



AGROMETEOROLOGICAL BULLETIN

February 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
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 Helliniko, Athens

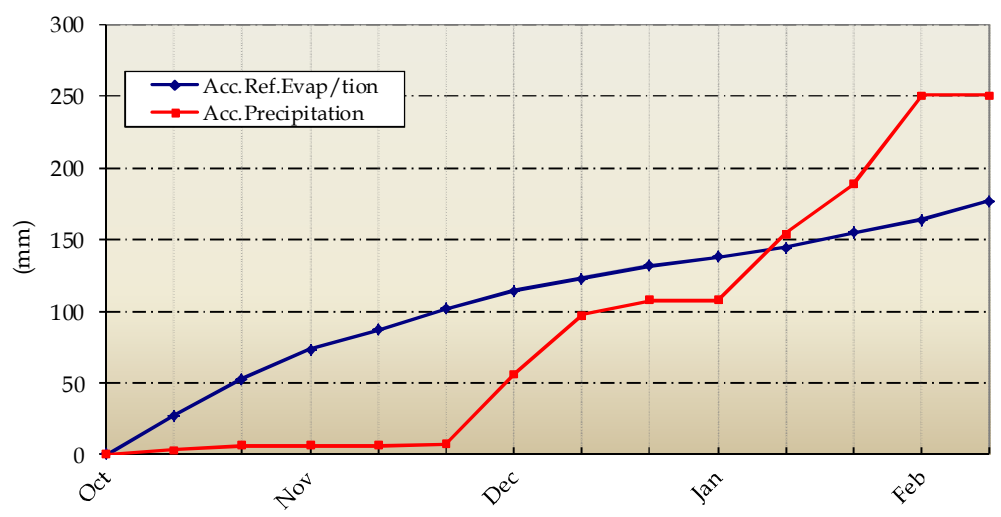
Web adresses of HNMS
www.emy.gr
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

Alexandroupoli

1st 10-day period (1-10/02/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	10.4	12.2	10.0	11.4	6.0	3.6	3.4	4.6	5.4	7.4	7.4	10.3	9.8
	Min	-2.2	0.6	2.8	0.6	1.6	-0.4	-1.0	-3.6	0.2	0.2	-0.1	0.8	1.5
Relative Humidity	Max	93	89	90	90	86	89	77	73	64	75	83	93	89
	Min	29	43	44	45	67	47	36	39	37	40	43	56	60
Soil Temperature at 10 cm	06 UTC	4.6	5.2	6.4	6.6	6.0	4.0	2.4	3.2	2.6	3.0	4.4	4.5	5.6
	12 UTC	7.4	7.6	7.6	8.4	6.2	3.9	3.8	3.6	3.6	5.2	5.7	6.6	7.0
Sunshine Duration		7.6	8.1	5.4	3.5	0.2	2.8	8.1	8.7	4.1	9.2	5.8	4.3	4.2
Precipitation													70.3	16.4
Evaporation		0.0	0.5	2.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	3.9	3.5	10.6
Growing Degrees	5	0.0	1.4	1.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	11.3	19.7
	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	3.3

1st 10-day period (1-10/02/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.1	10.3	9.0
Precipitation - Reference Evapotranspiration	-13.1	60.0	7.4
Number of Rainy Days	0.0	4.0	2.1
Number of Dry Days	10.0	9.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

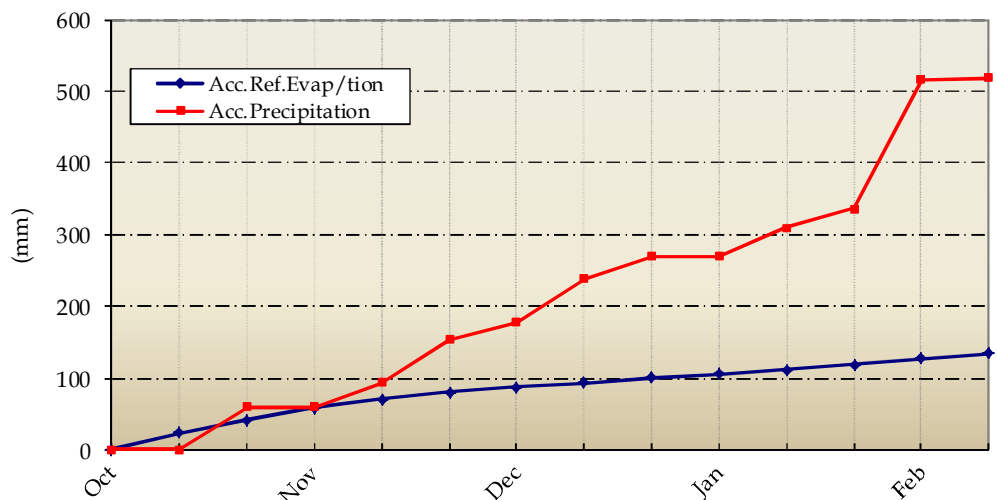


1st 10-day period (1-10/02/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.3	15.0	12.9	14.4	9.0	9.3	9.5	9.0	11.2	12.8	11.4	14.9	14.4
	Min	0.2	2.0	4.4	3.2	4.4	0.0	2.9	-3.0	-2.0	0.0	1.2	5.2	5.5
Relative Humidity	Max	86	97	96	94	89	89	90	93	88	92	91	90	90
	Min	37	55	62	62	45	43	43	35	38	41	46	50	54
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	9.3	9.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	10.1	11.2
Sunshine Duration		9.1	6.8	5.7	3.4	4.5	7.1	4.2	3.7	0.2	8.7	5.3	6.0	4.7
Precipitation			0.4	0.7	0.2	0.2						1.5	42.2	23.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	6.6	31.5
Growing Degrees	5	0.8	3.5	3.7	3.8	1.7	0.0	1.2	0.0	0.0	1.4	16.0	50.2	40.7
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	9.0

1st 10-day period (1-10/02/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	7.8	9.8	7.7
Precipitation - Reference Evapotranspiration	-6.3	32.4	15.3
Number of Rainy Days	4.0	4.0	3.2
Number of Dry Days	1.0	2.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



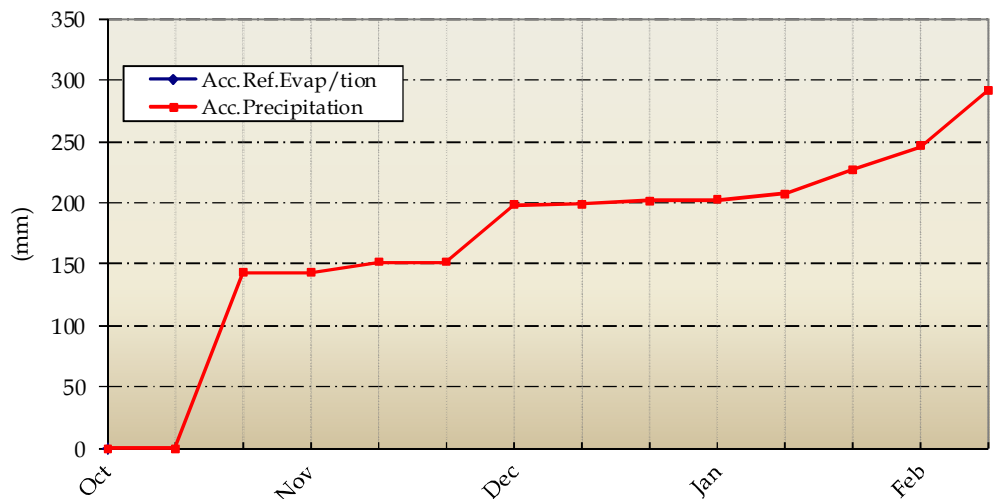
Iraklio

1st 10-day period (1-10/02/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.4	15.2	16.0	16.0	12.0	8.8	9.8	9.0	10.2	11.8	12.0	15.2	15.3
	Min	8.4	5.0	7.8	5.2	9.8	7.0	8.2	4.6	7.8	7.6	7.1	9.2	8.9
Relative Humidity	Max	89	78	87	90	91	85	91	82	72	75	84	85	85
	Min	58	60	60	52	58	64	68	55	59	58	59	53	56
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		3.9	8.5	8.4	6.9	1.6	1.2	1.0	1.4	0.0	1.6	3.4	5.5	4.7
Precipitation		10.0		4.9	2.0	12.8	9.8	2.7	3.4			45.6	20.5	20.4
Evaporation		-	1.6	4.8	0.8	1.2	3.5	2.0	0.9	2.7	2.1	-	22.8	24.4
Growing Degrees	5	4.9	5.1	6.9	5.6	5.9	2.9	4.0	1.8	4.0	4.7	45.8	71.8	62.9
	10	0.0	0.1	1.9	0.6	0.9	0.0	0.0	0.0	0.0	0.0	3.5	23.3	21.4

1st 10-day period (1-10/02/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	
Number of Rainy Days	7.0	5.0	3.7
Number of Dry Days	0.0	1.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

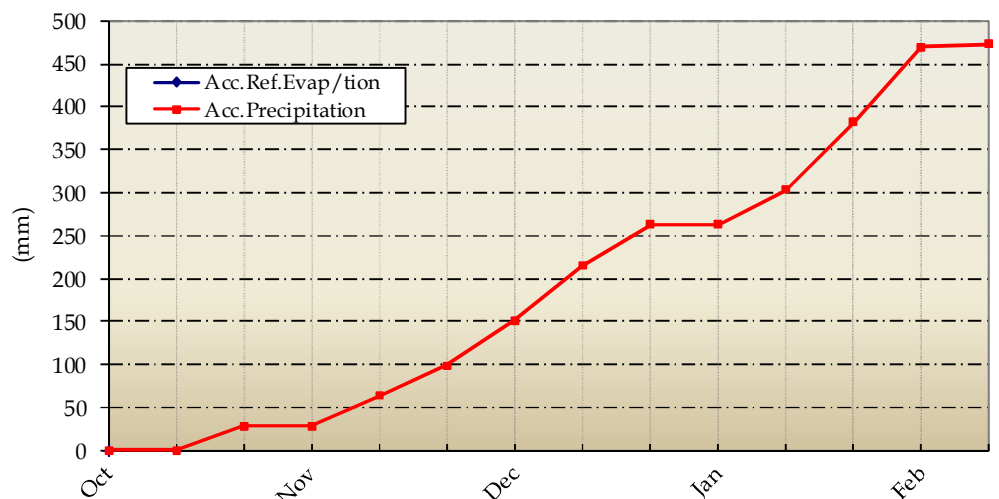


1st 10-day period (1-10/02/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	10.8	12.2	11.0	9.2	4.2	3.6	4.4	5.2	7.6	8.0	7.6	11.3	10.1
	Min	-4.6	-5.7	-2.6	-3.3	-1.0	-2.0	-3.9	-5.6	-0.1	-2.8	-3.2	-0.3	0.4
Relative Humidity	Max	96	100	100	95	90	61	63	52	77	89	82	97	94
	Min	28	39	23	46	34	31	30	28	33	36	33	44	58
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	3.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	4.1
Sunshine Duration		8.7	7.2	6.6	3.3	8.0	6.1	7.0	8.9	7.7	7.9	7.1	5.2	3.1
Precipitation			0.0	2.5	0.1	0.1						2.7	33.8	28.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3	10.8
	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	0.6

1st 10-day period (1-10/02/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	10.5
Precipitation - Reference Evapotranspiration	-	-	17.5
Number of Rainy Days	3.0	4.0	2.8
Number of Dry Days	6.0	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



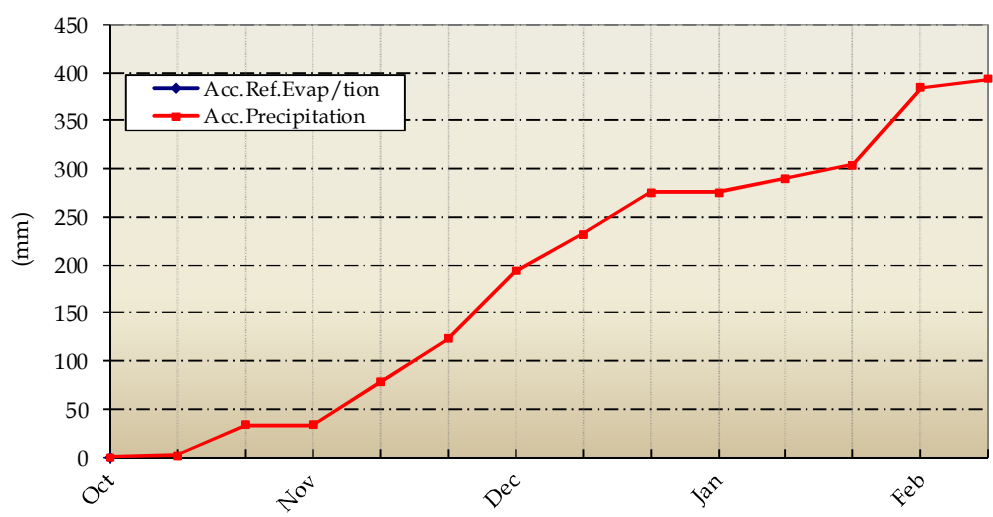
Kalamata

1st 10-day period (1-10/02/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.1	15.3	15.5	10.3	12.5	12.3	8.2	9.7	11.9	14.2	12.4	15.8	15.1
	Min	1.5	-0.8	2.2	0.2	3.8	3.8	4.2	2.8	3.8	2.4	2.4	5.3	5.3
Relative Humidity	Max	92	98	98	97	95	64	64	58	72	77	82	85	90
	Min	22	50	42	66	47	29	42	34	32	32	40	47	52
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	9.4	9.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	10.1	10.7
Sunshine Duration		8.8	5.6	7.5	1.9	5.3	5.2	0.1	1.3	1.7	9.1	4.6	5.5	4.6
Precipitation			0.6	1.7	1.0	5.6		0.0				8.9	50.7	30.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	26.1
Growing Degrees	5	2.8	2.3	3.9	0.3	3.2	3.1	1.2	1.3	2.9	3.3	24.0	55.6	46.4
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.9	9.9

1st 10-day period (1-10/02/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	10.4
Precipitation - Reference Evapotranspiration	-	-	20.0
Number of Rainy Days	4.0	3.0	4.1
Number of Dry Days	1.0	2.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

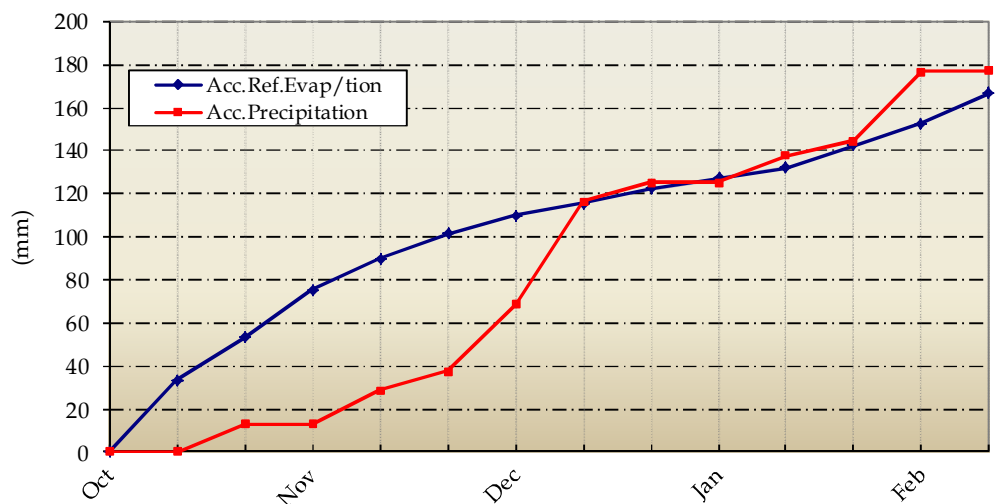


Larisa

1st 10-day period (1-10/02/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.2	15.3	12.2	15.0	7.8	4.8	5.2	5.4	5.2	6.0	8.8	12.5	11.5
	Min	-3.0	-3.4	1.8	-2.0	1.6	-1.0	-0.4	-3.8	-1.4	1.0	-1.1	0.5	0.7
Relative Humidity	Max	92	96	94	95	66	64	61	79	88	100	84	96	95
	Min	33	31	33	36	41	36	30	39	42	52	37	49	54
Soil Temperature at 10 cm	06 UTC	8.2	6.8	7.4	7.0	8.0	6.2	5.8	5.2	5.4	6.0	6.6	5.6	5.8
	12 UTC	8.2	7.0	7.8	7.8	7.4	6.4	6.0	5.4	5.8	6.2	6.8	5.9	6.4
Sunshine Duration		8.0	7.3	6.4	5.1	0.0	6.2	5.8	5.2	1.9	0.0	4.6	5.3	3.9
Precipitation				0.2	0.4	0.1						0.7	21.2	12.2
Evaporation		0.0	0.0	1.4	3.9	0.0	0.0	0.0	0.0	0.0	0.0	5.3	3.6	15.8
Growing Degrees	5	0.0	1.0	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	4.5	16.6	18.4
	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	1.6

1st 10-day period (1-10/02/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.0	11.6	10.1
Precipitation - Reference Evapotranspiration	-13.3	9.6	2.1
Number of Rainy Days	3.0	3.0	2.5
Number of Dry Days	6.0	9.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



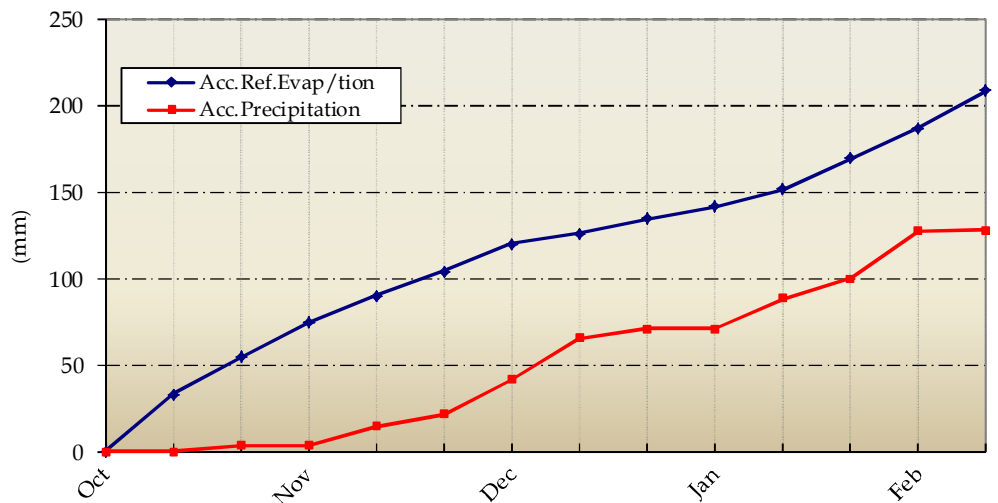
Mikra

1st 10-day period (1-10/02/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.5	12.2	10.7	13.0	8.4	5.3	5.8	6.0	7.4	8.4	8.9	11.0	10.6
	Min	5.0	-0.2	1.4	1.3	2.0	0.0	0.4	-5.9	-4.5	-3.5	-0.4	2.7	2.3
Relative Humidity	Max	83	84	83	72	58	59	70	74	77	81	74	87	88
	Min	39	32	37	42	50	36	34	29	34	37	37	50	56
Soil Temperature at 10 cm	06 UTC	6.2	6.0	6.4	6.4	6.2	4.0	4.0	2.8	3.2	3.4	4.9	5.6	5.7
	12 UTC	6.8	7.8	7.6	7.6	5.8	4.8	5.3	4.2	4.6	4.8	5.9	6.5	7.5
Sunshine Duration		9.2	7.1	8.5	6.9	0.0	8.5	7.0	8.7	8.7	8.6	7.3	5.7	4.2
Precipitation				0.4								0.4	5.2	9.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	15.4
Growing Degrees	5	3.3	1.0	1.1	2.2	0.2	0.0	0.0	0.0	0.0	0.0	7.7	18.8	19.9
	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	1.6

1st 10-day period (1-10/02/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	21.5	17.3	8.6
Precipitation - Reference Evapotranspiration	-21.1	-12.1	0.6
Number of Rainy Days	1.0	3.0	2.3
Number of Dry Days	6.0	19.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



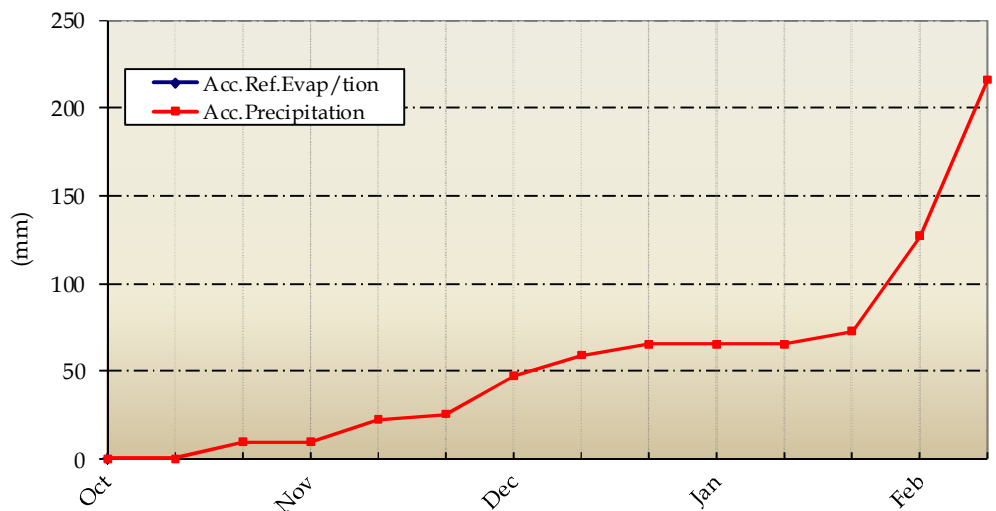
Tanagra

1st 10-day period (1-10/02/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	9.8	15.2	10.2	13.9	3.8	1.6	1.2	1.9	3.6	4.9	6.6	12.0	12.3
	Min	2.2	-1.8	1.6	-0.8	3.4	-1.1	-2.0	-0.8	-4.2	1.3	-0.2	3.2	3.2
Relative Humidity	Max	78	82	83	98	100	100	100	100	99	93	93	95	93
	Min	31	25	44	39	73	82	97	92	80	64	63	52	53
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		7.1	8.5	3.9	0.0	0.0	-	0.0	0.0	2.5	1.0	2.6	5.0	4.1
Precipitation		0.1				30.6	29.9	9.8	14.5	3.7	0.6	89.2	31.0	18.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	21.1
Growing Degrees	5	1.0	1.7	0.9	1.6	0.0	0.0	0.0	0.0	0.0	0.0	5.2	26.4	29.3
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	5.2

1st 10-day period (1-10/02/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	
Number of Rainy Days	7.0	4.0	3.1
Number of Dry Days	4.0	2.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



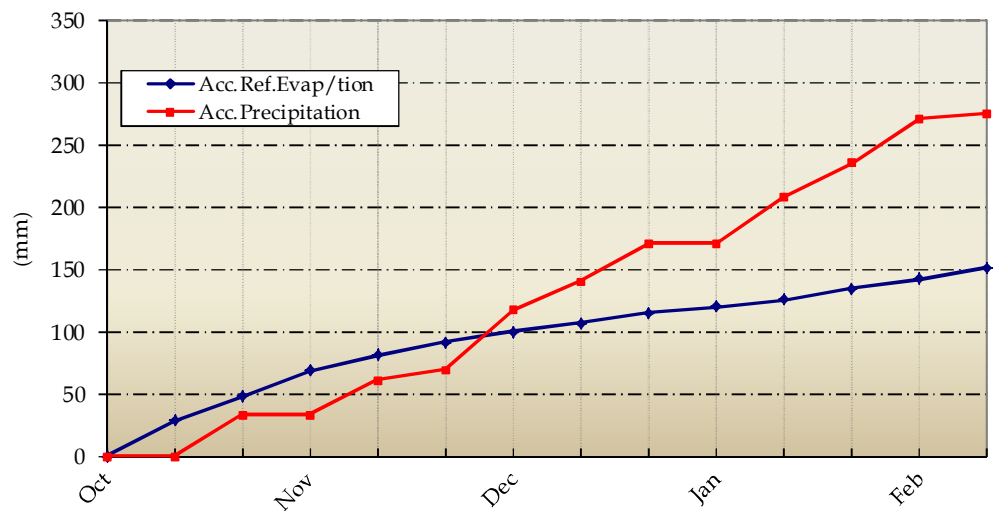
Tripoli

1st 10-day period (1-10/02/2023)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	7.8	-	9.4	10.8	6.8	3.2	0.6	1.2	3.6	5.6	5.4	10.5	10.4
	Min	-3.8	-5.0	-5.6	-3.0	-1.6	-2.8	-1.8	-4.0	-2.0	-0.4	-3.0	0.6	0.3
Relative Humidity	Max	100	100	100	100	100	98	100	84	79	80	94	94	94
	Min	36	46	44	45	69	55	74	60	60	58	55	43	56
Soil Temperature at 10 cm	06 UTC	2.6	1.8	2.4	2.0	2.8	2.2	2.2	1.2	1.0	2.0	2.0	-	4.7
	12 UTC	5.8	5.2	5.2	4.6	4.2	4.4	2.8	1.6	2.0	4.2	4.0	-	5.8
Sunshine Duration		8.4	6.4	5.9	0.0	0.0	4.5	1.0	0.7	1.8	4.9	3.4	5.5	3.8
Precipitation				0.6	0.1	3.7		0.1				4.5	24.1	29.9
Evaporation		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	153.7
Growing Degrees	5	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	10.9	11.8
	10	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.5

1st 10-day period (1-10/02/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	9.0	12.4	4.5
Precipitation - Reference Evapotranspiration	-4.5	11.7	25.4
Number of Rainy Days	4.0	3.0	3.6
Number of Dry Days	2.0	1.0	-

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 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)

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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