4	11.7	12.8	12.1
	12 UTC	18.4	15.0	13.2	12.8	11.4	11.8	12.5	13.0	13.0	13.8	13.5	14.4	15.4
Sunshine Duration		7.7	4.9	0.0	6.6	7.7	2.5	11.2	2.4	5.7	4.2	5.3	7.7	6.4
Precipitation		0.0		51.0	3.5				0.0	0.3	3.8	58.6	0.0	13.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	36.3
Growing Degrees	5	11.4	9.7	6.8	6.8	6.2	6.5	6.6	5.8	5.7	7.6	72.9	93.0	66.9
	10	6.4	4.7	1.8	1.8	1.2	1.5	1.6	0.8	0.7	2.6	22.9	43.5	25.0

1st 10-day period (1-10/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.9	35.6	22.1
Precipitation - Reference Evapotranspiration	29.7	-35.6	-8.3
Number of Rainy Days	4.0	0.0	2.3
Number of Dry Days	6.0	10.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





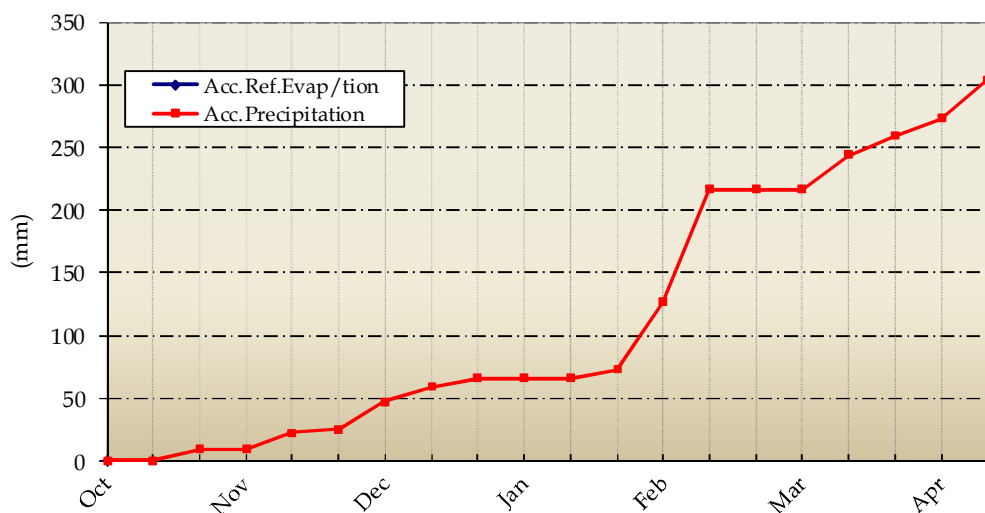
Tanagra

1st 10-day period (1-10/04/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.9	15.2	17.2	15.8	18.2	15.2	14.8	16.6	17.5	12.8	16.6	21.4	17.6
	Min	10.7	12.5	11.4	9.6	6.8	5.3	3.4	4.6	4.5	6.7	7.6	9.8	6.8
Relative Humidity	Max	77	98	99	99	87	95	98	97	98	98	95	78	90
	Min	35	51	62	55	31	52	48	52	41	56	48	33	43
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.4	0.0	0.4	2.2	11.0	4.7	4.5	5.4	10.1	2.8	5.0	9.8	6.9
Precipitation			2.6	8.9	9.8		7.3				2.1	30.7	0.6	14.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	33.6
Growing Degrees	5	11.8	8.9	9.3	7.7	7.5	5.3	4.1	5.6	6.0	4.8	70.9	106.1	64.3
	10	6.8	3.9	4.3	2.7	2.5	0.3	0.0	0.6	1.0	0.0	22.0	56.1	22.8

1st 10-day period (1-10/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	5.0	1.0	2.6
Number of Dry Days	3.0	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



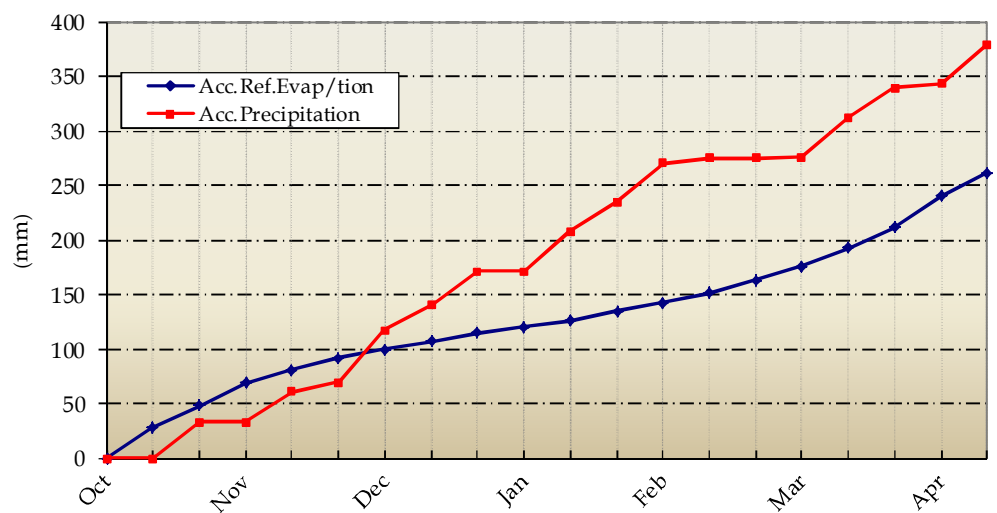
Tripoli

1st 10-day period (1-10/04/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.6	15.5	13.2	14.2	14.0	11.2	14.0	13.9	15.4	11.9	14.1	18.6	16.1
	Min	8.3	6.8	7.0	5.6	5.0	3.7	-0.6	0.7	0.4	2.6	4.0	6.0	3.7
Relative Humidity	Max	93	98	98	97	93	99	100	99	100	98	98	89	91
	Min	47	58	63	54	34	54	38	49	36	60	49	33	38
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	9.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	12.6
Sunshine Duration		6.4	0.9	2.4	4.8	10.5	5.0	9.1	4.5	6.1	1.5	5.1	9.4	6.9
Precipitation			1.2	8.6	5.9		13.8	0.4		0.0	6.1	36.0	1.4	13.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	27.7
Growing Degrees	5	8.0	6.2	5.1	4.9	4.5	2.5	1.7	2.3	2.9	2.3	40.2	73.2	41.9
	10	3.0	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	23.3	9.6

1st 10-day period (1-10/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	21.2	30.8	20.3
Precipitation - Reference Evapotranspiration	14.8	-29.4	-6.5
Number of Rainy Days	6.0	3.0	2.9
Number of Dry Days	4.0	3.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





## ◆ List of Symbols and Abbreviations

### Reference Evapotranspiration $E_{To}$ (mm):

Calculated by the FAO Penman-Montieth equation

$$E_{T_0} = \frac{0.408 * \Delta * (R_n - G) + \gamma * \frac{900}{T + 273} * u_2 * (e_s - e_a)}{\Delta + \gamma * (1 + 0.34 * u_2)}$$

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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HELLENIC NATIONAL METEOROLOGICAL SERVICE

Division of Climatology-Applications

Issue Editors :

Papakrivou Anastasia

anastasia.papakrivou@hnms.gr

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