



AGROMETEOROLOGICAL BULLETIN

October 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



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

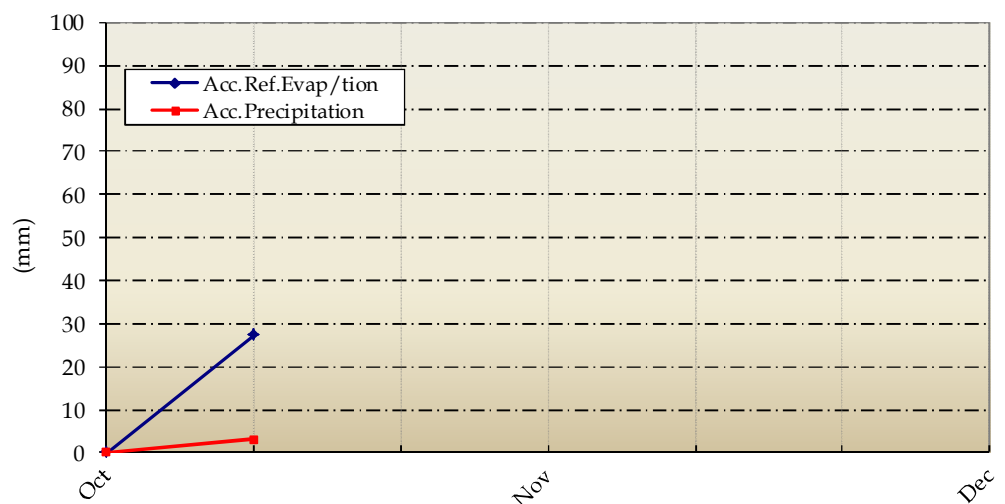
Web adresses of HNMS
www.emy.gr
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

Alexandroupoli

1st 10-day period (1-10/10/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.4	28.4	24.0	21.4	22.8	22.6	23.8	25.2	23.0	24.8	24.2	20.9	23.1
	Min	15.0	17.8	10.0	12.0	6.6	9.8	13.4	9.0	8.0	9.0	11.1	11.2	12.6
Relative Humidity	Max	93	89	89	87	86	85	78	84	89	89	87	82	88
	Min	67	37	39	45	33	36	30	31	50	38	41	43	48
Soil Temperature at 10 cm	06 UTC	21.6	22.6	20.4	20.2	17.6	18.0	18.6	17.6	19.2	17.8	19.4	17.7	15.9
	12 UTC	25.2	25.0	24.2	22.0	20.7	21.4	21.0	21.2	21.6	21.6	22.4	20.8	21.1
Sunshine Duration		9.7	8.6	9.7	8.6	10.2	8.5	10.0	10.4	8.9	9.6	9.4	6.6	5.2
Precipitation				2.0	1.0							3.0	1.5	20.4
Evaporation		8.0	6.0	3.4	4.6	5.0	4.7	7.0	3.6	4.0	4.3	50.6	49.1	45.3
Growing Degrees	5	15.7	18.1	12.0	11.7	9.7	11.2	13.6	12.1	10.5	11.9	126.5	110.1	113.7
	10	10.7	13.1	7.0	6.7	4.7	6.2	8.6	7.1	5.5	6.9	76.5	60.1	69.9

1st 10-day period (1-10/10/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	27.5	31.5	19.3
Precipitation - Reference Evapotranspiration	-24.5	-30.0	1.1
Number of Rainy Days	2.0	1.0	1.6
Number of Dry Days	20.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

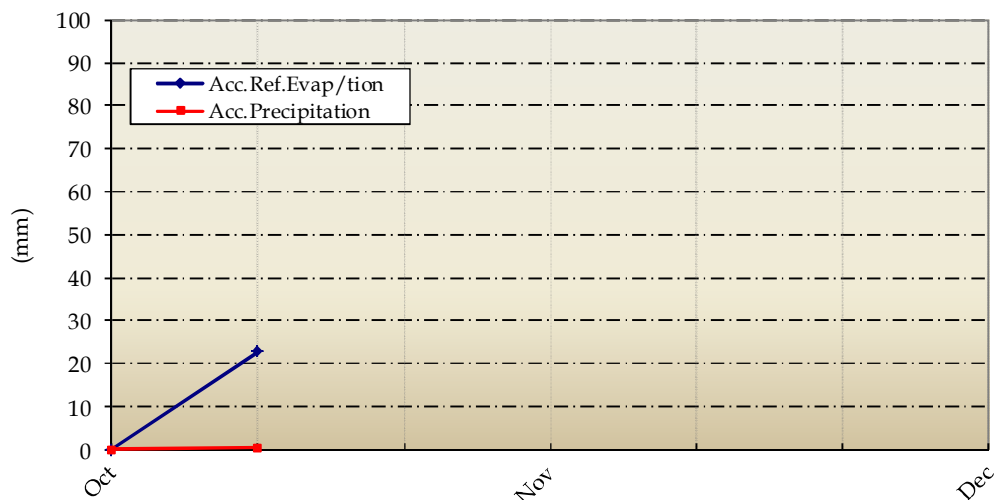


1st 10-day period (1-10/10/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.6	26.0	26.8	28.0	26.3	25.4	25.8	25.4	25.6	26.5	27.0	25.4	25.7
	Min	17.8	21.7	14.7	14.4	15.5	9.3	9.2	11.2	13.0	14.2	14.1	13.1	14.9
Relative Humidity	Max	90	90	94	95	93	94	84	85	93	87	90	92	91
	Min	31	56	51	37	40	33	29	34	41	43	40	45	45
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	21.6	20.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	23.6	24.6
Sunshine Duration		5.7	10.0	9.2	9.7	5.9	8.7	10.2	9.8	9.5	8.9	8.8	7.5	5.1
Precipitation						0.4	0.4					0.8	76.8	13.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	56.5
Growing Degrees	5	21.2	18.9	15.8	16.2	15.9	12.4	12.5	13.3	14.3	15.4	155.7	142.5	127.0
	10	16.2	13.9	10.8	11.2	10.9	7.4	7.5	8.3	9.3	10.4	105.7	92.5	85.7

1st 10-day period (1-10/10/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.8	21.0	27.7
Precipitation - Reference Evapotranspiration	-22.0	55.8	-14.2
Number of Rainy Days	2.0	4.0	1.5
Number of Dry Days	5.0	23.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



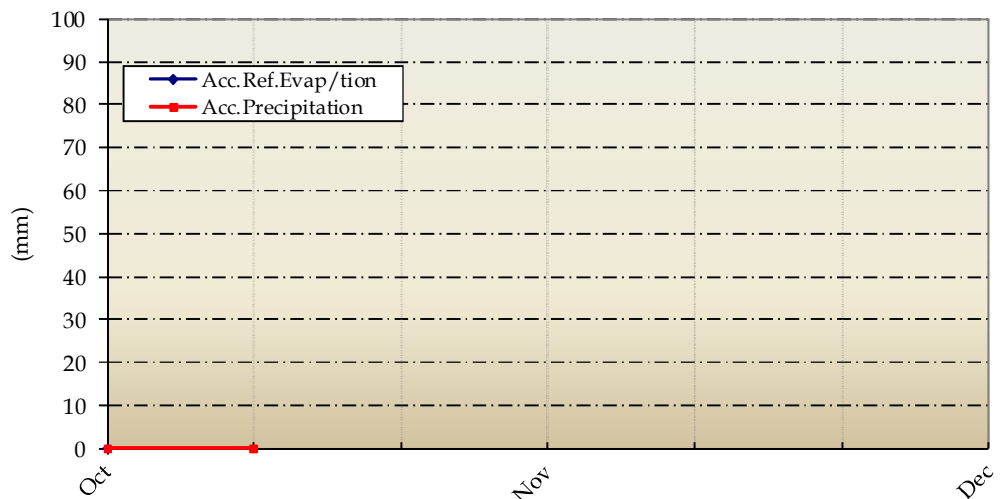
Iraklio

1st 10-day period (1-10/10/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.2	31.2	26.2	25.8	23.2	22.6	23.0	22.8	23.4	23.6	24.9	23.9	25.4
	Min	20.8	23.2	23.0	17.2	20.2	20.2	20.4	20.2	18.4	15.4	19.9	18.6	18.3
Relative Humidity	Max	89	77	88	90	63	70	73	73	81	89	79	90	83
	Min	54	38	61	52	45	51	61	65	61	63	55	72	57
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		9.5	8.8	10.3	10.3	9.7	7.8	6.9	7.5	9.7	9.6	9.0	8.8	5.3
Precipitation									0.1			0.1		4.9
Evaporation		2.6	8.0	4.9	5.3	5.9	8.0	3.4	5.4	3.2	3.6	50.3	49.3	44.3
Growing Degrees	5	19.0	22.2	19.6	16.5	16.7	16.4	16.7	16.5	15.9	14.5	174.0	162.2	163.1
	10	14.0	17.2	14.6	11.5	11.7	11.4	11.7	11.5	10.9	9.5	124.0	112.2	114.7

1st 10-day period (1-10/10/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	1.0	0.0	1.1
Number of Dry Days	14.0	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

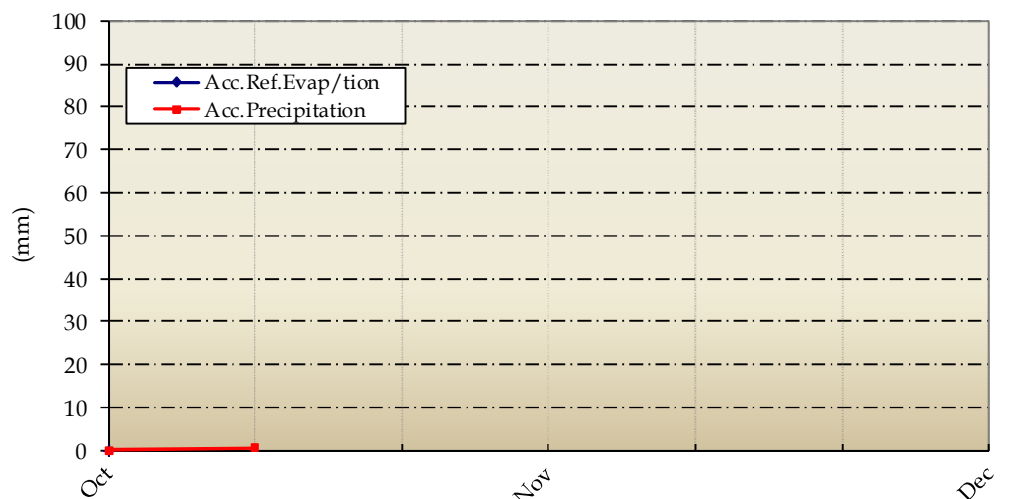


1st 10-day period (1-10/10/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.4	24.6	25.4	23.2	22.5	22.0	24.7	23.2	24.2	25.3	24.4	22.2	22.8
	Min	13.4	13.7	7.1	8.6	7.6	7.8	6.2	4.4	5.6	7.7	8.2	9.2	10.1
Relative Humidity	Max	100	100	100	96	84	72	81	100	100	100	93	100	96
	Min	35	37	43	33	30	31	24	33	29	30	32	44	49
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	16.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	17.1
Sunshine Duration		4.2	10.5	9.8	10.8	7.9	7.4	10.3	9.6	9.6	7.0	8.7	5.6	3.8
Precipitation		0.0	0.7									0.7	96.4	22.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	16.4	14.2	11.3	10.9	10.1	9.9	10.5	8.8	9.9	11.5	113.3	106.7	94.9
	10	11.4	9.2	6.3	5.9	5.1	4.9	5.5	3.8	4.9	6.5	63.3	56.7	53.4

1st 10-day period (1-10/10/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	21.1
Precipitation - Reference Evapotranspiration	-	-	1.8
Number of Rainy Days	1.0	5.0	2.1
Number of Dry Days	3.0	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

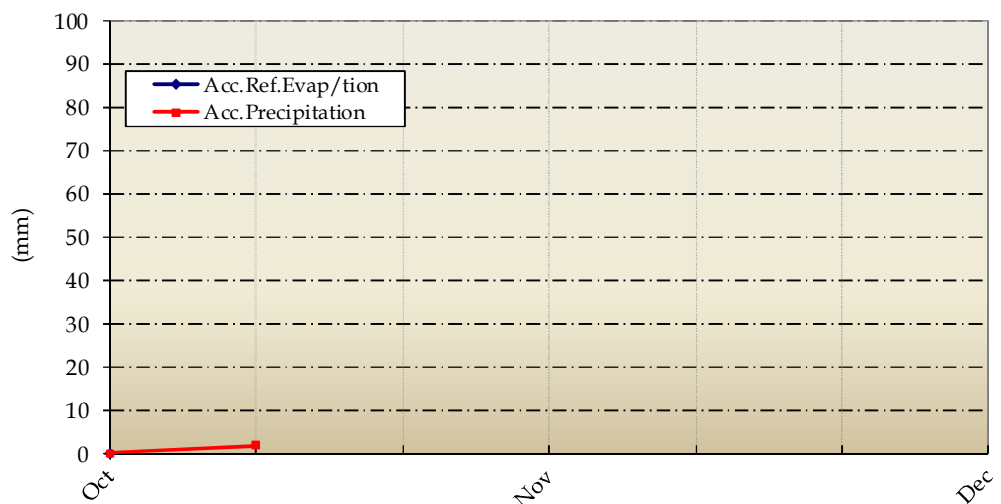


1st 10-day period (1-10/10/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.6	29.0	27.2	28.8	27.7	25.4	27.0	26.4	26.0	25.8	27.9	25.8	26.3
	Min	16.3	21.8	14.8	15.0	16.4	12.7	10.1	12.6	11.7	12.9	14.4	14.6	14.6
Relative Humidity	Max	90	93	91	92	95	83	82	88	93	95	90	82	91
	Min	30	40	46	41	35	32	26	29	33	45	36	44	44
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	20.5	20.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	24.2	22.7
Sunshine Duration		7.7	10.3	10.3	9.7	5.1	8.8	10.2	10.3	10.2	9.1	9.2	7.3	6.5
Precipitation			0.0			1.9						1.9	50.3	17.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	46.1
Growing Degrees	5	21.0	20.4	16.0	16.9	17.1	14.1	13.6	14.5	13.9	14.4	161.6	151.9	142.6
	10	16.0	15.4	11.0	11.9	12.1	9.1	8.6	9.5	8.9	9.4	111.6	101.9	96.5

1st 10-day period (1-10/10/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	28.6
Precipitation - Reference Evapotranspiration	-	-	-11.4
Number of Rainy Days	1.0	3.0	2.2
Number of Dry Days	7.0	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

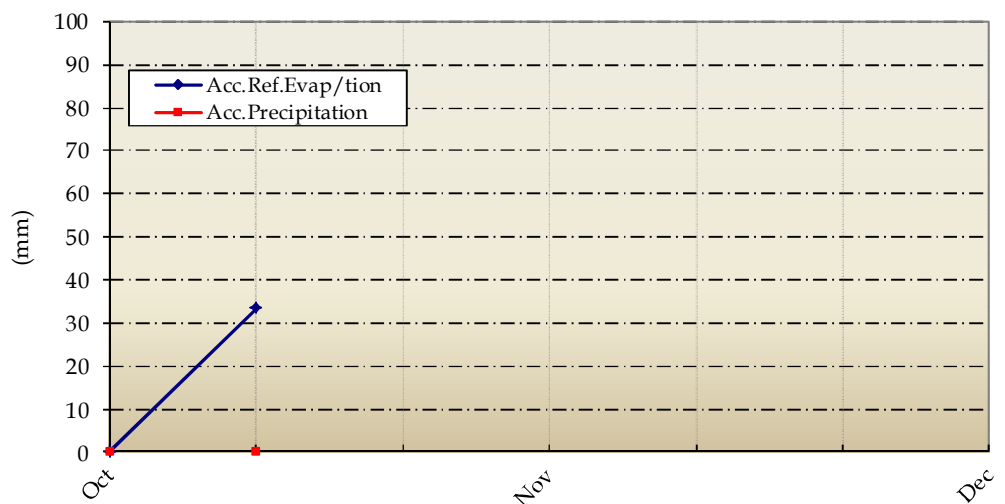


Larisa

1st 10-day period (1-10/10/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.4	29.8	27.8	23.8	23.2	22.4	25.8	26.4	27.4	25.6	26.4	20.6	25.3
	Min	15.8	19.2	11.6	17.0	9.6	6.4	6.8	6.8	9.0	11.0	11.3	12.1	12.3
Relative Humidity	Max	84	75	73	48	79	84	76	84	83	89	78	95	92
	Min	31	26	28	26	32	30	24	24	27	38	29	57	43
Soil Temperature at 10 cm	06 UTC	24.0	24.4	22.2	23.6	22.4	20.6	20.4	20.2	20.8	21.0	22.0	18.4	19.9
	12 UTC	25.8	25.8	24.8	24.8	24.0	22.4	22.0	22.0	22.4	22.4	23.6	20.4	21.3
Sunshine Duration		8.9	10.3	9.9	8.6	8.7	5.3	10.0	9.6	9.6	9.3	9.0	4.2	4.1
Precipitation													59.3	13.3
Evaporation		8.9	8.6	8.3	9.1	6.0	5.0	7.8	5.5	6.1	5.9	71.2	24.2	55.4
Growing Degrees	5	18.6	19.5	14.7	15.4	11.4	9.4	11.3	11.6	13.2	13.3	138.4	113.3	130.1
	10	13.6	14.5	9.7	10.4	6.4	4.4	6.3	6.6	8.2	8.3	88.4	63.3	83.1

1st 10-day period (1-10/10/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	33.5	20.5	21.0
Precipitation - Reference Evapotranspiration	-33.5	38.8	-7.7
Number of Rainy Days	0.0	4.0	2.1
Number of Dry Days	34.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



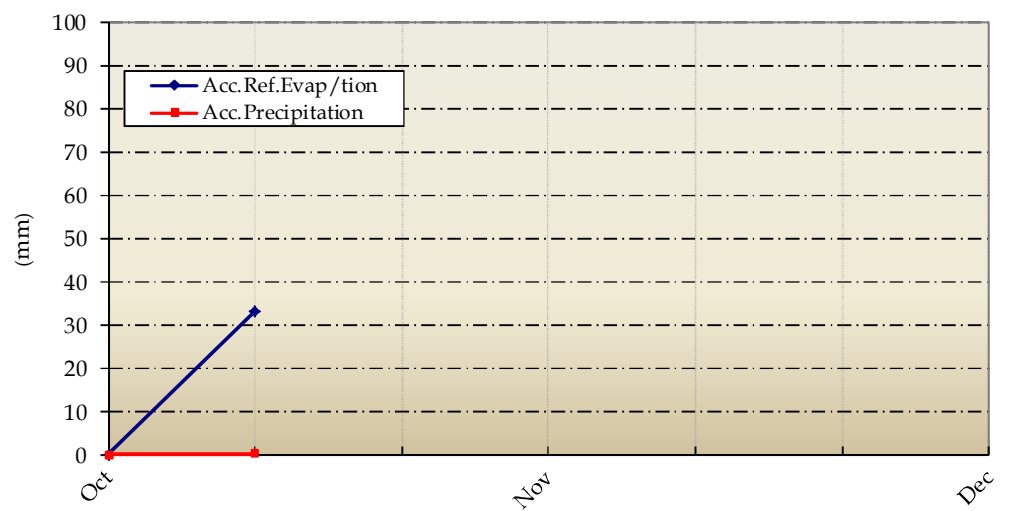
Mikra

1st 10-day period (1-10/10/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.9	26.0	26.2	22.6	22.5	21.9	24.4	24.4	25.3	24.1	24.5	20.4	23.7
	Min	17.6	19.8	12.6	15.4	9.2	8.9	10.2	9.6	10.3	12.8	12.6	13.6	14.2
Relative Humidity	Max	100	100	86	59	77	86	78	80	88	95	85	85	85
	Min	51	39	44	33	38	41	32	35	44	52	41	54	48
Soil Temperature at 10 cm	06 UTC	22.2	22.0	20.4	20.2	18.4	18.2	17.8	18.0	18.4	19.2	19.5	19.1	19.2
	12 UTC	23.6	24.6	22.0	20.8	18.6	20.4	20.2	20.4	20.4	21.0	21.2	20.8	22.3
Sunshine Duration		7.2	10.5	7.6	10.3	9.9	0.0	10.7	10.3	9.8	6.5	8.3	4.0	4.7
Precipitation				0.1								0.1	21.0	11.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	47.9
Growing Degrees	5	17.8	17.9	14.4	14.0	10.9	10.4	12.3	12.0	12.8	13.5	135.9	119.7	132.5
	10	12.8	12.9	9.4	9.0	5.9	5.4	7.3	7.0	7.8	8.5	85.9	69.7	85.2

1st 10-day period (1-10/10/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	33.1	22.0	20.2
Precipitation - Reference Evapotranspiration	-33.0	-1.0	-8.9
Number of Rainy Days	1.0	4.0	1.8
Number of Dry Days	20.0	7.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



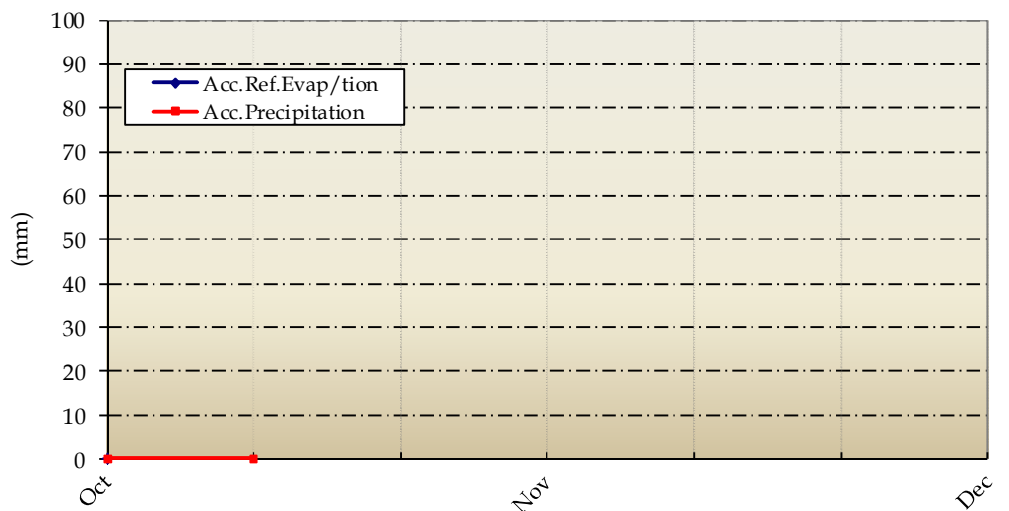
Tanagra

1st 10-day period (1-10/10/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.6	28.6	27.1	21.5	20.6	21.1	21.5	22.8	26.1	24.8	24.6	21.8	24.9
	Min	16.4	22.0	13.1	18.0	11.2	12.0	16.8	14.4	9.8	10.2	14.4	13.4	13.9
Relative Humidity	Max	70	55	69	58	69	76	60	66	76	79	68	81	89
	Min	32	24	26	33	38	30	34	33	24	36	31	44	41
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		9.6	10.0	10.2	8.8	4.7	7.5	9.1	4.8	9.9	9.8	8.4	6.8	6.3
Precipitation													15.1	7.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	45.9
Growing Degrees	5	19.0	20.3	15.1	14.8	10.9	11.6	14.2	13.6	13.0	12.5	144.8	126.0	123.3
	10	14.0	15.3	10.1	9.8	5.9	6.6	9.2	8.6	8.0	7.5	94.8	76.0	80.9

1st 10-day period (1-10/10/2022)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	-
Number of Rainy Days	0.0	3.0
Number of Dry Days	13.0	14.0

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



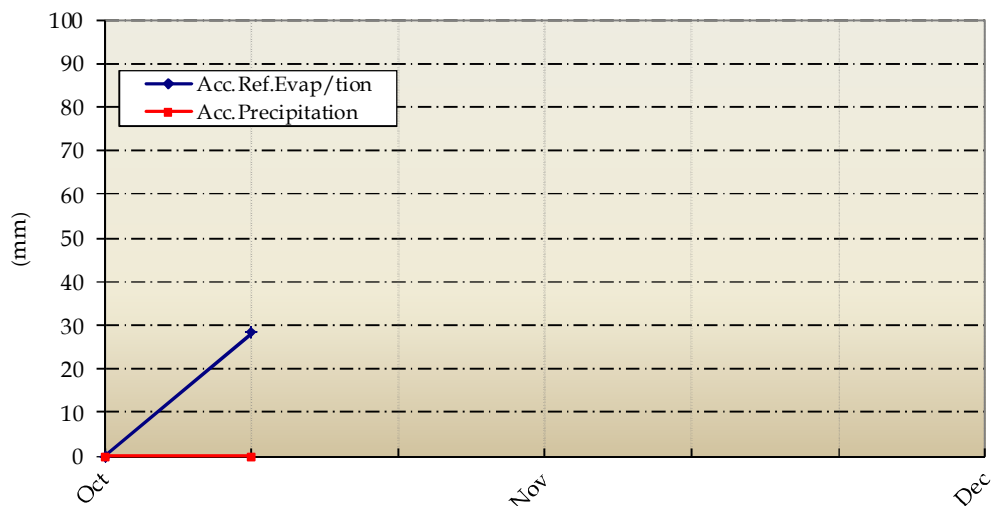
Tripoli

1st 10-day period (1-10/10/2022)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.3	28.5	27.2	22.8	20.4	19.8	20.5	23.0	25.2	23.8	24.4	20.9	23.6
	Min	11.8	18.5	7.7	12.5	12.9	8.4	10.1	11.8	4.1	6.0	10.4	8.1	9.1
Relative Humidity	Max	89	92	95	91	81	78	63	85	92	95	86	94	93
	Min	20	18	27	36	30	29	31	26	24	31	27	42	40
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	14.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	19.8
Sunshine Duration		9.4	10.2	9.9	9.4	6.8	8.9	9.8	10.1	9.8	9.3	9.4	6.8	4.8
Precipitation											0.0	0.0	39.5	8.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	30.1
Growing Degrees	5	17.6	18.5	12.5	12.7	11.7	9.1	10.3	12.4	9.7	9.9	124.2	95.3	89.9
	10	12.6	13.5	7.5	7.7	6.7	4.1	5.3	7.4	4.7	4.9	74.2	45.3	50.5

1st 10-day period (1-10/10/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.4	-	17.7
Precipitation - Reference Evapotranspiration	-28.4	-	-9.2
Number of Rainy Days	0.0	3.0	1.7
Number of Dry Days	13.0	24.0	-

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)

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

© HELLENIC NATIONAL METEOROLOGICAL SERVICE

Reproduction is prohibited without written permission

El. Venizelou street 14, Zip Code 16777

Helliniko, Athens



**ΕΘΝΙΚΗ
ΜΕΤΕΩΡΟΛΟΓΙΚΗ
ΥΠΗΡΕΣΙΑ**

HELLENIC NATIONAL METEOROLOGICAL SERVICE

Division of Climatology-Applications

Issue Editors :

Papakrivou Anastasia

anastasia.papakrivou@hnms.gr

The present bulletin was designed and implemented under the support of Water Resources Management Division of Agriculture University of Athens